

**TRIBHUVAN UNIVERSITY
FACULTY OF EDUCATION
OFFICE OF THE DEAN**



**Revised Curriculum of M.Ed.
Third Semester**

2078 (2021)

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Core Education

Ed. 532: Research Methodology in Education

Course No: Ed. 532

Nature of Course: Theoretical

Level: M. Ed.

Credit Hours: 3

Semester: Third

Total Teaching Hours: 48

1. Course Introduction

This is a basic educational and social research methodology course aimed at helping students broaden their knowledge and skills in doing and writing quantitative, qualitative, and mixed research. The course begins with introducing social and educational research based on philosophies, and then enables students to select appropriate research designs and tools to conduct the research. The students will acquire knowledge and skills required for conducting research in both quantitative and qualitative areas. Taking survey (and other quantitative research methods), ethnographic, phenomenological, and narrative inquiry methods at disposal learners will chart the journey of scholarship about different research designs. In addition, there will be an opportunity for the students to familiarize themselves with quality and ethical standards needed by researchers. Finally, the course will enable the students to prepare research proposal and write report following the guidelines of American Psychological Association (APA)'s publication manual.

2. General Objectives

The general objectives of the course are to enable students to:

- Demonstrate the understanding of philosophical grounds of positivistic and interpretive research.
- Generate the research problems from within the field of interest of the students themselves engaging in the discourse and debates of knowledge in the field.
- Develop skills of reviewing different forms of literature for justifying the research and setting a lens of explaining phenomena of inquiry.
- Conceptualize the strategies of engaging in the field of research and processing different forms of data.
- Select appropriate design for conducting the research.
- Develop basic skills for tools construction, data collection, and analysis.
- Describe the need for ethical and quality standards in research project.
- Prepare research proposal for conducting the research.
- Use citation and referencing using APA guidelines.
- Write research report based on the APA guidelines.

3. Course Details

Unit I: Understanding Social and Educational Research Based on Philosophies (8 hrs.)		
Specific Objectives	Contents	Content coverage
<ul style="list-style-type: none"> • Develop the basic concepts of research and characteristics • Describe the concept of quantitative (i.e., positivistic/post positivist) and qualitative (i.e., interpretive) research paradigms in relation to chosen research problem; and • Differentiate the philosophical assumptions of positivistic and interpretive research paradigms • Generate quantitative and qualitative research problems • Formulate hypotheses and research questions • Conceptualize and explain the purpose and procedure of review • Review different forms of literature • Select appropriate theoretical framework and translate it into conceptual diagrams. 	1.1 Basic concepts of social and educational research 1.2 Needs/ use of educational and social research 1.3 Concept of research paradigms 1.3.1 Positivism and post positivism 1.3.2 Interpretivism 1.4 Differences on key tenets of quantitative and qualitative research 1.5 Problematizing the issue of inquiry 1.5.1 Selecting research problems for qualitative and quantitative research 1.5.2 Formulating research objectives/purpose, framing research questions and developing hypothesis (if required) 1.6 Reviewing literature: Importance and strategies 1.7 Theoretical and conceptual frameworks	1. Meaning and characteristics of research, and social and educational research 2. Paradigms and its components (ontology, epistemology, axiology, and methodology) 3. Meaning and characteristics of positivism and interpretivism (and their ontologies, epistemologies, axiologies, and methodologies) 4. Concepts, meaning, characteristics examples and differences of qualitative and quantitative research 5. Selecting research problem of their own discipline and formulating specific research objectives and research questions (concepts and examples) 6. Meaning and concepts of literature review, importance of literature review, strategies for doing literature review, reflecting the review 7. Meaning and examples of theoretical and conceptual framework
Teaching Learning Strategies		
Teacher's Inputs (8 hrs.)	Students' Efforts (16 hrs.)	Tasks for Assignment
<ul style="list-style-type: none"> • Orientation to the students about the topics, their roles, and requirements • Sharing ideas on content areas • Discussion and 	<ul style="list-style-type: none"> • Take part in discussion during discussion and presentation session • Search and collect learning materials for review • Review recommended books and articles individually 	<ul style="list-style-type: none"> • Select a research issue/title, formulate research objectives, and research questions and write the importance or rational for doing this study. • Select a research issue, collect 4-5 relevant literature, review

<ul style="list-style-type: none"> reflection Reviewing books and articles related to content areas Presentation of ideas, discussion, and feedback 	<ul style="list-style-type: none"> Select a research issue and develop research objectives and questions Gets feedback from peers and teachers. 	the literature and write a short review.
Unit II: Comprehending Research Methodologies and Methods (14 hrs.)		
Specific Objectives	Contents	Content coverage
<ul style="list-style-type: none"> Explain the key characteristics of major positivistic and non-positivistic research methodologies Choose appropriate research methodology for the issue of inquiry chosen Describe critically the relationship between research problem/agenda and methodology(s) 	2.1 Quantitative research methodologies/methods 2.1.1 Survey and its types 2.1.2 Experimental designs 2.2 Qualitative methodologies/methods 2.2.1 Case study 2.2.2 Ethnography 2.2.3 Narrative inquiry 2.2.4 Phenomenology 2.2.5 Grounded Theory 2.3 Mixed method research: sequential, parallel, and embedded 2.4 Action research and its characteristics	1. Rationales for choosing a particular research design 2. Concept, meaning, characteristics of each design. 3. Steps for doing the research. 4. Examples of each design.
Teaching Learning Strategies		
Teacher's Inputs (14 hrs.)	Students' Effort (28 hrs.)	Tasks for Assignment
<ul style="list-style-type: none"> Sharing theoretical ideas and reflection on various design of the research Facilitate students for reflecting on the strategies for using appropriate research design Provide a comparative overview of quantitative and qualitative designs separately 	<ul style="list-style-type: none"> Participate in discussions and sharing ideas among the peers and facilitators Presenting reflection of the ideas based on reading books and papers Work in pair or group and reflect on various designs with their strengths and limitations Choose appropriate design for doing a particular research. 	<ul style="list-style-type: none"> Choose an appropriate research design and make a plan about what issue you want to study using this design and how. Select a research issue or problem for action research and prepare a plan for doing the research.
Unit III: Strategies of Selecting Respondents/Participants and Collecting Data (8 hrs.)		
Specific Objectives	Contents	Content Coverage
<ul style="list-style-type: none"> Conceptualize population and sampling procedure Describe key 	3.1 Strategies of selecting respondents/participants 3.1.1 Determining sampling size in quantitative	1. Concept of population, sampling 2. Sample size calculation using Yamane's formula.

<p>techniques of selecting the research participants based on informed techniques</p> <ul style="list-style-type: none"> • Developing different forms (questionnaires and guidelines) of tools and collecting data with the help of tools • Explain the ways of engaging meaningfully in the field with structured and open interviews and observations 	<p>research</p> <p>3.1.2 Sampling strategies for quantitative research</p> <p>3.1.3 Sampling strategies for qualitative research</p> <p>3.2 Tools and techniques of data collection</p> <p>3.2.1 Quantitative data collection tools</p> <ol style="list-style-type: none"> Questionnaire Structured interview Attitude scale Test <p>3.2.2 Qualitative data instruments</p> <ol style="list-style-type: none"> Unstructured interviews Participant observation Focus group discussions Field notes 	<p>3. Sampling for quantitative study - simple random, stratified random, systematic, cluster, etc.</p> <p>4. Sampling for qualitative study: Purposive, quota, convenience, snowball, etc.</p> <p>5. Tools – Introduction, types, characteristics, examples, strengths, limitations</p>
Teaching Learning Strategies		
Teacher's Inputs (8 hrs.)	Students' Effort (16 hrs.)	Tasks for Assignment
<ul style="list-style-type: none"> • Providing resources, concepts and examples • Facilitating students to identify appropriate sampling design and techniques • Assisting students to calculate sample size • Facilitating students for designing appropriate data collection tools 	<ul style="list-style-type: none"> • Reflect on the concepts and examples provided by teachers • Read the resources provided about sampling and tools • Select appropriate sampling techniques that best fit to the issues/problems of the study • Design appropriate data collection tools for the issues/problems selected 	<ul style="list-style-type: none"> • Select an appropriate issue for a survey study and design a questionnaire for studying this issue from a particular group of respondents. • Elaboration based on the following questions: Which specific research methodology(s) do you plan to apply for your research problem? Why? Describe your study site, population and sampling (in positivistic research)/selecting participants (in non-positivistic research).
Unit IV: Data Analysis and Quality Standards in Research (8 hrs.)		
Specific Objectives	Contents	Content Coverage
<ul style="list-style-type: none"> • Describe basic data production and analysis methods in research project; and • Discuss reflectively the experiences of learning of different 	<p>4.1 Quantitative data analysis</p> <ol style="list-style-type: none"> Data cleaning and coding Statistical procedures of analyzing data (descriptive and inferential) <p>4.2 Working with textual/qualitative information</p>	<ol style="list-style-type: none"> Data cleaning, coding, entering, analysis using Excel or SPSS. Data analysis using Central Tendency and Measure of Dispersion (No. need of calculation); introduction of

<p>approaches to data production and analysis</p>	<p>4.2.1 Coding, transcribing, generating themes, and interpreting meaning 4.2.2 Crafting narratives, vignettes, and stories 4.3 Quality standard in research 4.3.1 Internal validity, external validity reliability and objectivity in quantitative research 4.3.2 Credibility, transferability, dependability, and conformability in qualitative research 4.4 Ethical issues in research</p>	<p>EXCEL and SPSS software for analyzing the quantitative data. 3. Thematic techniques for qualitative data analysis [doing small interview, transcribing (transferring raw data into text), coding, comparing, grouping, theme generating, interpreting]. 4. Strategies for integrating verbatim quotes, paraphrasing narratives, displaying vignettes and stories or case. 5. Quality for quantitative analysis – internal and external validity, reliability and validity (concept and examples) 6. Quality for qualitative data analysis (credibility, transferability, dependability and confirmability and strategies form ensuring them such as triangulation, peer review, thick description, member check, prolonged engagement in the field etc.) 7. Ethical issues – informed consent, confidentiality, trust, reciprocity, no manipulation of data, academic honesty.</p>
<p>Teaching Learning Strategies</p>		
<p>Teacher’s Inputs (8 hrs.)</p>	<p>Students’ Effort (16 hrs.)</p>	<p>Tasks for assignment</p>
<ul style="list-style-type: none"> • Provide an overview of quantitative and qualitative data analysis techniques. • Provide examples of quantitative data analysis using EXCEL or SPSS software. 	<ul style="list-style-type: none"> • Read the materials and resources provided by teachers and reflect on the quantitative and qualitative data analysis techniques • Doing practice of Excel or SPSS data analysis. • Reflect on quality standards on qualitative and quantitative data and results. 	<ul style="list-style-type: none"> • Interview few participants on a particular group of respondents, audio record and transcribe the interview. By coding, comparing and grouping, make a few themes and interpret them. • Make a survey questionnaire on a particular issue.
<p>Unit V: Preparing Research Proposal and Research Report (10 hrs.)</p>		
<p>Specific Objectives</p>	<p>Contents</p>	<p>Content Coverage</p>

<ul style="list-style-type: none"> • State the need of proposal and requirements for research report • Explain essential components of research proposal • Develop a research proposal in chosen/given research problems. • Describe essential skills and steps in research report writing • Explain the components of research report/thesis • Use APA format in thesis writing 	<p>5.1 Need of preparing research proposal</p> <p>5.2 Components of research proposal</p> <p>5.3 Preparing research report based on the APA format</p> <p>5.3.1 Components of research report</p> <p>5.3.2 General formats and guidelines for preparing research report</p> <p>5.3.3 Citations</p> <p>5.3.4 Referencing</p>	<p>1. What is research proposal, why research proposal is important, what are the components of the research proposal, what is the difference between qualitative and quantitative research proposal</p> <p>2. Research report: needs and formats</p> <p>3. APA guidelines for preparing research report – general formatting, citation and referencing</p>
Teaching Learning Strategies		
Teacher's Inputs (10 hrs.)	Students' Effort (20 hrs.)	Tasks for Assignment
<ul style="list-style-type: none"> • Presentation of need and components of research • Demonstration of sample of proposal • APA presentation (mainly the formatting of the report, citation and referencing) • Presentation of example/sample of APA report and article 	<ul style="list-style-type: none"> • Reading, reflection and understanding – research proposal, research report and their components • Group work on reviewing research proposal and research report • Practice on APA citation and referencing 	<ul style="list-style-type: none"> • Choose a research issue and prepare a brief proposal to conduct research on the selected issue.

4. Evaluation Criteria (Internal 40%, External 60%)

Students' learning will be evaluated based on 40% internal assessment and 60% external examination. Evaluation criteria will be as explained below.

Criteria	Mark	Remarks
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Internal Assessment: The internal assessment will be formative as well as summative in nature which includes following activities.

Attendance	5	70-80=3, 81-90=4, 91-100=5
Class participation	5	Presentation (either in pair or individual) of the given task in an

		original and natural style.
Assignment I (Individual task)	10	Any one task from Units I or II.
Assignment II (Group task)	10	Any one task from Units III or IV or V.
Assignment III (Individual test)	10	Written examination: Objective and subjective items
External Evaluation: The external 60% written test covers the following nature of test items and points.		
		Group A: Objective items (10× 1) = 10
External written examination	60	Group B: Short answer type items (6× 5) = 30 (including two or questions)
		Group C: Essay type items (10× 2) = 20 (including one or question)

5. Recommended Books and References

- American Psychological Association. (2010). *Publication manual of the American Psychological Association*. Washington, DC: American Psychological Association.
- Bryman, A. (2012). *Social research methods*: UK: Oxford University press.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. London and New York: Routledge
- Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks: Sage.
- Gobson, W. J., & Brown, A. (2009). *Working with qualitative data*. New Delhi: Sage Publications Inc.
- Hesse-Biber, S. N. (2010). *Mixed methods research: Merging theory with practice*: Guilford Press.
- Taylor, P. C., & Wallace, J. (Eds.). (2007). *Contemporary qualitative research: Exemplars for science and mathematics educators*. Dordrecht: Springer.
- Taylor, P. C., Taylor, E., & Luitel, B. C. (2012). Multi-Paradigmatic transformative research as/for teacher education: An integral perspective. In K. Tobin, B. Fraser & C. McRobbie (Eds.), *Second international handbook of science education* (pp. 373-388). Dordrecht, The Netherlands: Springer.
- Taylor, P.C. & Medina, M. (2011). Educational research paradigms: From positivism to pluralism. *College Research Journal*, 1(1), 1-16. Assumption College of Nabunturan, Philippines.

Ed. 533: Measurement and Evaluation in Education

Course No.: Ed. 533

Nature of Course: Theoretical

Level: M. Ed.

Credit Hours: 3

Semester: Third

Total teaching Hours: 48

1. Course Introduction

The course ‘Measurement and Evaluation in Education’ is a core area of study designed for the third semester of master's degree program of faculty of education. This includes the concept and nature of educational measurement and evaluation thereby focusing on reliability and validity of a test. The course emphasizes on construction process of achievement test, standardization process of psychological tests, and critical analysis of evaluation system adopted in school level.

2. General Objectives:

- Analyze the relation among test, measurement, evaluation, and assessment,
- Critically analyze evaluation system of Nepal including grading system,
- Introduce concept, need, and use of reliability of test,
- Compute reliability using different methods,
- Orient to validity and validity consideration with its uses,
- Determine validity of test applying different methods,
- Construct achievement test using different processes,
- Advance understanding about standardizing process of psychological tests.

3. Course Details

In order to achieve the expected outcomes of the course, the following specific objectives, contents, content elaboration are framing in the table below:

Unit I: Educational Measurement		(8 hrs.)
Specific objectives	Contents	Content coverage
• Develop concepts of measurement and evaluation	1.1 Test, measurement, evaluation, and assessment.	1. Concept of test, measurement, evaluation, and assessment
• Elaborate use of evaluation	1.2 Purpose and use of educational evaluation	2. Purpose and use of evaluation (instructional, research, planning, decision making)
• Show relationship among test measurement and evaluation	1.3 Difference among measurement, assessment, and evaluation	3. Key differences among the construct measurement, assessment, and evaluation
• Introduce scales of measurement and elaborate its use	1.4 Measurement scales	4. Measurement scales (nominal, ordinal, interval, and ratio) with properties and uses
• Explain the current trends in educational measurement	1.5 Current trends in educational measurement	5. Current trends in educational measurement ('High stakes' testing, performance and portfolio assessment-concept and tools development,
• Critically analyze role and function of National Examination Board and	1.6 Student evaluation in school education in Nepal	

- National Assessment of Student.
- Analyze internal assessment of school education in Nepal
 - Introduce grading system and analyze its merits and demerits

- technological advances in testing-general introduction and use of ICT in evaluation)
6. Internal and external assessment in schools, National Examination Board-structure and function, and National Assessment of Student Achievement -NASA-introduction, practice and use. Grading system (conventional, letter grading, GPA, CGPA, process, merits and demerits)

Teaching Learning Strategies

Teacher's Inputs (8 hrs.)	Students' Efforts (16 hrs.)	Tasks for assignment
Introduce overall course and requirements, provide resources for study, deliver classes using different methods, orient students about the review, allocate content for presentation (provide opportunity to choose favorable content). Supervise required task, evaluate the task and provide feed-back.	Be oriented about the course and requirements, collect, and study the resources, choose/select a task from the content area, accomplish required task, present the task and gets feed-back from peers and teachers.	Review a book /book chapter based on the any content area of the course.

Unit II: Reliability and Standard Error of Measurement (10hrs.)

Specific objectives	Contents	Content coverage
<ul style="list-style-type: none"> • Introduce reliability and explain its in measurement • Introduce different methods of estimating reliability • Compute reliability coefficient using different methods • Explore relationship between reliability and validity • Elaborate the concept and 	<p>2.1 Reliability</p> <p>2.2 Methods of estimating reliability with computation</p> <p>2.2.1 Measuring stability</p> <p>2.2.2 Measuring equivalency</p> <p>2.2.3 Measuring internal consistency</p> <p>2.2.4 Measuring Inter-</p>	<p>1. Concept of reliability and use of reliability in testing.</p> <p>2. Estimating reliability coefficient of the test and interpreting the result using test-retest, parallel forms, and internal consistency (split-half, Kuder-Richardson). Determining and interpreting consistency in scoring between scorer and within scorer.</p> <p>3. General interpretation using</p>

<p>use of standard error of measurement</p> <ul style="list-style-type: none"> • Compute standard error of measurement 	<p>rater consistency</p> <p>2.3 Interpreting reliability coefficients</p> <p>2.4 Factors influencing reliability measures</p> <p>2.5 Standard error of measurement</p>	<p>Garret's criterion, aspects to be considered while interpreting the coefficients (purpose of test, types of test, nature of variables, nature of groups, length of test, difficulty level of test, scoring reliability of test, and other obstacles).</p> <p>4. Influencing factors (test, examinee, administration and scoring related).</p> <p>5. Concept and estimation of standard error of measurement using classical concept and statistical computation, relation with reliability, finding standard error using raw score, showing error using normal curve.</p>
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Teaching Learning Strategies

Teacher's Inputs (10 hrs.)	Students' Efforts (20hrs.)	Tasks for assignment
<ul style="list-style-type: none"> • Introduce concept of reliability, its and use in testing and measurement, share ideas on computing reliability coefficient using different methods. • Provide text for study and give ideas to estimate standard error of measurement and interpret standard error using normal curve. • Give guideline for required tasks. Allocate tasks, supervise students' activities, judge the task and provide feed-back. 	<ul style="list-style-type: none"> • Actively participate in the class activities, study prescribed related texts, compute reliability and standard error of measurement, • Be oriented to the required task. • Accomplish required task according to provided guidelines. Present the result of task in class. Get feed-back from colleagues and teacher. 	<ul style="list-style-type: none"> • Construct and administer objective test in a group of students and compute and interpret reliability.

Unit III: Test Validation

(10 hrs.)

Specific Objectives

Contents

Content coverage

<ul style="list-style-type: none"> • Clarify the concept of validity and validity consideration • Elaborate the need of validity in measurement and evaluation • Explain the major considerations in validation • Compute and interpret validity coefficients. • Explain the factors influencing validity. 	<p>3.1 Validity</p> <p>3.2 Major considerations in validation</p> <p>3.2.1 Content consideration</p> <p>3.2.2 Construct consideration</p> <p>3.2.3 Test-criterion relationships</p> <p>3.2.4 Consideration of consequences</p> <p>3.3 Interpreting validity coefficients</p> <p>3.4 Factors influencing validity</p> <p>3.5 Relation between test reliability and validity</p>	<ol style="list-style-type: none"> 1. Concept of validity and validity consideration, need and use of validity in measurement and evaluation. 2. Concept and procedure of estimation of validity using content, construct, criterion, and consequences consideration. 3. Interpretation of validity (logical and statistical) 4. Key factors influencing validity (test related factors, administration related, student related, context related) 5. Relation between reliability and validity in terms of meaning, purpose, focus, method, statistical relation, variance relation
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Teaching Learning Strategies

<p>Teacher's Inputs' (8 hrs.)</p> <ul style="list-style-type: none"> • Sharing ideas on the contents, provide resources and opportunity of computing validity, provide guidelines for the tasks, supervise, evaluate, and provide feed-back. 	<p>Students' Efforts (16 hrs.)</p> <ul style="list-style-type: none"> • Actively participate in class, be oriented and select the task, act the selected task, prepare report, present the task and get feed-back from colleagues and teacher. 	<p>Tasks for assignment</p> <ul style="list-style-type: none"> • Prepare a reflective report including all the processes of test validation.
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Unit IV: Achievement Test Construction

(10 hrs.)

Specific Objectives	Contents	Content coverage
<ul style="list-style-type: none"> • Elaborate concept and use of achievement test. • Preparation of specification grid using blooms' and Kortholts' taxonomy. • Write different types of test items and prepare scoring rubrics and answer key. • Organize of test items. • Administer prepared test 	<p>4.1 Achievement test</p> <p>4.2 Answer writing art</p> <p>4.3 Test specification</p> <p>4.4 Item writing</p> <p>4.5 Test administration</p> <p>4.6 Scoring and item analysis</p> <p>4.7 Result analysis</p> <p>4.8 Use of test result</p>	<ol style="list-style-type: none"> 1. Concept and use of achievement test 2. Style of responding questions 3. Preparation of specification grid using modified Blooms' taxonomy. 4. Objective test (multiple choice items including higher levels questions with answer key). Subjective items (Short- for measuring knowledge to

- Identify P value, D value and power of distractor of the items.
- Prepare chart of P and D value and interpret the chart.
- Prepare result sheet.
- Analyze and interpret test result.
- Elaborate formative and summative use of test result.

evaluation level; long- for measuring understanding, interpretive, critical, reflective, problem solving, analytical, and creative abilities with scoring rubrics).

5. Administration of the test (Test environment, management, invigilation, ethical aspects).
6. Scoring of test papers using scoring key and rubrics, making result sheet, doing item analysis (difficulty level, discrimination index, and distractor/foil analysis).
7. Analysis of result- using bar diagram, histogram, pie-chart, mean, median, mode, percentile rank, standard deviation.
8. Use of result: Diagnostic, formative and summative.

Teaching Learning Strategies

Teachers Input (10 hrs.)	Students Efforts (20 hrs.)	Tasks for assignment
<ul style="list-style-type: none"> • This unit is focused on practical activities. Present the concept and use of achievement test. • Provide ideas and models of specification chart using blooms' and Kortholts' taxonomy. Provide ideas and examples for writing different types of test items and rubrics and answer key. Provide guideline for organizing test items, administering and scoring the test. • Instruct about item analysis, develop item analysis chart, prepare result sheet, analyze result and use of result. 	<ul style="list-style-type: none"> • Take part in classroom discussion to develop conceptual clearance about the content. • Study the resources. Be oriented for required task. • Prepare a specification chart of any subject of major or core areas of secondary level using Blooms' or Kortholts' taxonomy. Write test items according to specification chart (at list short answer type 5, long answer type 5, multiple choice 10), organize and arrange the items, administrate the test visiting school, score the 	<ul style="list-style-type: none"> • Construct an achievement test collectively following the steps of test construction process.

Allocate task, supervise the task, judge the task, and provide feedback.

test, analyze the test items, identify P value, D value and power of distractor of the items, prepare chart of P and D value and interpret the chart.

- Prepare result sheet, interpret result using graph and pie chart, interpret further the use of the test result.
- Write a reflective report including accomplished tasks.

Unit V Standardization of Test

(10 hrs.)

Specific Objectives	Contents	Content coverage
<ul style="list-style-type: none"> • Explain the concept, characteristics and uses of standardized test • Explain the process of test standardization • Introduce intelligence, personality, and aptitude • Construct test items for testing intelligence, personality, and aptitude • Critically analyze role and function of National Examination Board and National Assessment of Student. • Analyze the process of schools' performance evaluation. 	<p>5.1 Introduction of standardization of test</p> <p>5.2 Process of standardization of test</p> <p>5.3 Testing intelligence, personality, attitude, and aptitude</p> <p>5.4 Measuring complex achievement (interpretive exercise)</p> <p>5.5 Performance-based assessment of students.</p> <p>5.6 Performance evaluation of schools</p>	<ol style="list-style-type: none"> 1. Concept, characteristics, and uses of standardized test. 2. Standardization process (Planning, preparing the preliminary format, administration of the test, item analysis, determine reliability and validity, preparing final form, determining norms (raw scores, age norms, grade norm, percentile norms and standard scores), preparing test manual. 3. Concept and use of intelligence, personality, attitude and aptitude test. Construction of test items for measuring intelligence, personality, attitude and aptitude. 4. Concept and developing tools for interpretive exercise. 5. Performance based assessment (Concept, types of performance assessment, construction of performance task). 6. Introduction of performance

assessment of schools conducted by ERO and review of school performance evaluation form.

Teaching Learning Strategies

Teacher's Inputs (20 hrs.)	Students' Efforts (40 hrs.)	Tasks for assignment
<ul style="list-style-type: none"> • Class presentation for clarifying the concept, characteristics, uses and process of test standardization. • Introduce intelligence, personality, and aptitude test. Provide guidelines and task for constructing test items for testing intelligence, personality, and aptitude. • Provide task for analyzing the role and function of National Examination Board and National Assessment of Student and the process of schools' performance evaluation. • Provide opportunity of presenting the accomplished task in class. Judge the task and provide feed-back. 	<ul style="list-style-type: none"> • Search reading materials in websites, study the searched materials, discuss on the concept, characteristics, uses, and the process of test standardization. • Construct test items for measuring intelligence, personality, and aptitude (at list five items for each psychological construct). Analyze the test items used by National Examination Board and National Assessment of Students Achievement. • Analyze the performance assessment tools developed by ERO. • Review a book or book chapter or a journal article or write an article based on the accomplished tasks. 	<ul style="list-style-type: none"> • The students will review one published standardized test and write a summary report.

4. Evaluation Criteria: (internal 40%, external 60%)

Students' learning will be evaluated based on 40 % internal assessment and 60% external examination. Evaluation criteria will be as explained below.

Criteria	Marks	Remarks
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Internal assessment: The internal 40% will focus on formative as well as summative nature which includes following activities with respective weightages.

Attendance	5	70-80=3, 81-90=4, 91-100=5
Class	5	Student will participate in dramatic informal pair presentation to the

participation		assigned content related topic.
Assignment I (Individual task)	10	<p>Any one task from the following:</p> <p>Task 1: The students will review a book, book chapter, research report, thesis, journal article, commissions' report, education rules and regulation, evaluation guidelines, CAS, flash reports and so on. The review work will be based on any content area of the whole course. They will prepare a review report in about 500 words.</p> <p>Task 2: The students will prepare a reflective report including all the processes of test validation based on the content area of unit III.</p> <p>Task 3: The students will review one published standardized test (e. g. IELTS, TOEFL, GRE, SAT, GMAT, test developed by NASA and other standardized tests) and write a summary report. This task will be based on the content area of unit V.</p>
Assignment II (Group task)	10	<p>Any one task from the following:</p> <p>Task 1: Students will collectively construct an achievement test (including all types of test items) specifying the detail activities and steps studied in Unit 4.</p> <p>Task 2: Construct and administer an objective test (including multiple-choice, true-false, fill in the blanks items) in a group of students and compute and interpret reliability.</p>
Assignment III (Individual test)	10	Written examination: Objective and subjective items
External evaluation:		The external 60% written test covers the following nature of test items.
External Examination	60	<p>Group A: Objective items (10×1) = 10</p> <p>Group B: Short answer type items (6×5) = 30 (including two or questions)</p> <p>Group C: Essay type items (10×2) = 20 (including one or question)</p>

5. Recommended Books and References

- Ebel, R. L. & Frisbie, D. A. (1991). *Essentials of Educational Measurement* (5th ed.). New Delhi: Prentice-Hall of India Pvt. Ltd. (For unit II, III, IV)
- Education Review Office (latest report). *Report on National Assessment of Student Achievement*. Government of Nepal, Ministry of education. Bhaktapur, Education Review Office.(For unit I)
- Freeman, Frank S. (1965). *Psychological testing*. New Delhi: Oxford and IBH Publishing Company (For unit V)
- Gregory, Robert J. (2005). *Psychological testing: History, principles, and applications*. Delhi: Pearson Education Pte. Ltd. (For unit II, III, IV and V)
- Gronlund, Norman E. (1995). *How to write and use instructional objectives*. U.S. A.: Prentice Hall Inc. (For unit IV)
- Kaplan, Robert M. & Saccuzzo, Dennis, P. (2009). *Principles, applications, and issues*. India: Cengage Learning India Private Limited. (For unit II, III, and V)
- Kubiszyn, Tom, & Borich, Gary. (2004). *Educational testing and measurement: Classroom application and practice*. India: John Wiley & Sons, Inc. (For unit I, IV and V).
- Linn, Robert L. & Miller, M. David. (2008), *Measurement and Assessment in Teaching*. India: Pearson Education. (For unit I, II, III, IV)
- Sharma, R. A. (2004). *Essentials of Measurement in Education and Psychology*. Meerut: R Lall Book Depot. (For unit V)
- Singh, Arun Kumar. (1997). *Tests, measurements, and research methods in behavioural sciences*. India: Bharati Bhawan Publishers and Distributors. (For unit I, II, III, IV).

Curriculum and Evaluation

ED. CE. 535 : Classroom Instruction

Nature of course: Theoretical

Course No.: Ed. CE. 535

Level: M. Ed.

Semester: Third

Credit Hours: 3

Teaching Hours: 48

1. Course Description

This is a course for master level students specializing in Curriculum and Evaluation. The aim of this course is to equip students with methods and tools so that they can apply these methods and tools in their classroom. In addition, this course intends to enable students to identify issues and problems in classroom teaching learning practices in the Nepali schools, develop methods and instruments to try them out and draw implications from the research for effective teaching.

2. General Objectives

The general objectives of this course are as follows:

- To familiarize the students with major learning theories.
- To clarify the classroom practices as emphasized in learning theories.
- To enable the students to identify important problems related to classroom research
- To acquaint the students with methods and tools of research for classroom teaching.
- To develop skills of the students to employ research methods such as experimental, survey, ethnography, and action research
- To use tools such as interview, observation, checklist, rating scale to undertake research on classroom teaching and learning.
- To enable the students to identify and research various components of classroom teaching and learning in divergent and convergent ways.
- To provide hands-on research practices to the students on classroom teaching learning.
- To facilitate the students to try out classroom teaching and learning methods and materials and report their effectiveness and usability.
- To enable the students to make a classroom teaching learning improvement plan based on the evidence derived from the practice.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Briefly recap the major learning theories. • Discuss different emphases of learning theories with respect to classroom practices. • Analyze similarities and differences in the classroom teaching learning practices with respect to learning theories. • Discuss research implication of different genre of classroom methods. 	<p>Unit 1: Review of learning theories and their implication (3 hrs.)</p> <p>1.1 Behaviorism, cognitivism, and constructivism</p> <p>1.2 Learning theories and classroom teaching learning practices</p> <p>1.3 Recap of teaching learning methods and research implication.</p>
<ul style="list-style-type: none"> • Describe research methods suitable for the pedagogical research • Select suitable research method(s) to study the identified problem in the classroom. • Select suitable research tool(s) for the study context. 	<p>Unit 2: Methods and Tools of Teaching Learning research (11 hrs.)</p> <p>2.1 Research Methods for classroom instruction</p> <p>2.1.1 Experimental</p> <p>2.1.2 Survey</p>

<ul style="list-style-type: none"> Develop research tools for the study. 	<p>2.1.3 Ethnography 2.1.4 Action research: individual and participatory</p> <p>2.2 Research Tools</p> <p>2.2.1 Interview 2.2.2 Observation 2.2.3 Focus group discussion 2.2.4 Checklist and rating scale</p>
<ul style="list-style-type: none"> Identify different aspects of classroom research. Make link of methods and tools for the purpose of researching classroom related compartments. Plan and assess the effectiveness of different aspects of classroom (both physical and organizational). 	<p>Unit 3: Classroom as a research entity (9 hrs)</p> <p>3.1 Physical environment 3.2 Classroom size 3.3 Classroom display 3.4 Seating arrangement 3.5 Class organization (Subject, Grade, Multi Grade, Multi Grade Multi Level)</p>
<ul style="list-style-type: none"> Prepare a research plan to study different aspects of teacher and students' classroom activities. Assess the effectiveness of a lesson plan in student's learning. Experiment teacher instructional plans in the classroom situation. Study effectiveness of different types of instructional plans. Study and describe learners characteristic in sample of classes. Prepare research plan to study different aspects of students' classroom participation. Experiment different modalities of student's motivation and report their impact in student's learning. 	<p>Unit 4: Researching teacher and student activities (13 hrs.)</p> <p>4.1 Teacher</p> <p>4.1.1 Recap of qualities of good teachers; lesson planning; teaching methods</p> <p>4.1.2 Teacher activities in teaching learning (classroom managements, questioning, feedback, student motivation/encouragement/ treatment/punishment, student support, time on task)</p> <p>4.1.3 Teacher instructional planning (Individualized/Personalized, group, whole class)</p> <p>4.2 Student</p> <p>4.2.1 Learners characteristics – diversity, learning style, learning needs</p> <p>4.2.2 Classroom participation</p> <p>4.2.3 Motivation</p>
<ul style="list-style-type: none"> Recap different types of teaching methods and materials. Prepare lesson plans (in relevant subject/unit) using different instructional methods and materials and analyze their effectiveness. Undertake action research to select appropriate method(s) and material(s) for specific lesson/content area. Observe classroom teaching learning activities and analyze instructional methods 	<p>Unit 5: Effectiveness of teaching methods and materials (12 hrs.)</p> <p>5.1 Recap of teaching methods/strategies (teacher centered, learner centered, cooperative/collaborative, critical thinking)</p> <p>5.2 Recap of different types of instructional materials and their importance in classroom teaching learning</p>

and materials used in the classroom.	5.3 Researching effectiveness of different types of teaching methods and instructional materials
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Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

4.1 General Techniques

- Direct Instruction followed by discussion/sharing/interaction
- Link content to the research studies and research practices (international and national context)
- Suggest relevant research studies (CERID, CEHRD, UNESCO, UNICEF, and others) for students to study and learn about research approach, tools and analysis
- Encourage students to identify problem and design research study with respect to classroom teaching learning
- Plan and carry out research study in the classroom context
- Presentation and discussion of the research findings in the classroom.

4.3 Specific Instructional Techniques

Unit	Activities and Instructional Techniques	Internal Assignment (20 marks for practice related works, 10 marks written test and 10 marks – attendance and participation)
Unit 1	<ul style="list-style-type: none"> • Review by teachers – emphasize on drawing upon theories to link with the research study to be undertaken by the student in the practical in the assignment. 	Practice oriented <ul style="list-style-type: none"> • Develop concept note: Student choose classroom teaching learning method of his/her interest (B. Ed.) and prepare concept note linking with learning theory. • Select and elaborate method and tools appropriate to the concept note developed • Class presentation and discussion
Unit 2	<ul style="list-style-type: none"> • This unit is mostly covered through direct instruction by the teacher to explain research methods and tool. Explanation by the teacher should be followed up by the discussion on use of them in the classroom research – context, appropriateness, approach, etc, 	
Unit 3	<ul style="list-style-type: none"> • Bring up existing classroom environment in the Nepali context through experience sharing approach and lead to classroom interaction to discuss on the classroom entity pertinent for the research work. Good if class can come up with list of varied classroom entities from which they can pick up important and feasible ones for their research practice. 	Practice oriented <ul style="list-style-type: none"> • Collect photographs of different schools, grades and situation (teacher ensure Variety when assigning task) • Classroom discussion and prepare individual report on impact of the

		situation in teaching learning, improvement to be made.
Unit 4	<ul style="list-style-type: none"> • Prepare list of research studies (CERID, CEHRD, and others) and assign one report to one student to study, prepare summary (context, problem, objectives, methodology, finding and suggestions) and present in the class • Link with the research report review to recap aspects related to teacher and student • Encourage students to identify research areas/themes related to teacher and student classroom activities; prepare study plan and carry out study • Sharing and discussion of the research in the classroom. 	Practice oriented <ul style="list-style-type: none"> • Develop classroom teaching learning observation tool • Observe at least 3 classes • Analyze data/information and prepare brief report on teacher and student activities • Classroom presentation and discussion
Unit 5	<ul style="list-style-type: none"> • Encourage students to recap about classroom methods and instructional materials they have covered in the previous levels • Discussion on existing classroom practices, sharing from research report study • Designing classroom research 	Practice oriented <ul style="list-style-type: none"> • Collect and review studies on Nepali classrooms (at least 3) • Identify problems and issues in the classroom teaching learning (include own experience and observation) • Design a study for classroom research (Context, Problem, Objective, Methodology, Tools)

5. Evaluation

5.1 Internal Evaluation 40%

Internal Evaluation will be conducted by course teacher based on following activities.

1) Attendance and participation	10 points
2) Practice related works	20 points
3) <u>Written test</u>	10 points
Total	40 points

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of semester.

1) Objective type question (Multiple choice 10x1)	10 points
2) Short answer questions (6 questions x 5 points)(including two or questions)	30 points
3) <u>Long answer questions (2 questions x 10 points) (including one or questions)</u>	20 points
Total	60 points

6. Recommended Books and References

- Andrews, R. (2005). *Research Questions*. Continuum-Viva Research Methods. New Delhi: Viva Books Pvt. Ltd.
- Borich, G. D. (2012). *Effective Teaching Methods – Research Based Practice (seventh edition)*. New Delhi: Pearson.
- Carey Philpott and Val Poultney. (2018). *Evidence-Based Teaching for Enquiring Teachers*. Critical Publishing.
- Clive Millar. (2016). *A Practical Guide to Classroom Research*. Critical Publishing.
- Costello, P. J. M. (2005). *Action Research*. Continuum-Viva Research Methods. New Delhi: Viva Books Pvt. Ltd.
- Crawford, A; Saul, EW; Mathews, S; and Makinster, J. (2005). *Teaching and Learning Strategies for the Thinking Classroom*. New York: Open Society Institute. (Also available in Nepali translation).
- Dana, NF and Yebdol-Silva, D. (2003). *The Reflective Educator's Guide to Classroom Research*. California: CORWIN Press Inc.
- Gillham, B. (2005). *Case Study Research Methods*. Continuum-Viva Research Methods. New Delhi: Viva Books Pvt. Ltd.
- Locke, T. (2005). *Critical Discourse Analysis*. Continuum-Viva Research Methods. New Delhi: Viva Books Pvt. Ltd.
- Sapna Cheryan, Sianna A. Ziegler¹, Victoria C. Plaut, and Andrew N. Meltzoff (2014). *Designing Classrooms to Maximize Student Achievement*. Sage: Policy Insights from the Behavioral and Brain Sciences 2014, Vol. 1(1) 4–12.
file:///E:/foe/pedagogical%20reserch/14Cheryan_etal_Meltzoff_Designing%20Classrooms.pdf
- UNESCO. (2014). *Teaching and Learning: Achieving quality for all*. EFA Global Monitoring Report. Paris: UNESCO. <https://en.unesco.org/gem-report/report/2014/teaching-and-learning-achieving-quality-all>
- UNESCO. (2015). *Transforming Teaching and learning in Asia and The Pacific: Case Studies from Seven Countries*. Paris: UNESCO. (<http://www.unesco.org/open-access/terms-use-ccbysa-en>).
- UNICEF. (2003). *Happy Learning! A Guide to Best Practices for Achieving the Potential of Children*. Kathmandu: UNICEF.
- Westwood, Peter. (2008). *What teachers need to know about Teaching Methods*. Victoria: Acer Press.
- World Bank Group. (2015). *Conducting Classroom Observations: Analyzing Classroom Dynamics and Instructional Time (User Guide)*. World Bank: SIEF. <http://documents.worldbank.org/curated/en/790221467997639302/pdf/97904-WP-Box391498B-PUBLIC-WB-Stallings-web.pdf>
- Wragg, E. C. (1999). *An Introduction to Classroom Observation (second edition)*. London and New York: Routledge-Flamer.
- CERID - Research reports on classroom teaching learning
- CEHRD - Research reports on classroom teaching learning

ED. CE. 537: Project on Program and Curriculum Evaluation

Course No.: ED. CE. 537

Level: M. Ed.

Semester: Third

Nature of course: Practical

Credit Hours: 3 cr. hrs.

Teaching Hours: 48 hours

1. Course Description

This is a specialization course designed for the students specializing in Curriculum and Evaluation in M. Ed. level. This is a practical course which aims to enable students to apply their theoretical knowledge in evaluation of educational programs and curriculum of different levels. Through this course, students will be able to identify problems and issues related to educational programs and curriculum, design methodology and tools, collect data, analyze those data and prepare a report of the project work.

2. General Objectives

The general objectives of this course are as follows:

- Explore important and pressing issues and problems relevant to program and/or curricular phenomena.
- Prepare study proposal in the selected problem or issue.
- Conduct field study.
- Analyze and interpret collected information.
- Prepare a project report.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Identify an appropriate educational evaluation topic relevant to local situation 	Unit 1: Selection of evaluation topic (6) <ol style="list-style-type: none"> 1. Overview of program evaluation and curriculum evaluation 2. Review of related studies/ literature 3. Discussion on areas relevant to program and/or curriculum evaluation 4. Identification of an appropriate evaluation topic
<ul style="list-style-type: none"> • Conceptualize evaluation study • Prepare the evaluation proposal 	Unit 2: Developing proposal for evaluation (12) <ol style="list-style-type: none"> 1. Writing evaluation questions and objectives 2. Selection of evaluation site as per the intent of the topic 3. Identification of information types and data sources 4. Selection of tools 5. Discussion on APA style and format of reporting 6. Prepare the proposal for evaluation study
<ul style="list-style-type: none"> • Prepare and finalize evaluation tools for the study. • Prepare for field work 	Unit 3: Preparation for field work (2) <ol style="list-style-type: none"> 1. Preparation of tools for data collection 2. Trying out, improvement and finalization

	of the tools 3. Determination of date and time for the field work
<ul style="list-style-type: none"> Collect data relevant for evaluation through formal and informal ways from the field Prepare a field report 	Unit 4: Field work (6) 1. Selection of the informants 2. Collection of data 3. Ethical considerations in field work 4. Preparation and submitting field report to the supervisor
<ul style="list-style-type: none"> Organize and analyze quantitative and qualitative information Discuss the results Prepare final draft report 	Unit 5: Analyzing data and report writing (18) 1. Analyzing quantitative data 2. Analyzing qualitative data 3. Preparation of the preliminary draft report 4. Preparation of the final draft
<ul style="list-style-type: none"> Present and defend the draft report Prepare final report after incorporating the suggestions of the seminar 	Unit 6: Dissemination of project work (4) 1. Preparation of seminar 2. Presentation of the completed project work in the seminar 3. Preparation of a final report incorporating important suggestions of the seminar.

4. Instructional Techniques

Two types of instructional techniques—general instructional techniques and specific instructional techniques -- will be used to encourage students for learning activities. A brief introduction of these techniques is given below respectively.

4.1 General Instructional Techniques

The students will carry out the practical work individually throughout the course from first, second, third, fourth, fifth and sixth units. The subject teacher or supervisor will provide necessary working guidance relevant to each unit/phase for the project work in the course.

4.2 Specific Instructional Techniques

Unit wise specific activities will be carried out to develop practical knowledge and skills for the project work in the course. Some important specific instructional activities to develop required competencies in the students for this practical course are given as follows.

Units Specific Instructional Techniques

- | | |
|--------|---|
| Unit 1 | <ul style="list-style-type: none"> The teacher will assist the students for ways of finding related literature and encourage them to draw ideas from these literature Presentation and discussion on curricular related issues in the classroom Helping students identify study area and study topic |
|--------|---|

- Unit 2
- The teacher will present a model proposal to the students
 - Helping the students prepare study proposal.
 - Presentation of the proposal in the class by the students
 - Helping the students to finalize study proposal.
- Units 3 and 4
- The teacher will provide instruction to students before they set out for field work.
 - Providing continuous suggestions to problems as arise during field work.
 - Helping the students verify the field data for report writing
 - Obtain continuous progress report.
- Unit 5
- Provide necessary suggestions for data analysis and interpretation.
 - Discuss approaches to report writing
 - Helping the students prepare and present the draft report
 - Make necessary comments and help them to prepare final draft.
- Unit 6
- Provide support in conducting dissemination seminar.
 - Help defend the study report during seminar/dissemination

5. Evaluation Scheme

The performance of the students in this practical course will be evaluated based on 100 point marks such as the internal evaluation, i.e., 40 point marks and external evaluation, i.e., 60 point marks.

5.1 Internal Evaluation (40%)

Internal Evaluation will be conducted by course teacher based on following activities.

- | | |
|---|-----------|
| • First assignment on conceptualizing the topic | 10 points |
| • Second assignment on review of literature | 10 points |
| • Third assignment on designing methodology and tools | 10 points |
| • Fourth assignment on field work | 10 points |

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Total	40 points nmj
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5.2 External Evaluation (60%)

Examination Division, office of the Dean, Faculty of Education will send external examiner for conducting final viva. The external examiner will evaluate the report and viva on the basis of following criteria:

1) Quality of the report	30 points
• Introduction	6
• Methodology	6
• Organization and analysis of data	6
• Clarity of findings and recommendations	6
• Overall quality of the report	6
2) Viva	30 points
• Summary presentation	10
• Understanding of the contents	10
• Defending to queries and commitment on corrections	10
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Total	60 points

6. References

- Anderson, L. W. and Postlethwaite, T. N. (2007). *Program evaluation: Large-scale and small-scale studies*. Paris: The International Institute for Educational Planning.
- Hussain, A., Dogar, A. H., Azeem, M. and Shakoor, A. (October 2011). Evaluation of curriculum development process. *International Journal of Humanities and Social Science*. Vol. 1(14).
- Lewy, A. (Ed.). (1977). *Handbook of curriculum evaluation*. Paris: IIEP/UNESCO.
- Sanders, J. R. and Sullins, C. D. (2006). *Evaluating school programs: An educator's guide*, 3rd edition. California: Corwin press.
- Wolf, P., Hill, A. and Evers, F. (2006). *Handbook for curriculum assessment*. Canada: University of Guelph.
- Woods, J. D. (1988). Curriculum evaluation models: Practical applications for teachers. *Australian Journal of Teacher Education*. Vol. 13 (1). Retrieved from: <http://ro.ecu.edu.au/ajte/vol13/iss1/1>

ED. CE. 538: Application of Statistics in Education

Course No.: ED. CE. 538

Level: M. Ed.

Semester: Third

Nature of course: Theoretical

Credit Hours: 3 cr. hrs.

Teaching Hours: 48 hours

1. Course description

This course is designed for the M. Ed. students who specialize in Curriculum and Evaluation. This course aims to help the students to carry on statistical analysis for decision-making and prediction in the field of evaluation and research. Furthermore, this course aims to enable the students to apply the statistical methods in the field of education.

2. General objectives

The general objectives of this course are as follows:

- To explain the need of research in the field of education.
- To compute and explain parameters for identifying the nature of a population
- To describe the importance of the concept of probability
- To mention the differences between correlation and regression analysis
- To apply normal curve to interpret the nature of a population
- To identify the extent of relationship between two or more interrelated variables
- To make inferences based on nature of two or more sets of data.

3. Specific objectives and contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Define statistics • Identify the use of statistics in education and research • Point out the scope of statistics • Identify the type and scale of statistical data • Point out the limitation of statistics 	<p>Unit I: Introduction to statistics (4)</p> <ul style="list-style-type: none"> 1.1 Concept of statistics 1.2 Function of statistics 1.3 Use of statistics in education and research 1.4 Scope of statistics 1.5 Data types and scales in statistics 1.6 Limitations of statistics
<ul style="list-style-type: none"> • Give an overview of central tendency, dispersion, and relative position. • Compute mean, median and mode • Apply mean, median and mode in assessing students' performance and in comparing the performance of students. • Compute and apply range, inter quartile range, standard deviation 	<p>Unit II: Measures of Central Tendency, Dispersion and Relative Position (12)</p> <ul style="list-style-type: none"> 2.1 Overview of central tendency <ul style="list-style-type: none"> 2.1.1 Concept 2.1.2 Computation of arithmetic mean, median and mode 2.1.3 Application of central tendency in assessing students' performance 2.1.4 Use and limitations of mean, mode, and median 2.2 Dispersion <ul style="list-style-type: none"> 2.2.1 Concept

<p>and variance in assessing students' performance.</p> <ul style="list-style-type: none"> • State the use and limitations of different measures of dispersion • Compute and interpret percentile rank, percentile and standard score in assessing students' performance. 	<p>2.2.2 Computation of range, inter quartile range, standard deviation and variance</p> <p>2.2.3 Application of measures of dispersion in assessing students' performance</p> <p>2.2.4 Use and limitations of measures of dispersion.</p> <p>2.3 Measures of relative position</p> <p>2.3.1 Concept</p> <p>2.3.2 Computation of percentile rank, percentile, stanine, standard score</p> <p>2.3.3 Application of measures of dispersion in assessing students' performance</p>
<ul style="list-style-type: none"> • Explain the nature of normal curve • Describe the importance of the concept of probability • Describe skewness and kurtosis as the qualities of a normal curve • Apply normal curve to interpret a set of data 	<p>Unit III: The normal probability curve (7)</p> <p>3.1 The nature of normal probability curve</p> <p>3.2 Properties of normal probability curve distribution</p> <p>3.3 Importance of the concept of probability</p> <p>3.4 Measuring divergence from normality</p> <p>3.3.1 Skewness and its application</p> <p>3.3.2 Kurtosis and its application</p> <p>3.5 Applications of normal curve in interpreting the data</p>
<ul style="list-style-type: none"> • Clarify the concept of correlation • Describe the use of scatter diagram • Compute different types of correlation. • Apply different types of correlation in education. 	<p>Unit IV: Measures of relationship (8)</p> <p>4.1 Concept of correlation as a measure of relationship</p> <p>4.2 Scatter diagram</p> <p>4.3 Pearson's product moment correlation (r)</p> <p>4.4 Spearman's ρ (rho): Non repeated and repeated ranks</p>
<ul style="list-style-type: none"> • Express the meaning of regression analysis • Mention the uses of regression analysis • Derive regression equation in standard and raw score form. • Mention the differences between correlation and regression analysis 	<p>Unit V: Regression (10)</p> <p>5.1 Concept of regression analysis</p> <p>5.2 Uses of regression analysis</p> <p>5.3 The regression equation: standard score form and raw score form</p> <p>5.4 Differences between correlation and regression analysis</p>
<ul style="list-style-type: none"> • Point out the differences between parametric and non parametric inferential statistics • Use t, Z and F test for making inferences about parametric sets of data • Apply Chi-square test for making 	<p>Unit VI: Inferential statistics (8)</p> <p>6.1 Concept of inferential statistics: parametric and non-parametric tests</p> <p>6.2 Parametric tests: t, Z and F test (One way and two-way ANOVA)</p> <p>6.3 Non-parametric tests: Chi square (χ^2) tests</p>

inferences about non-parametric sets of data	
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Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

4.1 General Techniques

- Lecture & PPT presentation followed by discussion and QA
- Computation and data analysis manually and using software (MS Excel and/or SPSS)
- Home assignment and self-study
- Project work

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Division of the students into 3 groups and let each group study and discussion on (a) Functions of statistics, (b) Use of statistics in education and research, (c) Scope of statistics and (d) Limitations of statistics • Preparation of 2/3-page report on their topic • Presentation of the report in the classroom followed by discussion
II	<ul style="list-style-type: none"> • Computation of mean, median and mode manually and/or using software (Excel and/or SPSS) • Computation of range, inter quartile range, standard deviation and variance manually and/or using software (Excel and/or SPSS) • Computation of percentile rank, percentile and standard score manually and/or using software (Excel and/or SPSS) • Application of above statistical tools in interpreting test scores.
III	<ul style="list-style-type: none"> • Sketching the normal curve and its properties based on some data • Explore the importance of the concept of probability using the properties of normal curve
IV	<ul style="list-style-type: none"> • Computation of different types of correlations manually and using software (Excel and/or SPSS)
V	<ul style="list-style-type: none"> • Computation of regression equation, and differences between correlation and regression analysis manually and using software (Excel and/or SPSS)
VI	<ul style="list-style-type: none"> • Computation of t, Z and F test for making inferences about parametric sets of data manually and using software (Excel and/or SPSS) • Computation of Chi-square test for making inferences about non-parametric sets of data manually and using software (Excel and/or SPSS)

5. Evaluation

5.1 Internal Evaluation 40%

Internal Evaluation will be conducted by course teacher based on following activities.

- | | |
|--|-----------|
| 4) Attendance and participation | 10 points |
| 5) First assignment/book review/written assignment/quizzes | 10 points |

6) Second assignment/paper writing and or presentation	10 points
7) <u>Third assessment/ written test (1 or two)</u>	<u>10 points</u>
Total	40 points

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of semester.

1) Objective type question (Multiple choice 10x1)	10 points
2) Short answer questions (6 questions x 5 points) (including two OR questions)	30 points
3) <u>Long answer questions (2 questions x 10 points) (including one OR questions)</u>	<u>20 points</u>
<u>Total</u>	<u>60 points</u>

Recommended books

Garrett, H. E. and Woodworth, R. S. (1965). *Statistics in psychology and education*, (3rd ed.). Bombay: Bikas, Feller and Simons.

Gupta, S.C. and Kapoor, V.K. (2020). *Fundamental of mathematical statistics* (12th ed.). New Delhi: Sultan Chand and Sons.

Mangal, S.K. (2010). *Statistics in psychology and education* (2nd ed.). New Delhi: Tata McGraw Hill.

Minium E.W., and King, B.M. (2002). *Statistical reasoning in psychology and education* (4th ed.). New York, NY: John Willey and Sons.

Tanner, D. (2012). *Using statistics to make educational decisions*. Thousand Oaks, CA: Sage.

ED. CE. 539: Emerging Perspectives in Curriculum

Course No.: ED. CE.539

Level: M. Ed.

Semester: Third

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48 hours

1. Course Description

This course is designed for students specializing in Curriculum and Evaluation to develop wider perspectives in designing, implementing and assessing curriculum both at the school and university levels. The course's main focus will be on looking at a curriculum from the perspectives of children's rights, fostering peace, sustainable development, and inclusivity. Additionally, this course intends to develop students' collaborative, analytical, critical thinking and problem-solving skills so they could examine the curriculum from several angles.

2. General Objectives

The general objectives of the course are as follows :

- To familiarize students with different perspectives that they need to consider while making decision about a curriculum.
- To help students apply child-right perspective while planning, implementing, and assessing a curriculum.
- To acquaint students with the implications of peace perspective in developing school to university level curriculum.
- To enable students in integrating sustainable development agendas in education through devised curriculum.
- To inculcate knowledge and skills that learners need to differentiate the general education curriculum to ensure all children's inclusion in education.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> ● Develop a multi-perspective approach to analyze a curriculum ● Justify the needs of examining curricula from various perspectives. ● Analyze the influence of different perspectives on making decisions about a curriculum from school to university level. ● Draw implications of assessing curriculum from diverse perspectives in reference to Nepal. 	<p>Unit 1: Review of Curriculum from Different Perspectives (8)</p> <p>1.1 Concept of analyzing curriculum from different perspectives</p> <p>1.2 Needs of examining curriculum from different perspectives</p> <p>1.3 Influence of diverse perspectives on making curricular decisions</p> <p>1.4 Implications of assessing curriculum from diverse perspectives in Nepal</p>

<ul style="list-style-type: none"> ● Introduce the right-based perspective in education. ● Explain the emergence of right based perspective in curriculum development. ● Analyze child-rights povisioned in national and international conventions to draw their educational implications. ● Identify existing practices of addressing child-rights through curriculum. ● Draw implications of child-right perspectives in curriculum development process in Nepal. 	<p>Unit 2: Right-based Perspective in Education (9)</p> <p>2.1 Introduction to right-based perspective</p> <p>2.2 Emergence of child-right perspective in school-level curriculum development</p> <p>2.3 Child rights apparoaches endorsed in national and nnternational conventions (Focus on curriculum, instruction, evaluation, and physical infrastructure of school)</p> <ul style="list-style-type: none"> ● The Children's Act-2018 ● The Constitution of Nepal-2015 ● The United Nations Conventions on the Rights of the Child-1989 <p>2.4 Existing practices of addressing the child rights through curriculum</p> <p>2.5 Implications of child rights Perspective in curriculum development with reference to Nepal</p>
<ul style="list-style-type: none"> ● Introduce the peace education and its importance. ● Draw educational implications from non-violent movement led by Martin Luther King. ● Draw educational implications from non-violent movement led by Mahantma Gandhi. ● Explain and illustrate different approaches to peace development. ● Create a culture of peace in educational institutions to provide better services to learners. ● Explore the implications of peace building perspective in curriculum development in Nepalese context. 	<p>Unit 3: Peace and Non Violence Perspective in Education (10)</p> <p>3.1 Concept of peace education</p> <p>3.1.1 Martin Luther King's non-violent movement</p> <p>3.1.2 Gandhi's nonviolence movement</p> <p>3.2 Peace Paradigms : Five approaches to peace</p> <p>3.2.1 Peace through coercive power</p> <p>3.2.2 Peace through power of law</p> <p>3.2.3 Peace through willpower</p> <p>3.2.4 Peace through power of communication</p> <p>3.2.5 Peace through power of love</p> <p>3.3 Development of a culture of peace in education</p> <p>3.4. Implications of peace building perspective in curriculum development in nepal</p>
<ul style="list-style-type: none"> ● State the concept of sustainable development. ● Explain sustainable development goals in 	<p>Unit 4: Sustainable Development Perspective in Curriculum Development (9)</p> <p>4.1 Concept of sustainable development</p>

<p>brief.</p> <ul style="list-style-type: none"> ● Clarify the emergence of sustainable development perspective in education. ● Integrate sustainable development agendas into curriculum. ● Draw implications of sustainable development perspective while designing curriculum from school to university level in Nepal. 	<p>4.2 Overview of sustainable development goals</p> <p>4.3 Emergence of sustainable development perspective in education</p> <p>4.4 Integration of sustainable development agendas into curriculum</p> <p>4.5 Implications of sustainable development perspective in curriculum development with reference to Nepal</p>
<ul style="list-style-type: none"> ● Conceptualize the meaning of curriculum differentiation. ● Describe the rationales of curriculum differentiation. ● Illustrate different domains of curriculum differentiation in short. ● Use different approaches to curriculum differentiation to make the general education curriculum for all learners. ● Draw implications of curriculum differentiation in Nepalese context. 	<p>Unit 5 : Inclusion Perspective in Curriculum (12)</p> <p>5.1 Inclusion in education through curriculum differentiation</p> <p>5.1.1 Introduction to inclusive education</p> <p>5.1.2 Concept of curriculum differentiation</p> <p>5.2 Rationales of curriculum differentiation</p> <p>5.3 Domains of curriculum differentiation</p> <p>5.3.1 Content</p> <p>5.3.2 Process</p> <p>5.3.3 Product</p> <p>5.3.4 Environment</p> <p>5.4 Approaches to curriculum differentiation</p> <p>5.4.1 Curriculum accommodation</p> <p>5.4.2 Curriculum modification</p> <p>5.4.3 Curriculum enrichment</p> <p>5.4.4 Curriculum acceleration</p> <p>5.4.5 Curriculum compacting</p> <p>5.5 Implications of curriculum differentiation for improving teaching learning in Nepal</p>

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

To build the desired knowledge and abilities on the topics covered in this course, various teaching strategies will be used. To give the learners a set of learning experiences for ingraining the information and abilities intended, two types of instructional techniques will be used primarily: general instructional techniques and specific instructional techniques. Below are the quick descriptions of each of these techniques:

4.1 General Instructional Techniques

Generally lecture method, question-answer method, problem solving method, individual study, cooperative instructional techniques, brain-storming, and discussion methods will be used to clarify the prescribed curricular contents to the students. However, in order to ensure that all students

actively participate in the teaching-learning process, focus will be given to student-oriented, collaborative, and project-oriented instructional strategies. To increase the relevance of the curriculum's contents to Nepal, it will be taught in relation to Nepalese situations. After finishing each subject, the students will be given a variety of assignments, either individually or in groups, to provide them plenty of chances to practice the desired behavior. While putting this course into practice in actual classroom settings, the instructor will act more as a facilitator than as a transmitter of knowledge.

4.2 Specific Instructional Techniques

Unit-specific activities will be carried out to get deeper understanding on emerging perspectives in curriculum. The students will have plenty of opportunities to practice the desired behaviors through targeted teaching strategies. These teaching methods will be useful for ensuring that students actively participate in the classroom in order to build a clear understanding of the necessary contents. While carrying out these educational activities in the classroom, the teacher will act as a facilitator. The table below lists the main instructional strategies that will be used in the implementation of this course:

Units	Specific Instructional Techniques
II	<p>We have talked about a variety of laws and agreements that guarantee children's rights in Nepal's education and other fields. However, various studies have found that despite the Nepali Constitution's provisions, educational institutions have not been acting in a way that fosters and supports the implementation of children's rights in actual classroom settings. In this regard, students will visit a nearby school and note some actions taken to institutionalize children's rights there on the one hand, and some impediments that make it unlikely that children's rights will be upheld in the institution for a long time on the other. Then students will create a concise report that includes the following elements:</p> <ul style="list-style-type: none"> • Title page • Background of the study • Introduction to sample school • Activities enacted to optimize child rights • Activities that jeopardize the possibility of practicing child rights • Conclusion
IV	<p>To attain sustainable development goals, almost every country in the world has changed its educational policies and curricula from elementary school to university level. Since Nepal is not an exception, these objectives have also been taken into account when developing educational policies and curricula for schools through universities in Nepal. In this context, students will choose any curriculum from the school level and examine: How the curriculum has included the sustainable development goals. What should be done to improve its responsiveness to the achievement of sustainable development goals? The students will write the answers to these questions in no more than 5 pages.</p>
	<p>Nepal is a multicultural, multiethnic, multi-linguistic, and socio-economically diversified country. Such diversity is also reflected in almost all classes from the school to university level. Due to their varied origins, students enrolling in a particular grade may have various experiences, learning needs, learning styles, and learnability from one another. Without customizing a curriculum for each of these learners in accordance</p>

V	with their unique learning requirements and abilities, none of them may benefit from it. In this regard, students will consider any academic session you've had, from elementary school through college. Write down briefly any multiple means of representation, multiple means of engagement, and multiple means of expression that a specific subject teacher can use to ensure that his or her students have equitable access to the curriculum.
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Note: The teacher can assign these activities as a part of the internal assignment and then s/he can determine a grade as per the quality of the product.

5. Evaluation

Both internal and external assessments will be applied to evaluate the knowledge and skills of students that is supposed to be learnt under this course. Internal assessment will be used as a part of both formative and summative evaluation. Instructional activities of the classroom will be improved by considering the result of each internal assessment and the score obtained in the assessment will be used to determine the grade of each student in the end of each semester. Brief description of proposed internal and external assignments is given below:

5.1 Internal Assessment

Subject teacher will conduct different type of internal assessments based on the contents taught on the behalf of department/college. Teacher will use attendance, classroom participation, individual work, group work, presentation, written exam, etc. as the major criteria of internal assignment. Thus, the teacher will evaluate each student internally by using following criteria:

Criteria of Assessment	Points
• Attendance	5
• Classroom participation	5
• First assignment	10
• Second assignment	10
• Third assignment	10
Total	40

5.2 Final Examination

Final exam will be carried out from Dean's Office, Faculty of Education, TU, at the end of each semester. Both subjective and objective questions will be asked in the exam to assess the mastery of knowledge on the offered course. The structure of the final exam will be as follows:

Types of Questions	Number of Questions	Marks
• Objective questions	10 multiple choice items	10x1=10
• Short answer-type questions	6 questions (including two OR questions)	6x5 = 30
• Long answer-type questions	2 questions (including one OR questions)	2x10 = 20

Total	18 questions	60 points
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6. References

- Ball, J. (2011). *Enhancing learning of children from diverse language backgrounds: Mother tongue-based bilingual or multilingual education in early childhood and early primary school years*. Paris: UNESCO (Unit 1 and 2)
- Lafayette, B., & Johnson, K. L. (2013) *Peace and freedom*. Kentucky: University Press of Kentucky. (Unit 3)
- Mastropieri, M. A., & Scruggs, T. E. (2018). *The inclusive classroom: Strategies for effective differentiated instruction* (6th edition). USA: Pearson Education, Inc. (Unit-5)
- Ministry of Education, Science, and Technology (2019). *Sustainable development goal 4: Education 2030, Nepal national framework*. Kathmandu, Author. (Unit-4)
- Nepal Law Commission (2015). *The constitution of Nepal*. Retrieved from https://www.mohp.gov.np/downloads/Constitution%20of%20Nepal%202072_full_english.pdf (Unit 2)
- Nepal Law Commission (2018). *The act relating to children-2018*. Kathmandu: Author. (Unit-2)
- Soubbotina, T. P. (2004). *Beyond economic growth development: an introduction to sustainable development* (2nd edition). Washington, D.C.: World Bank. (Unit 4)
- Thousand, J. S., Villa, R. A., & Nevin, A. I. (2007). *Differentiating instruction: Collaborative planning and teaching for universally designed learning*. California: Corwin Press, Sage Publications Company. (Unit-5)
- Tomasevski , K. (2004). *Manual on right based education*. Bangkok: UNESCO. (Unit 2)
- Tomlinson, C. A. (2013). *Assessment and student success in a differentiated classroom*. USA: Association for Supervision and Curriculum Development. (Unit-5)
- Tomlinson, C. A., & Murphy, M. (2015). *Leading for differentiation: Growing teachers who grow kids*. USA: Association for Supervision and Curriculum Development. (Unit-5)
- UNESCO (2012). *Education for sustainable development*. Paris: Author. (Unit 4)
- UNICEF (2007). *A human rights-based approach to education for all: a framework for the realization of children's right to education and rights within education*. NewYork: Author. (Unit 1 and 2)

English Education

Eng. Ed. 535: English Language Teaching (ELT) Pedagogy and Materials

Course No. : Eng. Ed.535

Nature of the course: Theoretical

Credit hours: 3

Level: M. Ed.

Teaching hours 48

Semester: Third

1. Course Description

This course aims at exposing students with the evolving theories, trends and practices of English language teaching (ELT). In this course, students will explore the context, methodology and techniques of teaching English language skills. Additionally, the students will also be engaged in critically assessing the materials and innovations in ELT. The course consists of five units. The first unit familiarizes the students with the broader and specific contexts of English language teaching while the second unit presents the overview of the ELT methodology. The third unit deals with the techniques and activities of teaching English language aspects and skills. The fourth unit is about the planning and assessment in ELT while the fifth unit provides the innovations and criticalities in language education and its pedagogy.

2. General Objectives

The general objectives of this course are as follows:

- To familiarize the students with the basics of English language teaching in the macro and micro contexts.
- To expose the students to the wide array of ELT methodology that includes the approaches, methods, techniques and strategies.
- To enable the students to teach the language aspects and skills effectively.
- To help the students plan the course and design classroom tests.
- To engage the students into the innovative practices of language teaching and get them aware on the critical perspectives in English language teaching.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the contexts of language teaching • Present the overview of the history of language teaching • Trace out the recent trends in English language teaching • Discuss the framework for teaching and learning • Implement the principles of learner autonomy in class • Identify the spectrum of communicative classroom • Explore a wide range of 	<p>Unit I: Basics of English Language Teaching Context (10)</p> <ul style="list-style-type: none"> 1.1 Language Teaching (What, Why, and How) 1.2 History of language teaching 1.3 Paradigm Shifts in Language teaching 1.4 Teaching by principles 1.5 A framework for teaching and learning <ul style="list-style-type: none"> 1.5.1 Learners and learning, classroom and contexts 1.5.2 The communicative classroom 1.5.3 Learner autonomy and learner training 1.5.4 Learning Strategies vs. Communication Strategies 1.5.5 Types of learning strategies (Cognitive,

strategies to develop learner autonomy	Meta-cognitive, Socio-effective, and Communicative)
<ul style="list-style-type: none"> • Reflect upon the traditions and transitions in language teaching approaches • Present the overview of the recent approaches, methods/ activities of language teaching • Contextualize communicative and task-based language teaching • Use the various techniques of language teaching in class 	<p>Unit II: Methodology of English Language Teaching (14)</p> <p>1.1 Tradition and transitions in language teaching approaches (A critique on the methodological shifts in ELT)</p> <p>1.2 An Overview of the Recent Methods and Practices in ELT (introduction, principles/assumptions, syllabes, classroom procedures, teachers and learners roles and implications)</p> <p>1.2.1 Multiple intelligences</p> <p>1.2.2 Neuro-linguistics programming</p> <p>1.2.3 The lexical approach</p> <p>1.2.4 Co-operative learning</p> <p>1.2.5 Collaborative learning</p> <p>1.2.6 Differentiated instruction</p> <p>1.2.7 Content and language integrated learning (CLIL)</p> <p>1.2.8 Communicative language teaching</p> <p>1.2.9 Task-based language teaching (TBLT)</p> <p>1.2.10 Total physical response</p> <p>1.2.11 The post method pedagogy</p> <p>1.2.12 Project-based language teaching</p> <p>2.6 Techniques and Activities in ELT</p> <p>2.6.1 Teacher centered techniques/activities (lecture, explanation, illustration, and demonstration)</p> <p>2.6.2 Learner centered techniques/activities (individual, pair, and group work, role play, dramatization, story -telling, picture description and simulation)</p> <p>2.6.2 Blended and virtual learning</p>
<ul style="list-style-type: none"> • Categorize the aspects and skills of language from pedagogic perspectives • Teach vocabulary, grammar, language functions and literary contents. • Design activities for teaching receptive and productive skills 	<p>Unit III: Teaching Language Aspects and Skills (8)</p> <p>3.1 Teaching vocabulary</p> <p>3.2 Teaching grammar</p> <p>3.3 Teaching language functions</p> <p>3.4 Teaching literature</p> <p>3.3 Teaching listening skills</p> <p>3.4 Teaching speaking skills</p> <p>3.5 Teaching reading skills</p> <p>3.6 Teaching writing skills</p>
<ul style="list-style-type: none"> • Design syllabi following the steps • Plan courses and lessons • Manage classroom interaction in class • Maintain discipline while teaching English • Develop tests and administer 	<p>Unit IV: Materials and Classroom management (8)</p> <p>4.1 The syllabus (introduction, steps, types and considerations)</p> <p>4.2 Course plans and lesson plans</p> <p>4.3 Materials (construction and use)</p> <p>4.4 Teaching content (linguistic, cultural and literary)</p> <p>4.5 Classroom interaction (patterns of classroom interaction, questioning, group work, individualization,</p>

them in class • Identify learner differences and address them accordingly	pair work, the selection of appropriate activation techniques) 4.6 Classroom discipline (strategies and implications) 4.7 Learner differences (introduction and variables to bring differences among learners) 4.2 Classroom assessment (introduction, tools and forms, and functions)
• Integrate technologies in ELT • Describe second language education from multiple perspectives • Discuss identity issue in second language education • Critically review the teacher’s standards in ELT	Unit V: Innovations and Criticalities in ELT (6) 5.1 Technology and ELT (use and roles of ICTs, i.e., multimedia, mobile phones, internet, interactive white board, online dictionaries and other resources, and power-point presentation in ELT) 5.2 Online resources for English language learning and teaching 5.3. Re-conceptualizations in second language education 5.4 Re-conceptualizing teacher standards: Authentic, critical and creative 5.5 Student and teacher engagement in ELT 5.6 Challenging identities in ELT

Note: The figures in the parenthesis indicate approximate teaching hours for respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Explanation and illustration
- Phonetic practice of phonological data sets
- Self-study and small-scale research
- Group and pair works
- Discovery and inquiry
- Read, discuss, write and share (RDWS)

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
One	Mini-project (Review of the articles, participate in the discussion, relate their experience)
Two	Mini-project (articles and book chapters review followed by classroom presentation)
Three	Preparation of the materials to teach language aspects and skills

Four	Instructor-guided lesson plan preparation, peer teaching and seminar papers
Five	Project: The students critically review the pedagogical practices in Nepal

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by the instructor based on the following activities:

- Attendance 5 marks
- Participation in learning activities 5 mark
- First assignment/mid-term exam 10 marks
- Second assignment/assessment 10 marks
- Third assignment/assessment 10 marks

Note: The course teacher can develop multiple activities for assignments, depending on the nature of the course/topic and students' interests. Such activities may include book review, article review, term paper on specific issue/topic, or unit test\quiz, project work, case study, survey/field study, individual/group report writing, literature review and a research article based on primary and/or secondary data.

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

1. Objective questions (multiple choice questions) (10 x 1) = 10 marks
2. Short answer questions (6 questions with 2 OR questions) (6x 5) = 30 marks
3. Long answer questions (2 questions with 1 OR question (2 x 10) = 20 marks

6. Recommended Books and References

6.1 Recommended Books and Materials

Baker, T., & Clark, J. (2010). Cooperative learning – a double-edged sword: A cooperative learning model for use with diverse student groups. *Intercultural Education*, 21, 257–268.

(Unit II)

Boraie, D. (2013). Current Trends in Teaching and Learning EFC / ESL. *International Journal on Studies in English Language and Literature (IJSELL)*, 12. 44-54. **(Unit I)**

Brown, H. D. (2001). *Teaching by principles*. London. Longman. **(Unit I)**

Brown, H. D., & Lee, H. (2015). *Teaching by principles: An interactive approach to language*

Down, B. and Smyth, J (2012 eds.). *Reconceptualizing teacher standards: Authentic, critical and creative*. *Critical Voices in Teacher Education, Explorations*. (Accessed : 2009,Fab18).

(Unit IV)

Harmer, J. (2007). *The practice of English language teaching*. London. Pearson Education Limited.

(Unit I, II, III, IV)

Haven, CT: Yale University Press. **(Unit II)**

Hedge, T. (2008). *Teaching and learning in the language classroom*. Oxford. Oxford University Press. **(Unit I, IV)**

Johnson, A. P. (2008). *Teaching reading and writing : a guidebook for tutoring and remediating students*. New York: Rowman & Littlefield Publishers, Inc. **(Unit III)**

Kumaravadivelu, B. (2003). *Beyond methods: Macrostrategies for language teaching*. New

Larsen-Freeman, D., & Anderson, M. (2011). *Techniques and principles in language teaching*.

Long, M. H. and Doughty, C. J. (2009). *Handbook of English language teaching*. Oxford. Wiley-Blackwell. **(Unit I)**

New York, NY: Cambridge University Press. **(Unit II)**

Nobel, A., Ingleton, C., Double, L. & Rogers, T. (2002), “*Leap into ... Collaborative Learning*“, Available: http://www.adelaide.edu.au/ltdu/leap/leapinto/collab_learning.pdf

Norton, B. and Toohey, K. (Eds.) (2004). *Critical pedagogies and language learning*. Cambridge. Cambridge University Press. **(Unit V)**

of Educational Purpose 22, DOI 10.1007/978-94-007-3974-1 5.

Oliver, M. Coyle, D. Connolly, T. (2015). Student and teacher engagement in ELT. *Intercultural Education*, 21, 257–268 **(Unit V)**

Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. New York, NY: Newbury House. **(Unit I)**

Oxford: Oxford University Press. **(Unit II)**

Panitz, T. (2000), “*Benefits of Collaborative Learning*”, Available: *pedagogy* (4th ed.). New York, NY: Pearson. **(Unit I)**

Richards, J.C. & Rodgers, T.S. (2009). *Approaches and methods in language teaching*. Cambridge: CUP. **(Unit II)**

Richards, J.C., & Rodgers, T. S. (2014). *Approaches and methods in language teaching* (3rd ed.).

Sarroub, L. K. and Quadros, S. (2015). Critical Pedagogy in Classroom Discourse. *Faculty Publications: Department of Teaching, Learning and Teacher Education*. 156, 33-52.

Ur, P. (2013). *A course in English language teaching*. Cambridge. Cambridge University Press. **(Unit III, IV)**

Waters, A. (2009). Managing innovation in English language education. *Language Teaching*, 42:4, 421–458. **(Unit V)**

www.teachingenglish.org.uk (Unit V)

www.learningenglish.org.uk (Unit V)

www.americanenglish.state.gov (Unit V)

6.2. References

- Beckett, G. H. & Miller, P. C. (2006). Project-based second and foreign language education. Connecticut: Information Age Publishing.
- Brown, H. D. (1994). Principles of language learning and teaching. London: Prentice Hall.
- Chambers, A. & Bax, S. (2006). Making CALL work: Towards normalisation. *System*, 34, 465–479.
- Cook, V. (2008). Second language learning and language teaching. London: Arnold.
- Davies, P. & Pearse, E. (2008). Success in English teaching. Oxford: OUP.
- Ellis, R. (2003). Task-based language learning and teaching. Oxford: OUP.
- Kumaravadivelu, B. (2001). Toward a post-method pedagogy. *TESOL Quarterly*, 35/4, 537-560.
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- Nunan, D. (1998). Language teaching methodology. New York: Prentice Hall.
- Nunan, D. (Eds.). (2003). Practical English language teaching. New York: McGraw Hill.
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- Richards, J. C. & Renandya, W. A. (2003). Methodology in language teaching. Cambridge. CUP.
- Scrivener, J. (2005). Learning teaching. Oxford: Heinemann.
- Underwood, M. (1989). Teaching listening. London: Longman.
- Woodward, T. (2001). Planning lessons and courses. Cambridge: CUP.

Eng. Ed. 536: Readings in Literary Genres

Course No.: Eng. Ed. 536

Level: M.Ed.

Semester: Third

Nature of the course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Description

Readings in Literary Genres is an advanced literature-based course which builds on Readings in English Part-I (Eng. Ed 528) of the second semester. This course follows the genre-based classification of literature and its analysis and interpretation from different critical perspectives. Units from first to sixth comprise long fictions, short fictions, poetry, prose and dramas, whereas the last unit entails major schools of literary criticisms. The course offers some carefully selected literary writings in English that enrich students with critical insights in varieties of the English language, its cultures, and that motivate them in creative writing.

2. General Objectives

The general objectives of the course are as follows:

- To orient the students to English literary world through the sampled literary masterpieces
- To develop the students' skills in reading and interpreting literary texts
- To develop their skills in responding to the texts through the lenses of literary criticisms and express their observations in writing.
- To help them produce their own creative writings in different genres.
- To help them apply critical and creative insights from literature in English language teaching.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Read and summarize the novels • Trace the western history of knowledge • Distinguish between fact and fiction in the literary work • Critically appreciate the novels in terms of their plots, themes, settings and characters. • Compare and contrast between techniques of different writers • Apply the relevant literary criticism to analyze the novels • Present their reflection on the novels through writing • Write reviews for the novels • Select extracts from the novels and develop teaching learning activities for classroom purpose 	Unit I: Readings in Long Fiction (12) <ul style="list-style-type: none"> 1.1 Sophie's World by Jostein Gaarder 1.2 2. The Sorrows of Young Werther by Johann Wolfgang von Goethe 1.3 3. To Kill a Mocking Bird by Harper Lee
<ul style="list-style-type: none"> • Read and summarize the story 	Unit II: Readings in Short Fiction (8)

<ul style="list-style-type: none"> Analyze the stories in terms of plot, theme, setting and characters Apply the relevant literary criticism to interpret the stories Write short stories drawing on their own experiences Select the stories or extracts and develop teaching learning activities for their students 	<p>2.1 My First Goose by Isaac Babel</p> <p>2.2 The Lottery in Babylon by Jorge Luis Borges</p> <p>2.3 Martha by Khalil Gibran</p> <p>2.4 The Lady in the Looking – Glass : A Reflection by Virginia Woolf</p> <p>2.5 The Feathered Orge by Italo Calvino</p> <p>2.6 Everything that Rises Must Converge by Flannery O’ Conner</p> <p>2.7 The Enemy by V. S. Naipaul</p> <p>2.8 Vanka by Anton Chekhov</p> <p>2.9 The Garden Party by Katherine Mansfield</p> <p>2.10 Lullaby by Leslie Marmon Silko</p> <p>2.11 Myself in India by Ruth Praver Jhabvala</p> <p>2.12 August , 2026 : There Will Come Soft Rains by Ray Bradbury</p> <p>2.13 Lost Forest by Johannes v. Jenson</p>
<ul style="list-style-type: none"> Read and summarize the poem Interpret the poems in terms of literary devices Apply relevant literary criticism to appreciate the poems Select the poems and develop teaching learning activities for classroom purpose. 	<p>Unit III: Readings in Poetry (6)</p> <p>3.1 The Garden of Love by William Blake</p> <p>3.2 Because I Could Not Stop for Death by Emily Dickinson</p> <p>3.3 Wandered Lonely as a Cloud by William Wordsworth</p> <p>3.4 The Second Coming by W.B. Yeats</p> <p>3.5 Landscape with the Fall of Icarus by William Carlos Williams</p> <p>3.6 An Introduction by Kamala Suraiyya</p> <p>3.7 The Fisherman Mourned by His Wife by Patrick Fernando</p> <p>3.8 Letter from Mama Dot by Fred D’Aguiar</p> <p>3.9 To Autumn by John Keats</p> <p>3.10 Sonnet No. 5 by Laxmi Prasad Devkota</p>
<ul style="list-style-type: none"> Read and summarize the dramas Analyze the drama from the perspective of performance Distinguish between readability and playability of the drama Analyze the dramas in terms of their key elements: dialogues, setting, characters, plots and themes. Apply the relevant literary criticism to analyze the dramas Produce their own drama drawing on their own experiences or based on the stories they have read 	<p>Unit IV: Readings in Drama (8)</p> <p>4.1 The Rising of the Moon by Lady Gregory</p> <p>4.2 The Cherry Orchard by Anton Chekhov</p> <p>4.3 The Glass Menagerie by Tennessee Williams</p> <p>4.4 The Homecoming by Harold Pinter</p>

<ul style="list-style-type: none"> • Summarize the interviews • Compare and contrast between different writers in terms of their views on creative writing and writing style • Develop interview questions and interview the Nepalese writers 	<p>Unit V: Face-to-Face with Writers at Work (4)</p> <p>5.1 Simone de Beauvior 5.2 Boris Pasternak 5.3 Haruki Murakami 5.4 V.S. Naipoul</p>
<ul style="list-style-type: none"> • Read and summarize the essays • Interpret the themes of the essays • Argue on the themes of the selected essays 	<p>Unit VI : Essays (4)</p> <p>6.1 What I Believe by E. M. Froster 6.2 My Philosophy of Life by Prof. Haldane 6.3 Why I Write by George Orwell 6.4 Of Marriage and Single Life by Francis Bacon</p>
<ul style="list-style-type: none"> • Summarize each literary criticism • Compare and contrast between the literary theories in terms of their views on language, creativity, society and culture, and reader-writer relation. • To apply the literary theories to critically appreciate the given literary texts. 	<p>Unit VII: Literary Criticisms and Applications (6)</p> <p>7.1 New Criticism 7.2 Russian Formalism and the Bakhtin School 7.3 Reader-oriented theories 7.4 Structuralist theories 7.5 Marxist theories 7.6 Feminist theories 7.7 Psychoanalysis approach 7.8 Postmodernism 7.9 .Deconstructionism 7.10 Postcolonial theory 7.11 Cultural criticism 7.12 Queer theories 7.13 Eco-criticism</p>

Note: The figures in the parenthesis indicate approximate teaching hours for respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Lecture and discussion
- Book Discussion Club (Single-title discussion, multi-titles discussion)

- Book Reading Club
- Online Clubs in Social Networks (e.g. Facebook Club, Yahoo Club, Blogs)
- Read, discuss, write and share (ReDWS)
- Demonstration
- Explanation and illustration
- Instructor-guided self-study

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	Project Work on Writers and Their Writings, Critical Appreciation, Book Review
II	Critical, Reflective and Creative Writing
III	Reflective Creative Writing
IV	Argumentation
V	Mini-survey and Document Analysis
VI	Argumentation
VII	Argumentation and analysis

5. Evaluation

2.1 Internal Evaluation 40%

Internal evaluation will be conducted by the instructor based on the following activities:

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|--|----------|
| • Attendance | 5 marks |
| • Participation in learning activities | 5 mark |
| • First assignment/mid-term exam | 10 marks |
| • Second assignment/assessment | 10 marks |
| • Third assignment/assessment | 10 marks |

Note: The course teacher can develop multiple activities for assignments, depending on the nature of the course/topic and students' interests. Such activities may include book review, article review, term paper on specific issue/topic, or unit test\quiz, project work, case study, survey/field study, individual/group report writing, literature review and a research article based on primary and/or secondary data.

5.2 External Evaluation (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

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| 4. Objective questions (multiple choice questions) (10 x 1) | = 10 marks |
| 5. Short answer questions (6 questions with 2 OR questions) (6x 5) | = 30 marks |
| 6. Long answer questions (2 questions with 1 OR question (2 x 10) | = 20 marks |

6. Recommended Books and References

Seldan, R. (1988). *The theory of criticism: A reader*. London: Longman

Tyson, L.(2011). *Using critical theory: How to read and write about literature*. Routledge.

Sophie's World by Jostein Gaarder

The Sorrows of Young Werther by Johann Wolfgang von Goethe

To Kill a Mocking Bird by Harper Lee

The Rising of the Moon by Lady Gregory

The Cherry Orchard by Anton Chekhov

The Glass Menagerie by Tennessee Williams

The Homecoming by Harold Pinter

Eng. Ed. 538: ELT Research and Testing

Nature of Course: Theoretical

Code No.: Eng. Ed.538

Semester: Third

Credit Hours: 3

Teaching Hour: 48

1. Course Description

This course is divided into two sections: Research in ELT and Applied linguistics and testing in ESL/EFL. The first section introduces the research in ELT and applied linguistics from multiple perspectives. The part also overviews different research designs in ELT and applied linguistics to enable the students to choose research designs for their practical purposes. The second section, language testing, aims at providing theoretical knowledge on language testing, and skills for developing and using the English language tests for assessing and reporting students' achievement and proficiency in the English language. The section describes language testing from different perspectives and relates it to other relevant disciplines. The part also discusses fundamental considerations in language testing along with the current trends followed by the different theoretical underpinnings, and critically assesses language tests in terms of different criteria.

2. General Course Objectives

The general objectives of the course are as follows:

- To acquaint the students with the basic concepts of different research designs.
- To enable the students to apply different research designs in the field of ELT.
- To enhance students' ability to understand the quality of language tests.
- To enable the students to design various types of tests to assess language skills and aspects.
- To expose them to the analysis, interpretation, and use of the information generated through testing with a view to enhancing their testing skills and abilities.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • To conceptualize aims, characteristics and dimensions of ELT and applied linguistics research • To overview the different research methods in applied linguistics • To enable to choose of research designs for their practical purposes • To enable students to examine research designs along with the potential challenges 	<p>Unit One: Research in ELT</p> <p>1.1 The Nature of Applied Linguistics Research</p> <p>1.1.1 Understanding applied linguistics research (What it is and what it is not)</p> <p>1.1.2 Purposes, cycles, scopes, and characteristics of applied linguistics research</p> <p>1.1.3 Dimensions of applied linguistics research</p> <p>1.1.4 Key research paradigms: A brief introduction</p> <p>1.1.5 Research literacy in applied linguistics</p> <p>1.1.6 Using research in the language classroom</p>

<ul style="list-style-type: none"> • To enable them use the research designs in the field of ELT and applied linguistics • To enable them to examine/identify key areas of research in ELT along with current thinking and typical research processes, strategies and techniques in the area of ELT research 	<p>1.1.7 A brief introduction to quantitative, qualitative, and mixed research methods in ELT and applied linguistics research</p> <p>1.1.8 Judging the usefulness of ELT research findings</p> <p>1.1.9 Ethics and applied linguistics research</p> <p>Unit Two: Choosing a Research Design in Language Teaching and Learning</p> <p>2.1 Research designs</p> <p>2.1.1 Action research (Underlying assumptions, processes & practical application in ELT and applied linguistics research)</p> <p>2.1.2 Teacher research (Introduction and practical applications)</p> <p>2.1.3 Survey research (Underlying assumptions, processes)</p> <p>2.1.5 Case study research (Underlying assumptions, processes & practical applications in ELT and applied linguistics research)</p> <p>2.1.6 Experimental research (Underlying assumptions, processes & Practical application in ELT and applied linguistics research)</p> <p>2.1.7 Narrative inquiry (Underlying assumptions, processes & Practical applications in ELT and applied linguistics research)</p> <p>2.1.8 Critical research in language education (Introduction, research topics, agenda, and research questions and methodologies)</p> <p>2.1.9 Auto-ethnographic research (Introduction)</p> <p>2.1.10 Ethnographic research (Underlying assumptions, processes & Practical application in ELT and applied linguistics research)</p> <p>2.1.11 Descriptive and exploratory research (concept and characteristics)</p> <p>2.1.12 Discourse analysis (Approaches and key areas of discourse analysis)</p> <p>2.1.13 Replication research (Introduction)</p> <p>2.1.14 Areas of ELT research</p>
<ul style="list-style-type: none"> • To develop a research proposal in any of the research designs of their choice. • To write and structure their theses well 	<p>2.2 Writing an ELT and Applied Linguistics Thesis</p> <p>2.2.1 Preparing a research proposal based on the format</p> <p>2.2.2 Tools for developing a research proposal</p> <ul style="list-style-type: none"> • Selecting the topic (introduction) • Deciding the background of the study

	<ul style="list-style-type: none"> • Stating the research problem • Specifying the objectives and purpose statements • Postulating research questions • Presenting the significance of the study • Delimiting the study • Identifying key terms and defining them <p>2.2.3 Doing a literature review and creating a research niche</p> <ul style="list-style-type: none"> • Literature reviews, theoretical reviews, and conceptual reviews • Reviewing and analyzing the theoretical and research-based Literature • Creating a research niche (what, how & types) • Overall road map for conducting literature <p>2.2.4 Identifying methods and procedures of the study</p> <ul style="list-style-type: none"> • Selecting the design and methods of the study • Identifying population, sample and sampling strategy • Deciding on study area/field • Selecting data collection tools and techniques • Linking data with the research methodology • Describing data collection procedures • Linking data with research methodology • Presenting data analysis and interpretation procedures <p>2.2.5 Mentioning process of data analysis and interpretation (A brief introduction to processes of both the QUAL & QUAN approaches with common headings)</p> <p>2.2.6 Citing and referencing the consulted sources on the basis of APA format</p> <p>2.2.7 Appending tools, lesson plans, graphs, and charts.</p> <p>2.2.8 Drafting, editing, proof-reading, rewriting and finalizing proposal</p> <p>2.3 Writing and structuring a thesis</p> <p>2.3.1 Abstract: Content and organization</p> <p>2.3.2 Introduction: Content and structure</p> <p>2.3.3 Methodology: Content and organization</p> <p>2.3.4 Discussion of results: Substance and structure</p>
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<ul style="list-style-type: none"> • To describe language testing and relate it to other relevant disciplines • To describe various tests and differentiate them from one another. • To discuss the recent issues in language testing. 	<p>2.3.5 Conclusions: Content and structure</p> <p>Unit Three: Basic conceptual considerations in language testing</p> <p>3.1 Language test: An introduction</p> <p>3.2 Tests, assessment, and teaching</p> <p>3.3 Some misconceptions about language testing</p> <p>3.4 Purposes of testing and assessment</p> <p>3.5 Types of language tests</p> <p>3.6 Contribution of language testing to SLA and SLA to Language testing</p> <p>3.7 Putting quality into practice/ effective Assessment</p> <p>3.8 Classroom testing and high-stakes testing</p> <p>3.9 Approaches to language testing: A historical perspective</p> <p>3.10 Relationship between language testing, linguistics, and applied linguistics</p> <p>3.11 Test design cycle</p> <p>3.12 Recent issues in language testing</p> <ul style="list-style-type: none"> • Alternative assessments • Large-scale testing • Assessment for learning • Test accommodations • Critical approach to language testing • Rights and responsibilities of test designers, writers and test takers • Use of computer technology in language testing • Ethics, standards, and professionalism
<ul style="list-style-type: none"> • To design and construct language tests. • To critically assess language tests in terms of different criteria. 	<p>Unit Four: Language test design and basic considerations</p> <p>4.1 Process for language test construction</p> <ul style="list-style-type: none"> • Developing test blueprint • Writing test items/tasks • Piloting tests • Improving tests <p>4.2 Validity</p> <p>4.3 Reliability</p> <p>4.5 Authenticity</p> <p>4.6 Interactiveness</p> <p>4.7 Practicality</p> <p>4.8 Test usefulness</p> <p>4.9 Test impact/washback</p>

<ul style="list-style-type: none"> • To design tests for testing different language aspects and skills. • To assess the existing practices of English language education testing. 	<p>Unit Five: Testing language aspects and skills</p> <p>5.1 Testing language aspects</p> <ul style="list-style-type: none"> • Vocabulary • Grammar <p>5.2 Testing language skills</p> <ul style="list-style-type: none"> • Testing listening • Testing speaking • Testing reading • Testing writing • Testing pragmatic/discourse competence <p>5.3 Administering language tests</p> <ul style="list-style-type: none"> • Test environment • Materials and equipment • Human resources • Training test administration personnel • Logistics <p>5.4 Scoring and reporting language test scores</p> <p>5.4.1 Marking scheme/rubrics</p> <p>5.4.2 Scorer training</p> <p>5.4.3 Scoring objective tests</p> <p>5.4.4 Scoring subjective tests</p> <ul style="list-style-type: none"> • Holistic scoring • Analytical scoring <p>5.4.4 Analyzing and reporting language test scores</p>
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4. Instructional Approach

4.1 General Techniques

- Lecture and discussion
- Reading, discussing, writing, and sharing
- Demonstration

	<ul style="list-style-type: none"> • Students' group discussion and presentation of one or two articles of each design in terms of objectives, design, methodology and findings
Unit Two	<ul style="list-style-type: none"> • Students write research proposals on the basis of teachers' instruction • Students conduct a mini-research and write a research article utilizing the data they collected. • Group discussion and classroom presentation, reflective writing
Unit Three	<p>Self-study, instructor-guided-reading, discussion, comparison and presentation (Different articles are prescribed for each of these sub-units, and teaching should be based on them.)</p>

Unit Four	Individual/pair/ group work: Sample Texts and Presentation of findings, Project work: The students will apply varieties of texts as practical activities (Different articles are prescribed for each of these subunits, and teaching should be based on them)
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- Explanation and illustration
- Self-study

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
Unit One	<ul style="list-style-type: none"> • Reading, discussion and reflective writing • Teacher's presentation of the review of one article of each design in terms of objectives, design, methodology and findings.

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance	4 Points
2. Participation in learning activities	6 points
3. First assignment/midterm exam	10 points
4. Second assignment/assessment (1 or two)	10 points
5. Second assignment/assessment (1 or two)	10 points
Total	40 points

5.2 External Evaluation (Final Examination) 60%

Examination Section, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester.

1	Objectives type questions (Multiple Choice 10×1)	10 points
2	Short answer questions (6×5) (Two OR questions)	30 points
3	Long answer questions (2×10) (One OR question)	20 points
4	Total	60 points

6. Sample Assignments

Assignment 1: Preparing a research proposal using any of the designs they studied.

Assignment 3: Constructing test items/tasks for testing language aspects and skills.

Assignment 4: Evaluating the existing English language education tests administered at different levels of Nepalese education.

7. Prescribed Articles/Book

ELT Research

- American Psychological Association. (2020). *Publication manual of the American Psychological Association (7th ed.)*. American Psychological Association.
- Baltaci, H.S., & Demir, K. (2012). Pre-service classroom teachers' emotional intelligence and anger expression styles. *Educational sciences: Theory and Practice*, 12(4), 2422-2428.
- Blakeslee, A., & Fleischer, C. (2007). *Becoming writing research*. Lawrence Erlbaum Associates, Publishers.
- Brown, A. (2012). Ethics in language testing and assessment. In C. Coombe, P. Davidson., B. O'Sullivan, & S. Stoyanoff, (Eds.), *The Cambridge guide to second language assessment* (pp. 113-121). Cambridge University Press.
- Brown, J. D., & Rodgers, T. (2010). *Doing second language research*. Oxford University Press.
- Bruke, B.M. (2013). Experiential professional development: A model for meaningful and long-lasting change in classrooms. *Journal of experiential education*, 36 (3), 247-263.
- Burns, A. (1999). *Collaborative action research for English language teachers*. Cambridge University Press.
- Burns, A. (2010). *Doing action research in English language teaching: A guide for practitioners*.
Routledge.
- Casey, K. (1996). The new narrative research in education. *Review of Research in Education*, 21, 211–253. Chang, H. (2008). *Autoethnography as method*. Left Coast Press.
- Choi, Jin-Sook (2013) Language ideology as an intervening process in language shift: The case of bilingual education in Guatemala. *Asian Journal of Latin American studies*, 26(3), 55-73.
- Clandinin, D. J., & Rosiek, (2006). Mapping a landscape of narrative inquiry: Borderland spaces and tensions. In D. J. Clandinin (Ed.), *Handbook of narrative inquiry: Mapping a methodology* (pp. 35– 75). Sage.
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- Connelly, F.M., & Clandinin, D.J. (2000). *Narrative inquiry: Experience and story in qualitative research*.
Jossey-Bass.
- Creswell, J.W. (2016). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Pearson.
- Dornei, Z. (2007). *Research methods in applied linguistics*. Oxford University Press.
- Elana Shohamy, E., Or, L. G., & May, S. (Eds.). (2017). *Language Testing and Assessment (Encyclopedia of Language and Education)*. Springer International Publishing.
- Ellis, C. (2009). *Revision: Autoethnographic reflections on life and work*. Left Coast Press.
- Gay, L.R., Mills, G.E., & Airasian, P.W. (2017). *Educational Research: Competencies for analysis and application*. Pearson Education limited.
- Hammond, M., & Wellington, J. (2013). *Research methods: The key concepts*. Routledge.
- Creswell, J.W. (2016). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. Pearson.
- Hatch, E, & Lazaraton, H. (1982). *Research design and statistics for applied linguistics*. Newbury House. Heigham, J., & Croker, R. A. (2009). *Qualitative Research in Applied Linguistics*. Palgrave Macmillan.

- Henning, D. (1993). Foreign-language teaching in the Baltic Republics in the past and present. *Padagogik und Schule in Ost und West*, (1), 27-33.
- Jackson, J. (2004). Language and cultural immersion: An ethnographic case study. *Regional Language Centre Journal*, 35(3), 261-279.
- Krashen, S., & Scarcella, R. (1980). *Research in second language acquisition*. Newbury House. Kumar, R. (2019). *Research methodology. A step-by-step guide for beginners*. Sage. Legg, R. (2009). Using music to accelerate language learning: An experimental study. *Research in education*, 82 (1), 1-12.
- Lei, L. & Huang, C (2012). Learning English through musicals: A case study of social economically disadvantaged aboriginal students in eastern Taiwan. *International journal of humanities and arts computing*, 6(1-2), 204-210.
- Lin, A.M. (1999). Doing English lessons in the reproduction or transformation of social worlds? *TESOL quarterly*, 33 (3), 393-412.
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- Mackey, A, & Gass, S.M. (2012). *Research methods in second language acquisition*. Blackwell Publishing Ltd.
- Mackey, A, & Gass, S.M. (2022). *Second language research: Methodology and design*. Routledge. Mackey, S.L. (2006). *Researching second language classrooms*. Lawrence Erlbaum Associates.
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- McEwan, H., & Egan, K. (1995). *Narrative in teaching, learning, and research*. Teachers College Press. McKinley, J. & Rose, H. (2020). *The Routledge handbook of research methods in applied linguistics*. Routledge.
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- Pandey, G. P. (2020). Becoming an English teacher: Voices from Nepal. *International Journal of Language and Literary Studies*, 2(3), 108-118. <https://doi.org/10.36892/ijlls.v2i3.377>
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- Riazi, A. M. (2016). *The Routledge encyclopedia of research methods in applied linguistics*. Routledge. Schwandt, T. A. (2007). *The Sage dictionary of qualitative inquiry*. Thousand Oaks, CA: Sage Publications. Seliger, H. W., & Shohamy, E. (1999). *Second language research methods*. Oxford University Press.
- Skwire, S.E., & Skwire, D. (2005). *Writing with a thesis*. Thomson and Wardsworth.
- Stephenson, L., & Harold, B. (2015). Narrative inquiry. In J D. Brown & C. Coombe (Eds.), *The Cambridge guide to research language teaching and learning* (pp.155-163). Cambridge University Press.
- Terrell, S. R. (2016). *Writing a proposal for your dissertation*. The Guilford Press. Wallace, M. (2000). *Action research for language teachers*. Cambridge University Press.
- Wong, C. (2012). A case study of college-level second language teachers' perceptions and implementations of communicative language teaching. *The professional educator*, 36 (2).

Yaguchi, M. (2010). The historical development of the phrase there's: An analysis of the Oxford English dictionary data. *English studies*, 91 (2), 203-224.

Language Testing

Abu-Alhija, F. N. (2007). Large-scale testing: Benefits and pitfalls. *Studies in Educational Evaluation*, 33(1), 50–68.
<https://doi.org/10.1016/j.stueduc.2007.01.005>

Alderson, J. C., Clapham, C., & Wall, D. (1995). *Language test construction and evaluation*. Cambridge University Press.

Bachman, L. F. (2010). *Fundamental considerations in language testing*. Oxford University Press. Bachman, L. F., & Palmer, A. S. (2010). *Language assessment in practice*. Oxford University Press. Bachman, L.F., & Palmer, A.S. (1996). *Language testing in practice*. Oxford: Oxford University Press. Baker, D. (1992). *Language testing*. Edward Arnold.

Brown, A. (2012). Ethics in language testing and assessment. In C. Coombe, P. Davidson., B. O’Sullivan, & S. Stoyhoff, (Eds.), *The Cambridge guide to second language assessment* (pp.113-121). New York: Cambridge University Press.

Brown, H. D. (2004). *Language assessment: Principles and classroom practices*. Longman.

Castillo, J. & Rodríguez, A. (2012). Construction of a proper test - SlideShare
www.slideshare.net/ReijiNakashi/the-construction-of-a-test-3

Cheng, L., Watanabe, Y., & Curtis, A. (Eds.). (2004). *Washback in language testing: Research contexts and methods*. Lawrence Erlbaum Associates.

Cheng, L., Wu, Y. & Liu, X. (2015). Chinese university students’ perceptions of assessment tasks and classroom assessment environment. *Language Testing in Asia*, 5(13), 2-17.

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Davies, A (1977). The construction of language tests. In J. P. B. Allen & A. Davies (Eds.), *Testing and experimental methods* (pp. 38-104). Oxford University Press.

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- Shohamy, E. (2000). The relationship between language testing and second language acquisition revisited. *System*, 28, 541-553.
- Shohamy, E. (2017). Critical language testing. In E. Shohamy, L. G. Or & S. May (Eds.), *Language Testing and Assessment, Encyclopedia of Language and Education* (pp. 441-454). Springer International Publishing.
- Spolsky, B. (2017). History of language testing. In E. Shohamy, L. G. Or & S. May (Eds.), *Language Testing and Assessment, Encyclopedia of Language and Education* (pp. 375-384). Springer International Publishing.
- Stansfield, C. W. (1993). Ethics, standards, and professionalism in language testing. *Issues in Applied Linguistics*, 4(2), 189-206.
- Taylor, L. (2012). Accommodations in language testing. In C. Coombe, P. Davidson., B. O'Sullivan, & S. Stoyhoff (Eds.), *The Cambridge guide to second language assessment* (pp. 307-316). Cambridge University Press.
- Turner, C. E. (2012). Classroom assessment. In G. Fulcher & F. Davidson (Eds.). *The Routledge handbook of language testing* (pp. 65-78). Routledge.
- Weir, C.J. (1990). *Communicative language testing*. Prentice Hall.

Eng. Ed. 539: Dimensions of Teacher Development

Course No: Eng. Ed. 539

Level: M. Ed.

Semester: Third

Nature of the course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Description

Dimensions of Teacher Development is a course beyond methodology, and it covers the key concepts of English language teaching as a professional and various dynamics of teacher development. It addresses the fundamentals of teacher development such as beliefs, maxims, and identities. The course also discusses the second language teacher education and makes an attempt to empower the students to operationalize various teacher learning models and approaches. It also enables them to design and deliver training sessions. Thus, the course aims at producing professionally competent English language teachers and trainers.

2. General Objectives

The general objectives of this course are as follows:

- To make students familiar with the basic concepts of English teaching and teacher development;
- To acquaint them with the fundamentals of teacher development;
- To help the students link various learning theories with ELT teaching situations;
- To provide students with the concept and skill in using the various teacher learning models and teachers' roles;
- To enable the students design and deliver training sessions.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Present the basic concept of teaching profession, language teaching, and language teacher development • Discuss the characteristics and perspectives of teacher development • Explain the scope of teacher development • Analyze the teacher career cycle • Review the English teachers' development in Nepal 	<p>Unit I: Conceptualizing Teacher Development (8)</p> <p>1.1. Teaching as a profession 1.2. English language teaching and Teacher education: training and teacher development 1.3. Characteristics and perspectives of teacher development 1.4. Understanding teacher development: experience, expertise, and competence 1.5. Developing new English teachers: managing the transition into the profession 1.6. Teacher career cycle 1.7. Teacher induction Practical work: English teacher development in Nepal</p>
<ul style="list-style-type: none"> • Describe factors of teacher professional development • Explain teachers' beliefs, maxims, and identities • Present the types of teacher maxims and their implications in language teacher education 	<p>Unit II: Factors of Teacher Professional Development (6)</p> <p>2.1 Factors affecting teacher professional development 2.2 Motivating factors of teacher professional development 2.3 Teachers' beliefs: Sources of beliefs and beliefs</p>

<ul style="list-style-type: none"> • Overview of the concept and sources of teacher belief • Describe the soft skills as a professional development • Analyze the teacher identity formation process 	<p>about the English language, learning, teaching, programs and curriculum, and language teaching as a profession</p> <p>2.4 Teachers' maxims, their types, and implication to ELT</p> <p>2.5 Soft skills in the teacher education programme</p> <p>2.6 Reconstructing teacher identities after their initial teacher education</p>
<ul style="list-style-type: none"> • Describe the scope, and trends of second language teacher education • Define second language teacher professionalism, their standards • Describe teacher preparation and non-native English-speaking educators and trainer develop • Describe the use of technology in teacher development • Describe and use second language classroom research 	<p>Unit III: Second Language Teacher Education (10)</p> <p>3.1 Scope of second language teacher education</p> <p>3.2 Trends in second language teacher education</p> <p>3.3 Critical language teacher education</p> <p>3.4 Second language teacher professionalism</p> <p>3.5 Standards and second language teacher education</p> <p>3.6 Teacher preparation and non-native English-speaking educators</p> <p>3.7 Professional development for language teacher education</p> <p>3.8 Technology and second language teacher education</p> <p>3.9 Second language classroom research</p>
<ul style="list-style-type: none"> • Analyze the various models, approaches, and roles of teachers • Prepare portfolios collecting various practical works on journal writing, project work, action research, critical incidents analysis, feedback giving and receiving, etc. • Explain teachers' roles while applying teacher development models and approaches. 	<p>Unit IV: Teacher Development Models, Approaches, and Teacher's Roles (12)</p> <p>4.1 Teacher development models: Craft model, Applied Science model, Reflective model</p> <p>4.2 Teacher development strategies: Workshops, seminars, journal writing, teacher support group, cases and critical incidents analysis, action research, mentoring, classroom observation, supervision, portfolio collection, etc.</p> <p>4.3 Teachers' roles: Passive Technicians, transformative intellectuals and reflective practitioners</p>
<ul style="list-style-type: none"> • Design a framework for training • Work in groups for training • Explain the practical process of training session • Discuss and use the ways of feedback, assessment, and evaluation in teacher training • Provide feedback in training • Design and conduct trainings 	<p>Unit V: Trainer Development (12)</p> <p>5.1 A framework for training</p> <p>5.2 Working with groups in training</p> <p>5.3 Working with participants' experience</p> <p>5.4 New and shared experiences in training</p> <p>5.5 The awareness-raising process and its consequences</p> <p>5.6 Talk in training courses</p> <p>5.7 Creating meaning: New learning</p> <p>5.8 Planning for action</p> <p>5.9 Feedback, assessment, and evaluation in training</p> <p>5.10 Inside a training course</p> <p>Practical work: Designing and conducting the training sessions for teaching language skills, language systems</p>

	and enhancing professionalism
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Note: The figures in the parenthesis indicate approximate teaching hours for respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Explanation and illustration
- Self-study and small-scale research
- Group and pair works
- Discovery and inquiry
- Read, discuss, write and share

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
Unit One	Individual reflection and narrative writing
Unit Two	Pair and group discussion on teacher development issues, beliefs, etc.
Unit Three	Pair work and small group discussion on the review and analysis of the models and theories
Unit Four	Portfolio collection and individual assignment
Unit Five	Individual assignment on training session design

5. Evaluation

5.2 Internal Evaluation 40%

Internal evaluation will be conducted by the instructor based on the following activities:

- | | |
|--|----------|
| • Attendance | 5 marks |
| • Participation in learning activities | 5 mark |
| • First assignment/mid-term exam | 10 marks |
| • Second assignment/assessment | 10 marks |
| • Third assignment/assessment | 10 marks |

Note: The course teacher can develop multiple activities for assignments, depending on the nature of the course/topic and students' interests. Such activities may include a book review, article review, term paper on a

specific issue/topic, unit test/quiz, project work, case study, survey/field study, individual/group report writing, literature review, and research articles. **External Evaluation (Final Examination) 60%**

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester.

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|--|------------|
| 7. Objective questions (multiple choice questions) (10 x 1) | = 10 marks |
| 8. Short answer questions (6 questions with 2 OR questions) (6x 5) | = 30 marks |
| 9. Long answer questions (2 questions with 1 OR question) (2 x 10) | = 20 marks |

6. Recommended Books and References

6.1. Recommended Books and Materials

- Burns, A. & Richards, J.C. (Eds.) (2009). *The Cambridge guide to second language teacher education*. Cambridge University Press. (Unit 3)
- Day, C. (1999). *Developing teachers: The challenges of lifelong learning*. Falmer press. Gunpowder Square, London. (pp. 48-69) (Unit 1)
- Goodwyn, A. (1997). *Developing English teacher: The role of mentorship in a reflective profession*. McGraw-Hill Education (UK). (pp. 91-114) (Unit 1)
- Goodwyn, A., Manuel, J., Roberts, R., Scherff, L., Sawyer, W., Durrant, C., & Zancanella, D. (Eds.). (2022). *International Perspectives on English Teacher Development: From Initial Teacher Education to Highly Accomplished Professional*. Taylor & Francis. (pp. 294-306) (Unit 1)
- Head, K & Taylor, P. (1997). *Readings in teacher development*. Macmillan Education. (Unit 1, 2, 4)
- Hiver, P., Kim, T.Y., & Kim, Y. (2018). Language teacher motivation. In S. Mercer & A. Kostoulas (Eds.), *Language teacher psychology* (pp. 18–33). Bristol, England: Multilingual Matters. (Unit 2)
- Huberman, M.A. (1993). *The lives of teachers*. New York: Teachers College Press. Huberman (1993, pp. 3-12) (Unit 1)
- Kaya, M.H. & Dikilitas, K. (2019). Constructing, reconstructing and developing teacher identity in supportive contexts. *Asian EFL Journal*, 1 (21), 56-81. (Unit 2)
- Pachauri, D. & Yadav, A. (2014). Importance of soft skills in teacher education programme, *International journal of education research and technology*, Vol. 5, [1], retrieved from <http://soeagra.com/ijert/ijertmarch2014/5.pdf> (Unit 2)
- Richards, J. & Farrell, T.S.C. (2005). *Professional development for language teachers*. Cambridge: CUP. (Unit 1, 4)
- Richards, J. C., & Renandya, W. A. (Eds.). (2002). *Methodology in language teaching: An anthology of current practice*. Cambridge university press.. (pp. 388-392) (Unit 1)
- Richards, J.C. & Lockhart, C. (2005). *Reflective teaching in a second language classroom*. Cambridge: CUP. (Unit 2)
- Richards, J.C. (1996). Teachers' maxims in language teaching. *TESOL Quarterly*, 30 (2), 281-296. (Unit 2)

- Steyn, G. M. (2005). Exploring factors that influence the effective implementation of professional development programmes on invitational education. *Journal of Invitational Theory and Practice* (11), 7-34. (Unit 2)
- Tickle, L. (2001). Professional qualities and teacher induction. *Journal of In-Service Education*, 27(1), 51-64. (Unit 1)
- Wallace, M.J. (2001). *Training foreign language teachers: A reflective approach*. Cambridge University Press. UK. (Unit 4)
- Walsh, S. & Mann, S. (Eds.). (2019). *The Routledge handbook of English language teacher education*. New York: Routledge. (pp. 536-552) (Unit 2)
- Wright, T. & Bolitho, r. (2007). *Trainer development*. London: www.lulu.com. (Unit 5)

6.2. Reference Books and Materials

- Bayar, A. (2013). *Factors affecting teachers' participation in professional development activities in Turkey*. A PhD dissertation. Faculty of the Graduate School, University of Missouri.
- Browsers, R. et al. (ed) (1987). *Language teacher education: An integrated programme for ELT teacher training*. Modern English Publication in association with British Council.
- Darling-Hammond, Hyler, M.E. & Gardener, M. (2017). *Effective teacher professional development*. Palo Alto, CA. Learning Policy Institute.
- Day, C (2005). *A passion for teaching*. London/New York: Routledge Falmer.
- Diaz-Maggioli, G. (2004). *Teacher-centered professional development*. Alexandria: ASCD.
- Dikilitas, K., Smith, R. & Trotman, W. (2015). *Teacher-researchers in action*. IATEF, No 2-3
- Flores, M.A. & Day, C. (2006). Contexts which shape and reshape new teachers' identities: A multi-perspective study. *Teaching and Teacher Education*, (22), 219-232. (Unit 2)
- Ha, P.V. (2004). Classroom observation as a tool for professional growth. *Teacher's Edition*. 26-30.
- Hamza, M. (2012). *Developing training material guide*: Swedish Civil Contingencies Agency (MSB).
- Hudson, P. (2013). Mentoring as professional development: 'Growth for both' mentor and mentee. Professional Development in Education. Retrieved from <https://metprogram.com/wp-content/uploads/2015/09/>
- Hülya, İ. P. E. K., & Kanatlar, M. (2018). Factors affecting EFL teacher motivation. *Eğitimde Nitel Araştırmalar Dergisi*, 6(2), 25-41.
- Ipek, H. & Kanatlar, M. (2018). Factors affecting EFL teacher motivation. *Eğitimde Nitel Araştırmalar Dergisi – Journal of Qualitative Research in Education*, 6(2), 25 - 41 . DOI:10.14689/issn.2148 - 2624.1.6c2s2m
- Khan, I.A. & Khan, A. N. (2014). Factors affecting teacher development activities: A theoretical perspective. *Asian Journal of Multidisciplinary Studies*, 2(2), 84-90.
- Koki, S. (n.d.). The Role of Teacher Mentoring in Educational Reform. Pacific Resources for Education and Learning, pp. 1-6.
- Kumaravadivelu, B. (2003). *Beyond method: Macrostrategies for language teaching*. NewHaven, Co. Yale University Press. (pp. 7-17)

- Murphy, J.C., Warner, C. (Prepared by). Train-the-trainer manual: Mentoring adult learners. Chicago State University, Chicago.
- Ngang, T.K. et al. (2015). Soft skills in integration in teaching professional training: Novice teachers' perspectives. Retrieved from <https://core.ac.uk/download/pdf/82686046.pdf>
- Osamwonyi, E.F. (2016). In-Service Education of Teachers: Overview, Problems and the Way Forward. *Journal of education and practice*. Vol. 7, No. 26, pp. 83-87.
- Peace Corps (n.d.). *Teacher training: A reference manual*. Peace Corps of United States: Information Collection & Exchange [prepared for the Peace Corps by the Centre for International Education University of Massachusetts] (pp. 22-29)
- PILAC, (n.d.). *Project on the improvement of local administration in Cambodia: Manual on training evaluation*.
- Roberts, J. (1998). *Language teacher education*. London: Arnold.
- Tickle, L. (2000). *Teacher induction: The way ahead*. UK: Open University Press.
- Tsui, A.B.M. (2003). *Understanding expertise in teaching: Case studies of second language teachers*. Cambridge: CUP.
- Villegas-Reimers, E. (2003). *Teacher professional development: An international review of the literature*. Paris: UNESCO
- Wang, J.; Lin, E.; Spalding, E.; Odell, S.J. & Klecka, C.L. (2011). Understanding teacher education in an era of globalization. *Journal of teacher education* 62(2) pp. 115-120.
- Wedell, M. (ed) (2007). *Teacher education planning handbook*. British Council, 17 Kasturba Marg, New Delhi.
- William, M. & Burden, R.L. (1997). *Psychology for language teachers*. Cambridge CUP.
- Zhang, H., Dai, Y. & Wang, Y. (2020). Motivation and second/foreign language proficiency: The mediating role of foreign language enjoyment. *Sustainability*, 12, doi:10.3390/su12041302
- Yazen, B. & Landahl, K. (2020). *Language Teacher Identity in TESOL*. New York: Routledge.

Geography Education**Geo. Ed. 535: Teaching Geography****Course No: Geo. Ed. 535****Nature of course: Theoretical****Level: M. Ed.****Credit Hours: 3****Semester: Third****Teaching Hours: 38 hours****1. Course Description**

This course has been designed to provide theoretical and applied knowledge of teaching geography to the prospective teachers. It intends to familiarize them with methods, strategies, techniques, and skills essential for teaching geography education at a higher level. This course also includes practical aspects and 35 percent of the weightage has been given to practical work. Of the total teaching hours, 32 are allotted to the theoretical aspect whereas 32 are allotted to the practical aspect.

2. General Objectives

The general objectives of this course are to

- familiarize the students about the changing nature of geography education,
- enable the students to understand the necessary steps for developing a geography curriculum,
- enable the students to use textbooks and reference materials in geography teaching,
- acquaint the students about methods, approaches, and techniques of teaching geography and apply them in real teaching,
- enable the students to make plans for teaching geography by using various types of test items for evaluating geographical knowledge and skills, and
- make students able to analyze curriculum and pedagogical issues in geography education and prepare report.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Describe the nature, and scope of geography and geography education • Explain the aims and objectives of teaching geography • Assess the trends of geography and geography education • Elucidate the approaches to teaching-learning of geography education • Explain the historical development of geography 	<p>Unit I: Introduction to Geography Education (6)</p> <p>1.1 Nature and scope</p> <p>1.2 Aims & objectives of teaching geography</p> <p>1.3 Trends of geography and geography education</p> <p>1.4 Approaches to teaching-learning geography</p> <p>1.5 Geography education in Nepal</p>

education in Nepal	
<ul style="list-style-type: none"> • Discuss the importance of curriculum • Analyze the change and challenges of geography in the school curriculum • Explain the process of curriculum planning and course development • List out the importance of content knowledge and pedagogical content knowledge in curriculum design • Analyze the objectives and process models in curriculum planning and course development 	<p>Unit II Curriculum Development (4)</p> <p>2.1 Importance of curriculum</p> <p>2.2 Change and challenges of geography curriculum in the school</p> <p>2.3 Curriculum planning and course development</p> <p>2.4 Content knowledge and pedagogical content knowledge in curriculum design</p> <p>2.5 Models in curriculum planning and course development</p>
<ul style="list-style-type: none"> • Explain the importance of textbooks • Discuss the importance of reference materials in teaching geography • Review geography textbook 	<p>Unit III: Textbooks and Reference Materials (5)</p> <p>3.1 Textbook in geography teaching</p> <p>3.2 Reference materials in geography teaching</p> <p>3.3 Geography textbook review</p>
<ul style="list-style-type: none"> • Discuss the teaching style and strategies • Differentiate between teaching and learning geography • Explain the processes, merits and demerits of teacher-centered and student-centered teaching methods • Identify the appropriate methods and strategies for teaching physical, human, regional and local geography • Explain the importance of critical thinking in teaching geography • Describe various types of instructional aids in teaching geography • Discuss the pedagogical issues in geography education 	<p>Unit IV: Teaching Style and Strategies (9)</p> <p>4.1 Teaching methods, styles, and strategies</p> <p>4.2 Teaching and learning geography</p> <p>4.3 Teacher-centered and student-centered teaching methods.</p> <p>4.4 Teaching methods and strategies</p> <ul style="list-style-type: none"> • Physical and human • Regional and local geography <p>4.5 Critical thinking in teaching geography- concept, features, and importance</p> <p>4.6 Instructional aids in teaching geography</p> <p>4.7 Pedagogical issues</p> <ul style="list-style-type: none"> • Classroom management • Inclusion of diversity and multi-cultural classroom environment • Student assessment in the classroom • Fieldwork management • Use of Information Communication Technology (ICT)
<ul style="list-style-type: none"> • Discuss on operation calendar, work plan, unit plan and lesson plan • Explain the role of formative and summative evaluation 	<p>Unit V: Using Planning and Evaluation (8)</p> <p>5.1 Importance of planning</p> <ul style="list-style-type: none"> • Operation calendar

<ul style="list-style-type: none"> • Construct different types of test items to assess students' achievement • Prepare a specification chart • Develop checklist and rating scales • Analyze test score based on answer key and rubrics 	<ul style="list-style-type: none"> • Workplan • Unit plan • Lesson plan (ABC Model) 5.2 Formative and summative evaluation 5.3 Construction of test items <ul style="list-style-type: none"> • Subjective questions • Objective questions 5.4 Specification chart 5.5 Checklist and rating scales 5.6 Test score analysis
<ul style="list-style-type: none"> • Select appropriate taxonomy of objectives to develop school-level geography curriculum • Review assigned geography curricula and prepare a report • Review the assigned textbook and submit the report Prepare classroom teaching plans	Unit VI: Curriculum Analysis & Teaching (8) 6.1 Taxonomy of objectives 6.2 Review the curriculum <ul style="list-style-type: none"> • Secondary and university levels • Geography curricula of FOE and FHSS • Preparation of review report 6.3 Review of textbook and/reference book Micro-teaching and peer teaching plan
<ul style="list-style-type: none"> • Explore pedagogical issues related to geography education in Nepal • Develop skills of action research for new professionalism in geography education • Prepare a report based on anyone issue stated in unit 4.7 or action research 	Unit VII: Research on Pedagogical Issues in Geography Education (8) 7.1 Research on pedagogical issues 7.2 Action research in geography education Report preparation

Note: The figures in the parentheses indicate the approximate teaching hours.

4.1 Instructional Techniques

The instructional techniques will be of two types - general and specific. General techniques will be common to all the units whereas the specific techniques will be applied according to the nature of topics in the units to be taught.

4.1 General Instructional Techniques

Varieties of techniques/methods can be applied for this course. The main techniques/ methods applicable to this course include lecture, question answer, discussion, observation, class assignment, and presentation.

4.2 Specific Instructional Techniques

Unit	Activities and instructional techniques
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I	Discussion on the meaning, nature, scope, and approaches of teaching geography.
II	Discussion on the elements and steps of curriculum development.
III	Explain the importance of textbooks and reference materials in teaching geography with example. Discussion on the criterion for the analysis of geography textbook
IV	Discussion of methods and strategies to teach different branches of geography. Explain the construction of instructional aids using local materials.
V	Develop various types of the plan (operation calendar, work plan, unit plan, micro-lessons plan, and lesson plan) and test items and present in the class.
VI	Discussion on the steps of curriculum review. Students will be assigned to review the curriculum and textbook and submit review reports.
VII	Prepare a report based on pedagogical issues and development in Geography Education to the department.

5. Evaluation

5. Evaluation

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks are allocated to internal examination and sixty percent for final/semester examination.

5.1 Internal Evaluation

Forty percent marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

Activities	Marks allotted
Attendance	5
Classroom activities	5
First assignment/Preparation & development of instructional plan and materials	10
Second assignment/ review of school/bachelor level curriculum	10
Third assignment	10
Total	40

5.2 External Evaluation (Final Examination)

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. Sixty percent of the marks are allotted to the final examination. The number and types of questions in the final examination will be as follows:

Types of questions	Total questions to be asked	Number of questions to be answered and marks allotted	Total marks
Group A: Multiple choice	10 questions	10 x 1 marks	10
Group B: Short answer	6 with 2 'or' questions	6 x 5 marks	30
Group C: Long answer	2 with 1 'or' question	2 x 10 marks	20
Total			60

6. Recommended Books and Reference Materials

6.1 Recommended Books

- Anonymous, (nd). Geography teaching. *Journal of Geography in Higher Education (JGHE)*, Retrieved on Jan 1, 2013. (Unit VI, VII and VIII)
- Basa, S. A. S. (2004). *Methods of teaching geography*. New Delhi: Discovery Publishing House
- Butt, G. (ed.) (2020). *Geography education research in the UK: Retrospect and prospect the UK case, within the global context*. International perspectives on geographical education. Switzerland: Springer (Unit VI & VII).
- Crookes, G. & Gass, S. M. (eds.) (nd). *Tasks in a pedagogical context: Integrating theory and practice*. Philadelphia: Multilingual Matters Ltd (Chapter II & IV).
- Gerber, R. & Lidstone, J. (eds.) (1996). *Developments and Directions in Geographical Education*. Philadelphia: Channel View Publications ((Unit I, II, III, IV, V & VI).
- Gopsill, G. H. (1966). *Teaching geography*. London: Macmillan and Company Ltd. (Unit I, II, III, IV, V and VI)
- Harichandan, S., Shaik, A. & Sunni, S. (nd). *Methods of teaching geography*, http://ddceutkal.ac.in/Syllabus/MA_Education/Education_Paper_5_Geography.pdf. (Unit I, II, III, IV, V, and VI)
- Jnawali, D. (1996). *Bhoogol shikshan*. Kathmandu: Vidyarthi Pustak Bhandar (Unit I, II, III, IV, V, VI and VII)
- Kent, A. (ed.) (2000). *Reflective practice in geography teaching*. California: Paul Chapman Publishing Ltd.(Unit II, III, IV, V, VI and VII)
- Lambart, D. & Morgan, J. (2010). *Teaching geography 11-18: A conceptual approach*. England: McGraw-Hill Education. (Unit I, II, III, IV, V, VI and VII)
- Skinner, B. F. (2003). *The technology of teaching*, www.bf Skinner.org.(Unit II, III, IV, and V)
- Smith, M. (ed.) (2002). *Teaching geography in secondary schools: A reader*. London: Routledge Falmer. (Unit I, II, III, IV, V, VI and VII)
- Subbiah, S. (1998). *Geography in Indian universities: Development and trends*. Web page accessed May 1 2009 (Unit VI, VII, and VI)
- Subedi, B. P. (2014). *The state of geography teaching and research in Nepal: A review and reflection*. Kathmandu: Martin Chautari. (Unit VII)
- Tilbury, D. and Williams, M. (Eds), (1997). *Teaching and learning geography*. London: Routledge.(Unit I, II, III, IV, V& VI)
- Williams, P. J. (Ed) (2012). *Technology education for teachers*. New Zealand: University of Waikato, Hamilton,<https://www.sensepublishers.com/> (Unit II, III, IV, V)

6.2 Reference Materials

- Adhikari, S. (1992). *Fundamentals of geographical thought*. Allahabad: Chaitanya Publishing House.
- Groves, N. (ed) (1972). *New movements in the study and teaching of geography*. Australia: Maurice Temple Smith Ltd.
- Hall, D. (1976). *Geography and geography teachers*. London: George Allen and Unwin Ltd.
- Jnawali, D. (2001). *Social studies and geography education in Nepal: An analysis of curricula and textbooks*. Kathmandu: Kalpana Jnawali.
- Kagoda, A. M. (2009). Teaching and learning geography through small group discussions, *Current Research Journal of Social Sciences*, 1(2), 27-32.
- Macnee, E. A. (1971). *Teaching of geography*. Bombay: University Press.
- Mukharji, Shekhar P. (1970). *Geography and education*. Darjeeling: Jeewan Jyoti Prakashan.
- Panday, R. K. (1992). *Bhoogol Shiksha: Darshan ra Vidhi*. Kathmandu: Ratna Pustak Bhandar.
- Subbiah, S. (1998). *Geography in Indian universities: Development and trends*. Web page accessed 1 May 2009.

UNESCO. (1973). *Source book for geography teaching*. New Delhi: Orient Longman.

Geo. Ed. 536: Surveying, Cartography and Field Study

Course No: Geo. Ed. 536

Nature of course: Theoretical and Practical

Level: M.Ed.

Credit hours: 3 (Th 2 + Pr 1)

Semester: Third

Teaching hours: 64 (Th 32 + Pr 32)

1. Course Description

This course is designed to provide students with the advanced knowledge of teaching instrumental surveying, cartography and field study. It deals with the fundamental concepts of instrumental surveying, mapping of area with the help of survey instruments and preparation of map of an area. This also develops the skills of making maps using different sources of information and interpretation of different types of map. Moreover, it enables the students to collect information/data, analyze them and prepare field study report based on the field work.

2. General Objectives

The general objectives of this course are to

- enable the students to understand concepts and principles of instrumental surveying and prepare map of selected area,
- make students familiarize with the principles, techniques and types of cartography,
- familiarizes students with different types of map, map projection and map layout,
- develop the skills of students regarding the selection and construction of appropriate diagrams/cartograms,
- enable the students to interpret and prepare different types of thematic maps,
- make students familiarize with field study techniques, collection, processing and analysis of data collected from the field survey, and
- enable students to prepare survey report based on collected data/information.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Explain cartography and its development trends • Elucidate the scope of cartography • Explain the basic principles of cartography • Identify different types of cartography and cartographic problems 	<p>Unit I: Cartography (6)</p> <p>1.1 Introduction, origin and trends of cartography</p> <p>1.2 Scope of cartography</p> <p>1.3 Basic principles of cartography</p> <p>1.4 Types of cartography</p> <p>1.5 Cartographic problems</p>
<ul style="list-style-type: none"> • Introduce map and describe its uses • Identify basic components of maps • Compare maps on the basis of information or 	<p>Unit II: Map and Map Projection (8)</p> <p>2.1 Introduction and use of map</p> <p>2.2 Components of map</p>

<p>detail used, scale, and use</p> <ul style="list-style-type: none"> • Discuss the types of map projection and their significance • Explain map design and map layout 	<p>2.3 Types of map 2.4 Map projection 2.5 Map layout</p>
<ul style="list-style-type: none"> • Describe the characteristics of topographic map, • Draw contours, profiles and relief features • Discuss the characteristics of different thematic maps • Differentiate between social map and other maps • Represent different statistical data on map 	<p>Unit III: Maps and Diagrams (8)</p> <p>3.1 Topographic maps and contours and profiles 3.2 Thematic map (Choropleths and Isopleths) 3.3 Social maps 3.4 Representation of geographical data on map</p>
<ul style="list-style-type: none"> • Identify types and characteristics of aerial photographs • Develop skills for photo mosaic and aerial photo interpretation • Prepare maps from aerial photographs • Discuss types and characteristics of satellite imagery • Interpret satellite imageries • Prepare land use/land cover map interpreting satellite imageries 	<p>Unit IV: Aerial Photograph and Satellite Imagery (10)</p> <p>4.1 Aerial Photographs 4.1.1 Types and characteristics 4.1.2 Photo mosaic and interpretation 4.1.3 Maps from aerial photograph 4.2 Satellite Imageries 4.2.1 Types and characteristics 4.2.2 Interpretation of satellite imageries 4.2.3 Prepare land use/land cover maps</p>
<ul style="list-style-type: none"> • Explain surveying and its development trends • Develop skills for surveying using Plane table, Prismatic compass and GPS • Prepare a map of assigned area from instrumental survey 	<p>Unit V: Instrumental Surveying (16)</p> <p>5.1 Introduction of instrumental surveying 5.2 Survey an area using instruments • Plane table • Prismatic compass: Open and close traverse • GPS: Data collection 5.3 Preparation of map using survey instrument</p>
<ul style="list-style-type: none"> • Introduce different field survey techniques • Acquire knowledge and skills on field study processes • Construct different field study tools • Collect information/data from field • Edit, process and interpret collected information/data • Prepare a field survey report. 	<p>Unit VI: Field survey (16)</p> <p>6.1 Introduction of field survey 6.2 Planning of field survey 6.3 Instrumentation 6.4 Information/data collection 6.5 Editing, processing and interpretation of data 6.6 Report writing</p>

Note: The figures in the parentheses indicate approximate teaching hours.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

Both theoretical and practical techniques/methods can be applied for this course. The general techniques/methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation as well as practical exercises.

4.2 Specific Instructional Techniques

Unit	Activities and instructional techniques
I	Explain the history and development trend of cartography using inquiry method. Discuss the basic principles and types of cartography. Provide knowledge about analogue and digital cartography using different techniques.
II	Map reading exercise to understand the different types of maps. Compare different types of map and differentiate them on the basis of details provided, scale and use. Exercise on map projections and map layout.
III	Differentiate topographic and thematic maps. Lab work for construction of charts and diagrams using drawing equipments.
IV	Preparation of different thematic maps from aerial photographs and satellite imageries.
V	Handling of various survey instruments/equipments for surveying and lab work including calculation and plotting of recorded data.
VI	Identification of methods, data collection and preparation of field study report.

5. Evaluation

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks will be allotted to internal examination and sixty percent for final/semester examination.

5.1 Internal Evaluation

This course contains both theoretical and practical aspects. Total 25 marks (40 percent of 65 marks allotted of theoretical aspect) are allotted for internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

Activities	Marks allotted
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Attendance	3.5
Classroom activities	3.5
First assignment	6.0
Second assignment	6.0
Third assignment (Textbook review)	6.0
Total	25.0

5.2 External Evaluation (Final Examination-Theoretical)

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester. Since this course contains both theoretical and practical aspects, final evaluation of student will be made using both written and practical modes of examination. Both modes of examination need to pass independently, but percentage will be counted together. Final examination of theoretical aspects will be of 40 marks. The types and number of questions to be included in the final examination of theoretical part are as follows:

Types of question	Total questions to be asked	Number of questions to be answered and marks allocated	Total marks
Group A: Multiple choice	10 questions	10 X 1 marks	10
Group B: Short answer	6 with 2 'or' questions	6 X 5 marks	30
Total			40

5.3 Evaluation Scheme for Practical Examination (35 marks = 20 External + 15 Internal)

Marks scheme for final external evaluation of practical part is as shown below:

- | | |
|--------------------------------|----|
| 1) Written examination | 10 |
| 2) Field report- Viva | 5 |
| 3) Practical record book- Viva | 5 |

Similarly, marks scheme for internal evaluation of practical part is as shown below:

- | | |
|----------------|---|
| 1) Attendance | 3 |
| 2) Involvement | 6 |
| 3) Performance | 6 |

Internal evaluation marks will be submitted along with the marks of external examination.

Students need to secure minimum pass marks in each component (5.1, 5.2 and 5.3) for the completion of the course.

Note:

- *Students should have compulsorily submitted the assigned project work/task/report individually (Field survey report and Practical record book) to the department before final practical examination.*
- *The department will decide the field camp in any location within country at least of 7 days. Field related costs for the students shall be borne by students themselves and the costs related to teachers (travel and accommodation) shall be borne by the University.*

6. Recommended Books and Reference Materials

6.1 Recommended Books

ICIMOD. (2001). *GIS for beginners*. Kathmandu: ICIMOD. (Unit II)

Lillisand, T. M. & Keifer, R.W. (1994). *Remote sensing and image interpretation*. New York: Willey. (Unit IV)

Punmia, B. C. & Jain, A. K. (1994). *Surveying (Vol. I & II)*. New Delhi: Laxmi Publication. (Unit V)

Pradhanang, T. B. (2005). *Jamin sarbekshyan*. Kathmandu: Sajha Prakashan. (Unit V)

Robinson, A. H. (1995). *Elements of cartography*. New York: John Wiley & Sons Inc. (Units I & II)

Singh, R. L. & Singh, R. P. B. (2007). *Elements of practical geography*. New Delhi: Kalyani Publications. (Units I, II, III and IV)

Wolff, H. K. & Pant, P. R. (2003). *A handbook for social science research and thesis writing*. Kathmandu: Buddha Academic Publisher and Distributor Pvt. Ltd. (Unit VI)

6.2 Reference Materials

Aggarwal, A. (1991). *A text book of surveying and levelling*. Delhi: HTATA International Publication.

Banister, A. & Raymond, S. (1992). *Surveying*. London: ELBS with Longman.

Hurn, J. (1989). *GPS: A guide to the next utility*. Trimble Navigation.

Kates, J. S. (1989). *Cartographic design and production*. London: Longman Group Ltd.

Kennedy, M (2002). *The global positioning system and GIS: An introduction*. New York: Tailor and Francis.

Monkhouse, F. J. (1980). *Maps and diagram*. Delhi: B. I. Publication.

Raisz, E. (2007). *Principle of cartography*. Delhi : Surjeet Publications.

Singh, G. (2005). *Map work and practical geography*. Delhi: Vikash Publishing House.

Geo. Ed. 537: Regional Study with Reference to Nepal

Course No: Geo. Ed. 537

Nature of the course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: Third

Teaching hours: 48

1. Course Description

This course is designed to provide the students with the advanced knowledge of teaching regional study with reference to Nepal. It deals with the conceptual as well as theoretical basis of region and regionalization practices in Nepal. It also highlights on distribution of settlements, population and their ethno-demographic characteristics economic activities and major development indicators by regions.

2. General Objectives

The general objectives of this course are to

- familiarize the students with the basic concept of region and regionalization,
- develop skills of the students for regionalization of Nepal and differentiate between formal and functional regions,
- describe types of settlement, population distribution and ethno-demographic characteristics of Nepal,
- make the students able to distinguish major economic activities of Nepal and their characteristics, and
- enable the students to identify and analyze major socio-economic indicators by region.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Explain concept of region • Discuss the basic criteria for regionalization • Explain basic criteria of regionalization • Identify different types of region • Describe the development trends of regional geography 	Unit I: Regions and Regional Geography (4) 1.1 Concepts and nature of region 1.2 Historical perspective and attributes of region 1.3 Basic criteria of regionalization 1.4 Typology of region 1.5 Development trends of regional geography
<ul style="list-style-type: none"> • Describe the formal regions of Nepal • Explain the functional regions of Nepal 	Unit II: Regions in Nepal (6) 2.1 Formal Regions <ul style="list-style-type: none"> • Ecological Regions • Physiographic regions • Climatic regions 2.2 Functional region <ul style="list-style-type: none"> • Administrative • Economic • Cultural region • Other regions
<ul style="list-style-type: none"> • Explain the growth, trends and distribution of population • Analyze the ethno-demographic characteristics by regions • Describe trends and patterns of migration • Introduce human settlements with regions 	Unit III: Population and Settlement (10) 3.1 Growth and distribution of population 3.2 Ethno-demographic characteristics of population 3.3 Trend and patterns of migration 3.4 Settlements and its distribution in different regions
<ul style="list-style-type: none"> • Explain the status and utilization of land resources 	Unit IV: Resources Endowments (12) 4.1 Land resources 4.2 Forest resources

<ul style="list-style-type: none"> • Examine the status of forest resources, • Describe the status of water resources, • Examine the status of mineral resources, • Explain the soil resources, • Discuss on biodiversity resources, • Explain the status of cultural resources 	4.3 Water resources 4.4 Mineral resources 4.5 Soil resources 4.6 Biodiversity resources 4.7 Cultural resources
<ul style="list-style-type: none"> • Explain the characteristics, production, distribution and problems of Nepalese agriculture • Identify the present status and problems of industrial development • Point out the present status, problems and prospects of tourism development • Describe the status of foreign trade 	Unit V: Economic Activities (8) 5.1 Agriculture 5.2 Industry 5.3 Tourism 5.4 Foreign trade
<ul style="list-style-type: none"> • Explain the development of infrastructures • Discuss development indicators by region 	Unit VI: Infrastructures and Development Indicators (8) 6.1 Infrastructure <ul style="list-style-type: none"> • Transportation • Electricity • Drinking water • Communication • Health • Education 6.2 Development Indicators <ul style="list-style-type: none"> • Human Development index (HDI) • Gender Development Index (GDI) • Gender Inequality Index (GII) • Multidimensional Poverty Index (MPI)

Note: The figures within the parenthesis indicate the approximate teaching hours.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

Varieties of techniques/methods can be applied for this course. The general techniques/ methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation.

4.2 Specific Instructional Techniques

Unit	Activities and instructional techniques
I	Define regional geography and trace out the historical development and differentiate it from systematic geography using chart. Assignment of typology development.
II	Differentiate ecological belt and physiographic regions of Nepal using maps and discuss about their formation, distribution and characteristics. Assignment for map preparation.
III	Slide presentation and assignment for project work.
IV	Students' presentation for material collection and presentation on resources of Nepal.
V	Presentation and assignment on economic activities and their characteristics.

VI	Map presentation and discussion by using reports of CBS, NLSS, UNDP, WFP etc.
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5. Evaluation

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks are allocated to internal examination and sixty percent for final/semester examination.

5.1 Internal Evaluation

Forty percent marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

Activities	Marks allotted
Attendance	5
Classroom activities	5
First assignment	10
Second assignment	10
Third assignment	10
Total	40

5.2 External Evaluation (Final Examination)

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. Sixty percent of the marks are allotted to the final examination. The number and types of questions in the final examination will be as follows:

Types of questions	Total questions to be asked	Number of questions to be answered and marks allotted	Total marks
Group A: Multiple choice	10 questions	10 x 1 mark	10
Group B: Short answer	6 with 2 'or' questions	6 x 5 marks	30
Group C: Long answer	2 with 1 'or' question	2 x 10 marks	20
Total			60

6. Recommended Books and Reference Materials

6.1 Recommended Books

- Friedman, J. & Alouse, W. (eds.) (1974). *Regional policy*, Cambridge: MIT Press. (Unit I)
- GC, R. K. & Shrestha, N. L. (2014). Literacy and educational status of Nepalese population. *Population Monograph of Nepal* Vol. II (191-220), Kathmandu: Central Bureau of Statistics.
- Government of Nepal (GoN). (2018). *Nepal multidimensional poverty index: Analysis towards actions*. Kathmandu: National Planning Commission, GoN. (unit VI)
- Hagen, T. (1998). *Nepal: The Himalayan kingdom*. Hague: Leiden. (Unit II, IV, & IV)
- Karan, P. P. (1960). *Nepal: Cultural and physical geography*. USA: University of Kentucky press. (Unit II, III, IV, & IV)
- Passi, A. (2020). *Regional Geography*, Research Gate, DOI: 10.1016/B978-0-8-102295-5.10694 Unit I).
- Panday, R. K. (2058). *Physical geography of Nepal (in Nepali)*, Kathmandu: Vidyarthi Pustak Bhandar. (Unit I, & II)
- Panday, R. K.(2066). *Human geography of Nepal (in Nepali)*, Kathmandu: Ratna Pustak Bhandar. (Unit III, IV, V, & VI)

- Paudyal, N.P.(2064).*Geography of Nepal* (in Nepali), Kathmandu : Gyankunja Publication.(Unit I, II, III, IV & V)
- Rejan, R.; Renata, P; Sofija, R. & Darko, V. (2015). Region as a basic territorial unit of regional development (Concepts and types), *Economic Analysis*, 48(3-4) 69-80 (Unit I).
- Shrestha, B. P. & Jain, S.C. (1978). *Regional development in Nepal: An exercise in reality*. Development Publisher. (Unit IV, & V)
- Shrestha, C.B. & Rijal, S. P. (2016). *Nepal: Cultural geography*. Kathmandu: Prakash Shrestha & Sunil Shrestha. (Unit III, IV, & V)
- Shrestha, C. B.; Rijal, S. P. & Chidi, C. L. (2018) *Settlement geography of Nepal*. Kathmandu: KEC Publication. (Unit II)
- Shrestha S. H. (1998). *Economic geography of Nepal*. Kathmandu: Educational Enterprise. (Unit III, IV, & V)
- UNDP. (2019). *Human development report 2019*. New York: UNDP. (Unit VI)

6.2 Reference Materials

- Acharya, K. R. (2019). Nepalese foreign trade: Growth, composition and direction. *NCC Journal* 4(1), 90-96
- Bhandari, S. (2059). *Geography of Nepal(in Nepali)*. Kathmandu: Ratna pustak Bhandar.
- Bista, B. G. (2075). Nepal ko baideshika byapar ma bidyaman chunauti ra sambhanaharu. *Vansar Smarika 2075*, Kathmandu: Artha mantralaya.
- Capello, R. (2011). Location, regional growth and local development theories, *AESTIMUM* 58, 1-25
- Central Bureau of Statistics (CBS). (2014). *Development of manufacturing industries in Nepal: Current state and future challenges*. Kathmandu: CBS.
- Central Department of Sociology/Anthropology (CDSA). (2014). *Social inclusion atlas of Nepal: Language groups*, Lalitpur: CDSA, Tribhuvan University.
- Department of Forest Research and Survey (DFRS). (2015). *State of Nepal's forests*. Kathmandu: Forest Resource Assessment, Nepal.
- Department of Local Infrastructure Development and Agricultural Roads (DoLIDAR) (2016). *Statistics of local road network (SLRN) 2016*, Kathmandu: DoLIDAR.
- Department of Mines and Geology (2014). ***Petroleum exploration opportunities in Nepal: Brief information***, Retrieved from <http://www.petroleumnepal.gov.np/site/exploration> opportunities.
- GoN, New Era, NHSSP & ICF International (2016). *Nepal health facility survey 2015 (Preliminary Report)*, Kathmandu: Ministry of Health, GoN.
- GoN. (2076/77). *Arthika Surbekhan 2076/77*, Kathmandu: Artha mantralaya.
- Kafle, A. (2017). Nepal's foreign trade: Present trends. *International Journal of Engineering and Management Research (IJEMER)*, 2 (11), 1-7.
- Khatiwada, P. P. (2014). International migration and citizenship in Nepal. In CBS (ed.), *Population Monograph of Nepal, Vol. I* (211-239). Kathmandu: CBS.
- Nepal Electricity Authority (NEA). (2016). *Nepal Electricity Authority: A year of review- Fiscal year 2015/16*. Kathmandu: NEA.

- Panday, R.K.(1987). *Altitude geography: Effects of altitude on the geography of Nepal*, Kathmandu: The Himalayan Book Distribution.
- Paneru, H. (2013). *Major soils of Nepal*. Retrieved from <https://hrpaneru.wordpress.com/2013/08/06/major-soils-of-nepal>.
- Pathak, R.S. & Lamichhanne, K. (2014). Population size, growth and distribution, In CBS (ed.) *Population Monograph of Nepal, Vol. I (16-38)*, Kathmandu: CBS.
- Pokhrel, B. P. (2063). *Physical, economic and cultural geography of Nepal*, Pokhara: Sunita Pokhrel.
- Rengasamy, S. (nd) *Regional planning-all part-concept of – region, united nations center for regional development (UNCRD)*, Retrieved from academia.edu.html.
- Rijal, S. P. (2016). *Nepal ko bhugol*. Kathmandu: Shanta Devi Rijal.
- Sharma, P. (1973-74). Growth pole as a regional development strategy in Nepal. *Himalayan Review*, 6, 50-57.
- Shrestha, A. K. (2070). *Nepal: Bhaugolic tatha arthik ruprekha*. Kathmandu: Subhakamana Prakashan.
- Shrestha, C.B. (1969-70). Problems of regionalization in Nepal. *Himalayan Review*, 3, 13-21
- Subedi, B. P. (2014). Urbanization in Nepal: Spatial pattern, social demography and development, In CBS (ed.) *Population Monograph of Nepal, Vol. III (95-154)*. Kathmandu: CBS.
- Suwal, B. R. (2014). International Migration in Nepal, In CBS (ed.) *Population Monograph of Nepal, Vol. I (241-283)*. Kathmandu: CBS.
- Upreti, B. N. (nd). *The physiography and geology of Nepal and their bearing on the landslide problem*, Retrieved from http://lib.icimod.org/record/21555/files/c_attachment_96_777.pdf.
- Water and Energy Commission Secretariat (WECS). (2011). *Water resources of Nepal in the context of climate change 2011*.Kathmandu: WECS.
- Your Article Library (nd). *Regional concept of geography: Attributes, classification of regional and regionalism*. Retrieved from <https://www.yourarticlelibrary.com/geography/regional-concept-of-geography-attributes-classification-of-regional-and-regionalism/24593>.

Geo. Ed. 538: Geography of Tourism

Course No: Geo. Ed. 538

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: Third

Teaching hours: 48

1. Course Description

This course is designed to provide the students with knowledge of geography of tourism. It deals with the fundamental concepts of tourism, evolution of geography of tourism and recreation, tourism services and carrying capacity, impact of tourism and tourism policy and planning with reference to Nepal. In addition, it helps student to learn site selection methods and forecasting techniques of tourism development. It also provides knowledge and skill on sustainable tourism development in the national and international context.

2. General Objectives

The general objectives of the course are to

- enable the students to understand the nature, definition, basic concept, approaches and theories of tourism development,
- familiarize them to employ the well-recognized concepts that relate to tourism and recreation in order to achieve a more advanced level of understanding of the spatial processes at work,
- make students able to identify, analyze and evaluate tourism sites, resources and activities, and
- enhance skills of the students for environmental tourism planning and its sustainability.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Explain the nature and scope of geography of tourism • Describe the approaches to the study of geography of tourism • Classify the typology of tourism • Discuss the theories of tourism geography 	<p>Unit I: Introduction to Geography of Tourism (13)</p> <p>1.1 Nature and scope</p> <p>1.2 Approaches</p> <p>1.3 Typology: Eco-tourism, Rural/village tourism, Pilgrimage tourism, Trekking tourism, Sustainable tourism and Home stay</p> <p>1.4 Theories related to geography of tourism: Butler, Herzberg and Maslow</p>
<ul style="list-style-type: none"> • Trace out the evolution and historical development of tourism • Discuss the trends of tourism development • Identify the natural, socio-cultural and historical resources for tourism • Describe the present status of tourism and recreation 	<p>Unit II. Evolution of Tourism and Recreation (9)</p> <p>2.1 Evolution and historical development</p> <p>2.2 Trends</p> <p>2.3 Tourism Resources: Natural, Socio-cultural and Historical</p> <p>2.4 Present status of tourism and recreation</p>

<ul style="list-style-type: none"> • Assess the present status of tourism services, facilities and organizations • Discuss the tourism carrying capacity • Analyze the tourism carrying capacity with reference to Nepal 	<p>Unit III. Tourism Services and Carrying Capacity (9)</p> <p>3.1 Tourism services, facilities and organizations (International, National and Local)</p> <p>3.2 Concept of carrying capacity</p> <p>3.3 Carrying capacity with reference to Nepal</p>
<ul style="list-style-type: none"> • Analyze the impacts of tourism • Assess the ecological and socio-cultural impacts • Examine the economic impacts 	<p>Unit IV: Impact of Tourism (5)</p> <p>4.1 Natural/Environmental</p> <p>4.2 Socio-cultural</p> <p>4.3 Economic</p>
<ul style="list-style-type: none"> • Discuss the methods of site selection for tourism development • Analyze the Delphi technique for forecasting tourism development • Describe the model methods 	<p>Unit V: Methods and Techniques in Tourism (6)</p> <p>5.1 Site selection for tourism development</p> <p>5.2 Delphi technique of forecasting tourism development</p> <p>5.3 Model method</p> <ul style="list-style-type: none"> • Flow model • Territorial model • Theoretical model
<ul style="list-style-type: none"> • Examine the policy of tourism development in Nepal • Analyze the national tourism strategic plan • Discuss the contemporary issues in tourism development in Nepal 	<p>Unit VI: Tourism Policy and Planning in Nepal (6)</p> <p>6.1 Tourism development policies</p> <p>6.2 National Tourism Strategic Plan (2016-2025)</p> <p>6.3 Contemporary issues in tourism development in Nepal</p>

Note: The figures in the parentheses indicate the approximate teaching hours.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

Varieties of techniques/methods can be applied for this course. The general techniques/ methods applicable to this course include lecture, question answer, discussion, observation, class assignment and presentation.

4.2 Specific Instructional Techniques

Unit	Activities and instructional techniques
I	Provide theoretical concepts of the subject through local examples. Give ideas of tourism based on visual aids and materials.

II	Use lecture method for theoretical concepts, evolution and trends of tourism. Activate students to discover the resources of tourism and analyze the status of tourism in Nepal.
III	Apply discussion and question answer method to identify services, facilities and organizations of tourism. Interpret the meaning of carrying capacity through student center method. Computation of carrying capacity of Nepal using Tourism Board (NTB) Data.
IV	Use inductive method for theoretical explanation based on available case examples at local to global scale
V	Carry out action research by students. Make able students to apply Delphi technique and models for forecasting the future development of tourism.
VI	Review case studies based on planning and policies with Nepalese examples

6. Evaluation

The achievement of the students will be assessed through internal and final/semester examination. Forty percent marks are allocated to internal examination and sixty percent for final/semester examination.

5.1 Internal Evaluation

Forty percent marks are allotted to internal evaluation. Internal evaluation will be conducted by course teacher based on the following activities:

Activities	Marks allotted
Attendance	5
Classroom activities	5
First assignment	10
Second assignment	10
Third assignment	10
Total	40

5.2 External Evaluation (Final Examination)

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. Sixty percent of the marks are allotted to the final examination. The number and types of questions in the final examination will be as follows:

Types of questions	Total questions to be asked	Number of questions to be answered and marks allotted	Total marks
Group A: Multiple choice	10 questions	10 x 1 marks	10
Group B: Short answer	6 with 2 'or' questions	6 x 5 marks	30
Group C: Long answer	2 with 1 'or' question	2 x 10 marks	20
Total			60

6. Recommended Books and Reference Materials

6.1 Recommended Books

- Chettri, G. & Rayamaji, R. (2061). *Tourism Development and Management (in Nepali)*. Kathmandu: Asian Publication.(Unit II, III, IV & VI)
- Collier, A. (1989). *Principles of tourism*. New Zealand: Pitman. (Unit I)
- HMG/DOT. (1972). *Nepal: Tourism Master Plan*. Kathmandu: HMG/Ministry of Commerce and Industry. (Unit IV, V & VI)
- Kunwar, R.R. (1997). *Tourism and development: Science and industry interface*. Kathmandu: Laxmi Kunwar.(Unit I, III, IV, & V)
- Ministry of Tourism, Cultural and Civil Aviation (2016). *National tourism strategic plan (2016-2025)*.Kathmandu : Ministry of Tourism, Cultural and Civil Aviation, Nepal.
- Pathak, R.S. (2012). *Tourism Geography (With Special Reference to Nepal)*. Kathmandu: Uma Pathak. (I, II, III, IV & V)
- Puri, U. (2063). *Cultural Tourism in Nepal (in Nepali)*. Kathmandu: Taleju Publication. (II, III, IV & VI)
- Sharma, P. (1995). *A framework for tourism carrying capacity analysis*. ICIMOD, Kathmandu: Discussion Paper Series No. MEI 95//. (Unit III)
- Smith, S.L. (1987). *Tourism analysis: A handbook*. UK: Longman Group. (Unit I & II)

6.2 Reference Materials

- Bhatta, D. P. (2006). *Eco-tourism in Nepal (with theoretical concepts and principles)*. Kathmandu: Anju Bhatta.
- Butter, R.W. (1980). *The concept of tourist area cycle of evolution: Implication for management of resources*. Canadian Geographers, vol. 24, No.1: 5 -12.
- Cheia, G. (2010). Research methods in tourism. *Sectiunea Geografif XIX*,
<https://www.researchgate.net/publication/307685405>.DOI:10.4316/GEOREVIEW.2010.19.2.98.
- Gurung, T. R. (2007). *Mountain Tourism in Nepal*, Kathmandu: Pratima Gurung.
- Hall, C.M. & Page, S.J. (2002). *The geography of tourism and recreation: Environment, place and space*. London: Routledge.
- Inskeep, E. (1994). *National and regional tourism planning*. New Delhi: Himalayan Books.
- Matheson, A. & Wall, G. (1982). *Tourism: Economic, social and physical impact*. New York: Longman.
- Murphy, P.E. (1985). *Tourism and community approach*. New York: Routledge.
- Poudyal, N. P. (2016). Tourism in Nepal : Trends, Patterns and Major attractions of Bardiya National Park. *The Third Pole*, Vol 14-16(27-32): Department of Geography Education.
- Robinson, H. (1976). *A geography of tourism*. London: MacDonald and Evans.

Sharma, B. & Kharel, S. (2068). *Rural Tourism* (in Nepali). Kathmandu: New Hira Book Enterprises.

Upadhyaya, M. P. (2021). *A handbook of Tourism*. Biratnagar: Samaj Paramarsha Sewa.

Educational Planning and Management (EPM)

Ed. PM. 536: Financing of Education

Course No.: Ed. PM. 536

Nature of the course: Theory Level: M.Ed.

Credit hours: 3

Semester: Third

Teaching hours: 48

1. Course Description

This course on Financing of Education aims at orienting about conceptual basis and modes of education financing with particular reference to school education to higher education students. It intends to provide knowledge about the way education in general and school education in particular are financed and regulated. The course also orients students about different practices of ensuring financial accountability in education sector. Thus this course encourages students to have a broader conceptual clarity about financing of education.

2. General Objectives

The general objectives of this course are as follows:

- To enable conceptualize the basic philosophies of education financing.
- To understand multiple sources of education financing.
- To conceptualize and explain different trends and modalities of school education
- To make students knowledgeable about the techniques of financial resource management in education
- To familiarize students with education financing practices in Nepal.

3. Specific objectives and contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Describe the basic principles of financing education. • Explain the objectives for financing education • Explore the approaches to education finance • Elaborate the funding in Education • Explain the Investment Decision and Risk, return, and opportunity cost of schooling • Draw conditional cash transfer in education. • Describe subsidization in education. 	<p>Unit I: Economics of Education Finance (12)</p> <p>1.1 Principle of education finance 1.1.1 Definition 1.1.2 Scope</p> <p>1.2 Objectives of financing education</p> <p>1.3 Approaches to the financing of education 1.3.1 The residual, the direct return approach 1.3.2 The manpower need approach 1.3.3 Demand and supply side approach</p> <p>1.4 Funding in Education 1.4.1 Project base funding 1.4.2 Formula funding 1.4.3 Need base funding</p> <p>1.5 Investment Decision</p> <p>1.6 Risk, return, and the opportunity cost of schooling</p> <p>1.7 Conditional cash transfer</p> <p>1.8 Subsidization in Education</p>

<ul style="list-style-type: none"> • Identify and explain the indicators of education financing. • Describe the sources of school finance. • Explain the free, cost-sharing cost recovery and reduction of unit cost in school financing 	<p>Unit II: Indicators and Sources of Financing of Education (8)</p> <p>2.1 Indicators of financing of education</p> <p>2.1.1 Educational expenditure and GDP/GNP/GNH</p> <p>2.1.2 Educational expenditure and national budget</p> <p>2.2 Sources of school finance</p> <p>2.3 Concept of free, cost-sharing cost recovery and reduction of unit cost in school financing.</p>
<ul style="list-style-type: none"> • Explain the general trends and modalities of education financing • Explain trends and modalities of school education financing in the context of Nepal. • Outline the critical issues on financing modalities of the government. 	<p>Unit III: Trends and Modalities of Financing of School Education (12)</p> <p>3.1 Trends (National and International)</p> <p>3.2 Modalities of government expenditure on education</p> <p>3.2.1 Block grants/lump-sum grants</p> <p>3.2.2 Per capita funding</p> <p>3.2.3 Matching fund</p> <p>3.2.4 Ear marked Scheme</p> <p>3.2.5 Performance-based scheme</p> <p>3.3 Critical issues on financing modalities</p>
<ul style="list-style-type: none"> • Describe resource generation & Its management • Explain the resource planning and targeting • Elaborate the school base allocation of resources. • State the expenditure in education (Equity and efficiency base) • Explain critical issues related to managing educational resources 	<p>Unit IV: Financial Resource Management and Economic Analysis (8)</p> <p>4.1 Resource generation & Its management</p> <p>4.2 Resource planning and targeting</p> <p>4.3 School base allocation of resources.</p> <p>4.4 Expenditure in education (Equity and efficiency base)</p> <p>4.5 Some critical issues related to managing educational resources</p>
<ul style="list-style-type: none"> • State the history of financing of education in Nepal. • Explain the financing of education in Nepal • Draw the financial and social audit in School. • Explore the issues and challenges of financing of education. 	<p>Unit V: Education Financing Practices in Nepal. (8)</p> <p>5.1 History of financing of Education in Nepal.</p> <p>5.2 Financing of education in Nepal</p> <p>5.2.1 Investment</p> <p>5.2.2 Analysis of school budget (adequacy, equity and efficiency)</p> <p>5.3 financial and social audit in School.</p> <p>5.4 Issues and challenges of financing of education.</p> <p>5.4.1 Free education</p> <p>5.4.2 Targeting</p> <p>5.4.3 School quality</p> <p>5.4.4 Capacity</p>

	5.4.5 Sustainability 5.4.6 Monitoring
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Note: The figures in the parenthesis indicate approximate hours allotted to each unit.

4. Instructional Techniques: General as well specific instructional techniques have been suggested to deliver the contents in the classroom and to carry out experiential exercises. Here is a brief account of these techniques:

4.1 General Instructional Techniques

- Lecture
- Discussion
- Question-answer
- Project work

4.2 Specific Instructional Techniques

To promote experiential learning in this course, following specific instructional techniques are recommended for selected units to ensure students' active participation in teaching-learning process and make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
Unit I: Economics of Education Finance	Students will be divided in groups and certain sub-topic will be assigned to team. Each group will prepare a brief field-based report and present it in the class using multimedia projector. The presentation will be supported by teacher's comments.
Unit II: Indicators and Sources of Financing of Education	Review the indicators and source of financing of Education and prepare reports and present the reports in class.
Unit III: Trends and Modalities of Financing of School Education	Students will study and analyze the trends and modalities of financing of school education. They will prepare group report and present in the classroom for discussion.
Unit IV: Financial Resource Management and Economic Analysis financing of School Education	Students in the groups will visit community school and observe the existing facilities and identifying their needs for separate topic. They will identify the gaps that exist between the facilities and the needs. They will prepare a brief report for presentation. The presentation will be followed by discussion and supplemented by teacher's comments.
Unit V: Education Financing Practices in Nepal.	The sub-topic of the unit is divided in different groups. Students will prepare the presentation notes on the given topics. The notes will be presented in the class followed by discussion and feedback.

5 Evaluation

5.1 Internal Evaluation 40%

The concerned teacher will carry out the internal evaluation of the students based on the following criteria.

1. Attendance	05 Marks
2. Participation in learning	05 Marks
3. First assignment/assessment	10 Marks
4. Second assignment/assessment	10 Marks
5. Third assessment	10 Marks
Total	40 Marks

5.2 External Evaluation (Final Examination) 60%

Examination section, Dean's Office, Faculty of Educational will conduct final examination at the end of the semester. The number of items in each category of question and distribution of points to be included in the final examination paper are as follows:

1. Objective type questions (10 Multiple choice questions x 1)	10 Marks
2. Short answer questions (6 questions with 2 choice x 5)	30 Marks
3. Long answer questions (2 questions with 1 choice x 10)	20 Marks

Total 60 Marks

6. Recommended Books and References

6.1 Recommended Books

- Alain, de J. & Elisabeth S. (2004). *Conditional cash transfer programs: Are they really magic bullets?*
- Baker, B. D., Green, P. E. & Richards, C. E. (2007). *Financing Education Systems*. Prentice Hall
- Benson, C.S. (1995). Educational financing. In Martin Carnoy (Ed.). *International encyclopedia of economics of education*. New York: Elsevier Science Ltd.
- Chaudhry, S. & Uboweja, A. (2014). *Partnerships in school education. Learning and insights for India*. India: Central Square Foundation.
- Gaspar, F. & Claudia, V. (2010). *Conditional cash transfers: A global perspective*. MDG Insights Issue 01.

6.2 References

- Grigoli, F. (2014). *A hybrid approach to estimating the efficiency of public spending on education in emerging and developing economies*. IMF Working Paper. <http://www.imf.org/external/pubs/ft/wp/2014/wp1419.pdf>
- Hartog, J. & Diaz-Serrano, L. (2014). *Why Do We Ignore the Risk in Schooling Decisions?* Institute for the Study of Labor, Bonn.
- Hasan, A. (2010). *Gender-targeted conditional cash transfers. Enrolment, spillover effects and instructional quality*. Washington D.C.: The World Bank.
- Human Development Unit, South Asia Region (2014). *Public expenditure tracking and quantitative service delivery surveys in Nepal's education sector*. Washington DC: World Bank.
- Janssen, M.C.W., E. M., & Kamphorst, E. M. (2004). *The Economics of demand-side financing*. The Netherlands: SEOR-ECRI.
- Janssen, M.C.W., E. M., & Kamphorst, E. M. (2004). *The Economics of demand-side financing*. The Netherlands: SEOR-ECRI.
- Jesper, S. & Henrik, F. L. (2005). *Conceptual basis for performance based grant systems and selected international experiences*. National Stakeholder Workshop in Nepal, Kathmandu 31 May 2005.
- Koirala, M.P. & Koirala, A. (2014). Dilemmas and perspectives of financing Nepal's school education. *Academic Voices*, Vol. 4, No. 1, p.29-36.
- Lamsal, H. (2014). *Financing in primary education in Nepal from equity perspectives and its role in social change*.
- LaRocque, Norman (2008). *Public-private partnerships in basic education: An international review*. London: CfBT Education Trust.
- OECD (2002). *Financing of education, Investment and returns .Analysis of the world education indicators* editor UNESCO .
- Robertson, S.L. and Verger, A. (2012) *Governing Education Through Public Private Partnerships*, published by the Centre for Globalization, Education and Societies, University of Bristol, Bristol BS8 1JA, UK at: <http://susanleerobertson.com/publications/>
- Santwona Memorial Academy, Educational Research Centre (2009). *A study on the financial management of department of education, District Education Office, school; and tracking of school grants (especially, sip and rahat grants)*. Sanothimi: Department of Education
- School of Education (Unpublished doctoral dissertation). Kathmandu University, Dhulikhel.
- The institute of internal auditors (2012). *Supplemental Guidance: The role of auditing in public sector governance*. www.globaliaa.org/standards-guidance
- UNESCO (2008). *Equity and inclusion in education. Tools to support education sector planning and evaluation*. www.unesco.org/bpi/pdf/iatt_equity_inclusion_tools_042008_en.pdf

Ed. PM. 537: Managing Diversities in Education

Course No: Ed. PM. 537

Level: M.Ed.

Semester: Third

Nature of course: Theoretical

Credit Hours: 3

Teaching hours: 48

1. Course Description

This course is designed to provide the students with perspectives on diversities to be managed in education. It particularly acquaints the students with the performance, practices, and factors of diversity management, emphasizing multicultural perspectives. Diversity technology, sources of diversity, and managing diversity of people that result from different backgrounds that they come from are the focus of the course.

2. General Objectives

The objectives of this course are as follows:

- To acquaint the students with fundamental concepts and dimensions of diversity management from different perspectives.
- To develop ability to accommodate diversity in education for its management.
- To explore the challenges in relation to the organization of education.
- To accommodate the students with different models of diversity management.
- To familiarize the concept of using technology and managing diversity.

3. Specific objects and contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Draw the concept, need, and importance of studying diversity in education. • Describe the dimensions of diversity in education. • Explore planning of different dimensions of diversity 	<p>Unit I: Concept and Dimensions of Diversity in Education (8)</p> <p>1.1 Concept of Diversity 1.2 Need and importance of studying diversity in education 1.3 Dimensions of diversity in education 1.3.1 Gender 1.3.2 Ethnicity and caste 1.3.3 Language 1.3.4 Economy 1.3.5 Culture and religion 1.3.6 Special needs 1.3.7 Intelligence and ability 1.4 Planning for different dimensions of diversity</p>
<ul style="list-style-type: none"> • Explore the need for multicultural curriculum in education • State the need to accommodate bilingual and multilingual approach to education • Enumerate the concept of inclusive education • Identify ways of changing school culture • State ways to ensure action for social justice • Highlight ways to accommodate local and school-based curriculum 	<p>Unit II: Accommodating Diversity in Education (11)</p> <p>2.1 Need of multicultural curriculum 2.2 Bilingual and multilingual approaches to education 2.3 Inclusive education 2.4 Changing school culture 2.5 Action for social justice 2.6 Local and school-based curriculum</p>

<ul style="list-style-type: none"> • State structural diversity with its mechanism for managing in education • Critique community-based schooling from the perspective of diversity • State the need to foster public-private partnerships for people in education. • Illustrate multi-culture as diversity in education • Identify contemporary challenges of ethnic diversity in educational organizations. • Present the holistic model of total quality diversity in education. 	<p>Unit III: Diversity and Challenges in the Organization of Education (12)</p> <p>3.1 Structural diversity and mechanism for managing it in education</p> <p>3.2 Community-based schooling</p> <p>3.3 Public-private partnership for people (4P)</p> <p>3.4 Multi-culture as diversity</p> <p>3.5 Contemporary challenges of ethnic diversity</p> <p>3.6 A holistic model of total quality diversity</p>
<ul style="list-style-type: none"> • Explain the assimilationist, differentialist and multiculturalist models of diversity management • List out ways of planning for diversity in education • State the diversity challenges for national policy-maker and planners 	<p>Unit IV: Models of Diversity Management and Planning (11)</p> <p>4.1 Models for incorporating diversity</p> <p>4.1.1 Assimilationist model</p> <p>4.1.2 Differentialist model</p> <p>4.1.3 Multiculturalist model</p> <p>4.2 Planning for diversity in education</p> <p>4.3 Diversity: Challenges for national policy maker and planners</p>
<ul style="list-style-type: none"> • State the use of technology in diversity management • Suggest ways for increasing access, performance, opportunity and knowledge through technology in managing diversity. • Familiarize the language, indigenous knowledge and culturally sustaining pedagogies 	<p>Unit V: Technology and Diversity Management (6)</p> <p>5.1 Use of technology in diversity management</p> <p>5.1. 1 Access</p> <p>5.1. 2 Performance</p> <p>5.1. 3 Opportunity</p> <p>5.1. 4 Knowledge</p> <p>5.1. 5 Status</p> <p>5.2 Pedagogies in diverse school</p> <p>5.2.1 Language and indigenous knowledge.</p> <p>5.2.2 Culturally sustaining pedagogies</p>

Note: The figures in the parenthesis indicate approximate hours allotted to each unit.

4. Instructional Techniques: General as well specific instructional techniques have been suggested to deliver the contents in the classroom and to carry out experiential exercises. Here is a brief account of these techniques:

4.1 General Instructional Techniques

- Lecture

- Discussion
- Question-answer
- Project work

4.2 Specific Instructional Techniques

To promote experiential learning in this course, following specific instructional techniques are recommended for selected units to ensure students' active participation in teaching-learning process and make the teaching-learning research-oriented.

Unit	Specific Instructional Technique
Unit I: Concept and Dimensions of Diversity in Education	<ul style="list-style-type: none"> • Lecture • Classroom discussion <p>Pair group or individual assignment: Dimentions of Diversity in Education. Students will be divided into pairs. Those who want to undertake the assignment independently will be allowed to do so. Each pair or individual will investigate and prepare and present briefs in the class followed by discussion and feedback input from the teacher and peers. The teacher can use this as one of the forms of internal assessment in order to grade students' performance. Students will search the resource materials in addition to what the teacher provides so that they can read them before preparing the paper for presentation in the class.</p>
Unit-II: Accommodating Diversity in Education	<ul style="list-style-type: none"> • Lecture • Classroom discussion <p>Group students will prepare a brief paper on the accommodating diversity in education. Group of students will investigate, prepare and present their paper in the class followed by class room discussion and feedback input from the teacher and peers. Students will search the resource materials from library and internet. Teacher need to provide feedback before the paper presentation in the class.</p>
Unit-III: Diversity and Challenges in Organization of Education	<ul style="list-style-type: none"> • Lecture • Group work • Classroom discussion • Form pairs of students to prepare a comparative picture on structural diversity and mechanism for managing education from diversity perspective. Let them present the paper in the class and discuss to find out ways of managing diversity in education in Nepal. Work out groups of students to study diversity in community based school setting, public private partnership for the people, multi-cultural society, ethnic composition and holistic model of total quality. Let them prepare brief reports and present them in the class followed by discussion.

Unit-IV: Models of Diversity Management and Planning	<ul style="list-style-type: none"> • Lecture • Discussion <p>Pair group or individual assignment: Each pair or individual student will prepare a brief paper on the models of diversity management and Planning. Each student will investigate, prepare and present her/his paper in the class followed by discussion and feedback input from the teacher and peers. The teacher can use this as one of the forms of internal assessment in order to grade students' performance. Students will search the resource materials in addition to what the teacher provides so that they can read them before preparing the paper for presentation in the class.</p>
Unit-V: Technology and Diversity Management	<ul style="list-style-type: none"> • Lecture • Discussion • Library study <p>Assign students in groups to draw the concept and use of technological access, performance, opportunity, knowledge and status for diversity in education. Let them prepare brief reports with the ways of managing diversity through technology and present them in the class. Let the class discuss after presentation of the report with appropriate feedback.</p>

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be based on the following criteria:

1. Attendance	5 marks
2. Participation in learning	5 marks
3. First assignment/assessment	10 marks
4. Second assignment/assessment (Mid-term test)	10 marks
5. Third assessment	10 marks

Total 40 marks

5.2 External Evaluation (Final Examination) - 60%

External evaluation will be conducted by Examination Division, Office of the Dean; Faculty of Education will conduct final examination at the end of semester with a focus on the following types of questions:

Objective type questions (Multiple choice 10x1)	10 marks
Short answer questions (6 questions with 2 choice x 5 marks)	30 marks
Long answer questions (2 questions with 1 choice x 10 marks)	20 marks

Total 60 marks

6. Recommended and References Books

6.1 Recommended Books

- Banks, J. A. (2006). *Cultural diversity and education: foundations, curriculum and teaching*. Boston, MA: Allyn and Bacon (Unit I to V)
- Caleb, R. (2006). *What do we mean by diversity management?* New Haven: Southern Connecticut State University. (Unit I, III and IV)
- Corson, D. (1998). *Changing education for diversity*. Buckingham: Open University Press (Unit I to V)

- Inglis, C. (2008). *Planning for cultural diversity*. Paris: UNESCO/IIEP (Unit I to V)
- Pieter, J. V. (2004). *Comprehensive diversity management plan*. Washington DC: US nuclear regulatory commission. (Unit I, II and IV)
- Pieter, J. V. (2011). *Diversity Management in Higher Education: A South African Perspective in Comparison to a homogeneous and monomorphous society*. Germany: Centre for Higher Education Development. University Press (Unit I to V)
- Watson, C.W. (2002) *Multiculturalism*. New Delhi: Viva Books (Unit IV)

6.2 References Book

Oparah, D.C. (2006). *Make a world of difference: 50 asset-building activities to help teens explore diversity*.

A Search Institute Publication.

Retrieved from: <file:///C:/Users/lenovo/Desktop/Make-A-World-of-Difference-50-Asset-Building-Activities.pdf>

Ed. PM. 538: School Management

Nature of Course: Theoretical

Course No: Ed. PM. 538

Credit Hours: 3

Level: M.Ed.

Teaching Hours: 48

Semester: Third

1. Course Description

This course is designed to provide the students with the recent approaches to managing public/community schools. This course specifically deals with theoretical and practical perspectives of school-based management and enriches the student's understanding of improving school effectiveness. The course also deals with school emergency management plans. Through experiential exercises, the students gain insight into practical know-how of school-based management.

2. General Objectives

The general objectives of this course are as follows:

- To enable the students to understand the theoretical premises and sources that shaped and reshaped school-based management (SBM).
- To provide the students with a better understanding of experiences of selected countries with SBM and draw implications for improving SBM in Nepal.
- To enable students to develop insight into improving school effectiveness, and
- To familiarize the students with the school emergency management plan.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Clarify the meaning and definition of school-based management and self-managing schools • State the objectives and characteristics of SBM • Elucidate the knowledge framework for the internal school process for SBM. • Elaborate on a conceptual framework for analyzing school-based management • Elaborate on the different models of SBM • Clarify Discourse on decentralization and devolution • Clarify SBM as micro-level management • Explain the experiences of application of SBM in developing countries 	<p>Unit 1: School-Based Management (SBM): Theoretical Perspective (13)</p> <p>1.1 Concept of SBM and self-managing schools</p> <p>1.2 Objectives of SBM</p> <p>1.3 Characteristics of SBM</p> <p>1.4 New vision of SBM: A knowledge framework for the internal school process</p> <p>1.5 A Conceptual framework for analyzing School-Based Management</p> <p>1.6 Models of SBM</p> <p> 1.6.1 Administrative-control SBM</p> <p> 1.6.2 Professional-control SBM</p> <p> 1.6.3 Community-control SBM</p> <p> 1.6.4 Balanced-control SBM</p> <p>1.7 Discourse on decentralization and devolution</p> <p>1.8 SBM as micro-level management</p> <p>1.9 Applications of SBM in developing countries</p>
<ul style="list-style-type: none"> • Shed light on challenges of SBM in the present context 	<p>Unit II: Challenges of SBM in New Era (6)</p> <p>2.1 New educational paradigm</p> <p>2.2 Tri-polarization in education (Globalization,</p>

<ul style="list-style-type: none"> • Explain the influences of tri-polarization in education on SBM 	Localization and Individualization) 2.2.1 New paradigm of learning 2.2.2 New paradigm of schooling
<ul style="list-style-type: none"> • Shed light on the significant experience of Canada, Hong Kong (China), The United Kingdom, The United States of America and Australia • State the Australian SBM practice with special reference to its implementation in Victoria state • Explore and present how SBM is being practiced in Nepal 	Unit III: Experiences of Selected Countries with SBM (12) 3.1 Concise experiences of Canada, Hong Kong (China), The United Kingdom, The United States of America and Australia 3.1.1 Australian SBM as 'Schools of the Future' 3.1.2 Dimensions of 'Schools of the Future' 3.1.3 The School Charter 3.2 SBM in the context of Nepal: Community Managed schools
<ul style="list-style-type: none"> • Clarify the concept of 'school effectiveness' • Differentiate between school effectiveness and school efficiency • Explain four theoretical views on organizational effectiveness and draw implications for community schools of Nepal • Describe enhancing conditions of schooling for improving school effectiveness • Explain the concept with its types of 'School self-evaluation' 	Unit IV: Improving School Effectiveness (12) 4.1 Concept of school effectiveness 4.2 Distinction between school effectiveness and school efficiency 4.3 Theoretical views on organizational effectiveness 4.3.1 Economic rationality 4.3.2 The organic system model 4.3.3 The human relations approach 4.3.4 The bureaucracy 4.4 Effectiveness-enhancing conditions of schooling 4.5 Concept of school self-evaluation 4.6 Types of school self-evaluation 4.7 Choice of criteria to assess organizational effectiveness
<ul style="list-style-type: none"> • Clarify the concept school emergency management plan • Elaborate the types of emergency management plan • 	Unit V: School Emergency Management Plan (5) 5.1 Concept of school emergency management plan (fire, lightning, flood, earthquake, storm, etc.) 5.2 Types of the emergency management plan 5.2.1 Evacuations 5.2.2 Relocation 5.2.3 Isolation 5.2.4 Expansion 5.3 Eemergency management planning and preparation
<ul style="list-style-type: none"> • Prepare the framework for emergency management planning. 	

Note: The number within parenthesis indicates the approximate teaching hours allocated to respective unit.

4. Instructional Techniques

General as well as specific instructional techniques are used while teaching this course. The general instructional techniques are applicable to all units, where as specific instructional techniques are applicable to the particular units.

4.1 General Instructional Techniques

- Multi-media projector
- Lecture
- Discussion
- Question- answer
- Brain storming exercises
- Participatory interactive classroom activities

4.2 Specific Instructional Techniques

To promote experiential learning in this course, following specific instructional techniques are recommended for selected units to ensure students' active participation in teaching-learning process and make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
Unit I : School-Based Management (SBM): Theoretical Perspective	<ul style="list-style-type: none"> • Form pairs of students to study comparatively about the educational output of community managed schools and non community managed schools • Let them prepare brief reports and present them in the class and discuss.
Unit II : Challenges of SBM in New Era	<ul style="list-style-type: none"> • Study the challenges of SBM in Nepalese community school and have discussion in the classroom with participatory and interactive way to draw the conclusion
Unit III : Experiences of Selected Countries with SBM	<ul style="list-style-type: none"> • Form pairs of students to prepare a comparative view of SBM in different countries and to find out successful cases • Let them present the paper in the class and discuss to find out implications for Nepal • Form pairs of students to study the management of community/ public schools to analyze them from the SBM perspective. • Let them prepare brief reports and present them in the class and discuss.
Unit IV: Improving school effectiveness	<ul style="list-style-type: none"> • Form pairs of students to develop self-evaluation tools and administer them in public schools • Let them prepare brief reports and present them in the class • Let the class discuss after presentation of the report
Unit V: School Emergency Management Plan	<ul style="list-style-type: none"> • Form pairs of students to study the status of school emergency management plan in school • Write a report to suggest the stakeholder to promote school emergency management plan.

5. Evaluation

5.1 Internal Evaluation 40%

The concerned teacher will carry out the internal evaluation of the students based on the following criteria.

1. Class attendance	05 marks
2. Participation in learning activities	05 marks
3. First assignment/assessment (Paper writing and presentation)	10 marks
4. Second assignment/assessment (Mid-term class test)	10 marks
5. Third assessment (Class test)	10 marks

Total **40 Marks**

5.2 External Evaluation (Final Examination) 60%

Examination section, Dean's Office, Faculty of Education will conduct final examination at the end of the semester. The number of items in each category of question and distribution of points to be included in the final examination paper are as follows:

1. Objective type questions (10 Multiple Choice questions 10 x 1 mark)	10 marks
2. Short answer questions (6 questions with 2 Choice 6 x 5 marks)	30 marks
3 Long answer questions (2 questions 1 Choice 2 x 10 marks)	20 marks

Total **60 Marks**

6. Recommended Books and References

6.1 Recommended Books

- Abu-Duhou, I. (1999). *School-based management*. Paris: International Institute for Educational Planning. (Unit III)
- Barrera-Osorio, F., Fasih, T., Patrinos, H. A. & Santibanez, L. (2009). *Decentralized decision-making in schools: The Theory and Evidence on School-Based Management*. Washington DC: The World Bank. (Unit II)
- Caldwell, B.J. (2010). *School-based management*. Paris: International Institute for Educational Planning. (Unit II)
- Patricia, G. (1994) *School based management: theory and practice*. Virginia: National Association of Secondary School Principals. (Unit I & V)
- Nova Scotia Department of Education. (2008). *School emergency management plan - planning guide*. Halifax, N.S.: Nova Scotia Department of Education (Unit V)
- Scheerens, J. (2000). *Improving school effectiveness*. Paris: International Institute for Educational Planning. (Unit IV)
- Townsend, T. (1997) *Restructuring and quality: Issues for tomorrow's schools*. New York: Routledge. (Unit I and III)
- The World Bank. (2007). *What is school-based management*. Washington D.C.: Author. (Unit I)
- Volansky, A & Friedman I. A. (2003). *School-based management an international perspective*. Israel: Ministry of Education, Devora Ha-Niviah (Unit I& V)

6.2 References

- By Lori Jo Oswald, L. J. (1995). School-based management. ERIC Digest 99 July 1995. Retrieved from <https://scholarsbank.uoregon.edu/xmlui/bitstream/handle/1794/3320/digest099.pdf?sequence=1>
- Wohlstetter, P. and Briggs, K. L. (1994). The principal's role in school-based management. School Leadership. Retrieved from <https://www.usc.edu/dept/education/cegov/focus/leadership/publications/journals/The%20Principal's%20Role%20In%20School-Based%20Management.pdf>

Ed. PM. 539: Social Justice Education

Course No: Ed. PM. 539
Level: M Ed.
Semester: Third

Nature of course: Theory
Credit Hours: 3
Teaching Hours: 48

Theoretical part**1. Course Description**

This course is designed to assist potential educators in understanding, appreciating, and practicing the essence of social justice in real-life situations. It also intends to generate a multiplier effect of social justice education extending from the master's level classroom to the realities of the households. It will assist students in familiarizing themselves with the issues of social justice by exploring their own assumptions and beliefs.

The students are supposed to identify not only the local social justice issues but also relate and explore them at the national and international context. In this sense, the course intends to help the students situate themselves in the lived reality and connect with the macro environment around them with a critical perspective.

2. General Objectives

The general objectives of the course are as follows:

- To enable students to identify the theoretical concept of social justice.
- To acquaint students with the issues of liberty and citizenship related to social justice.
- To prepare students to explore and address distributive justice as a social justice demand.
- To provide students with the knowledge and use of theoretical foundations of social justice education.
- To explore and suggest ways to address the issues and challenges of social justice education in Nepal

3. Course Outlines

Specific Objectives	Contents
<ul style="list-style-type: none"> • Describe the concept of justice and social justice • Explain evolution of social justice • State the circumstances of justice delivery • Identify the subject of justice • Explain moral theory and role of justice • State institutional and formal justice • Explain tendency of equality • Define veil of ignorance and classical utilization of justice 	<p>Unit I: Theoretical Concept of Social Justice (10)</p> <p>1.1 Concept of justice and social justice 1.2 Evolution of social justice 1.3 Circumstances of justice 1.4 Subject of justice 1.5 Role of justice 1.6 Institutional and formal justice 1.7 Tendency of equality 1.8 Veil of ignorance</p>
<ul style="list-style-type: none"> • Explain the concept of liberty and citizenship • Define equal liberty and equity/consumption • Describe the meaning of political justice and the constitution • State justice as fairness from the Kantian interpretation • Draw the principles of morality 	<p>Unit II: Liberty and Citizenship (8)</p> <p>2.1 Concept of liberty and citizenship 2.2 Political justice and the constitution 2.3 Kantian interpretation of Justice as Fairness 2.4 Morality of principles</p>
<ul style="list-style-type: none"> • Describe the concept of justice in political economy • Explain the concept of institutions for 	<p>Unit III: Distributive Justice as a Demand (10)</p> <p>3.1 Concept of justice in political economy</p>

<p>distributive justice</p> <ul style="list-style-type: none"> • Define the principles and approaches of natural duty, voiced and social justice • State the role of institutions and persons • Explain closed, open and plurality of impartiality reasons. 	<p>3.2 Institutions for distributive justice 3.3 Principles of natural duty 3.4 Approaches to Justice 3.5 Voiced and social justice 3.6 Institutions and persons 3.7 Closed and open impartiality 3.8 Plurality of impartial reasons</p>
<ul style="list-style-type: none"> • Identify pedagogical framework for social justice education • Explain education as a conservative force to change for social justice • Define education a transformative and reformatory force for social justice • Define curricular role for social justice • State pedagogical role for social justice in classroom practice and inclusive participation of students • State the co-curricular and extra- curricular role of social justice 	<p>Unit IV: Practices in Social Justice Education (10)</p> <p>4.1 Pedagogical framework and role for social justice education 4.2 Education as a force to change for social justice</p> <p>4.2.1 Conservative 4.2.2 Transformative 4.2.3 Reformatory</p> <p>4.3 Curricular role for social justice: 4.4 Pedagogical role for social justice 4.5 Co-curricular and Extra -curricular role for social justice</p>
<ul style="list-style-type: none"> • Define and differentiate equality, equity and inclusion of social justice education in Nepal • Critique the causes of domestic violence and analyze right based social movements of women, children, elderly people, Dalits, deprived people, religious and language minorities group, special needs people and indigenous people. 	<p>Unit V: Issues and Challenges of Social Justice Education in Nepal (10)</p> <p>5.1 Equality 5.2 Equity 5.3 Inclusion 5.4 Challenges to address: Domestic violence -Human rights- based movements: Women, gender, Children, Elderly people, Dalit, Deprived people, Religious and Language minority groups, Special needs people and Indigenous people.</p>

Note: The number within parenthesis indicates the approximate teaching hours allocated to respective unit.

4. Instructional Techniques: General as well specific instructional techniques has been suggested to deliver the contents in the classroom and to carry out experiential exercises. Here is a brief account of these techniques:

4.1 General Instructional Techniques

- Lecture
- Discussion
- Question-answer
- Project work
- Demonstration
- Individual study
- Teacher guided study group/ peer work
- Assigning the class work
- Seminar

- Classroom exercise
- Guided individual study
- Tutorial support on the difficult content
- Independent study
- Project work

4.2 Specific Instructional Techniques

To promote experiential learning in this course, following specific instructional techniques are recommended for selected units to ensure students' active participation in teaching-learning process and make the teaching-learning research-oriented.

Units	Specific instructional techniques
Unit I: Theoretical Concept of Social Justice	Divide the class into groups of four or five students. Let them do a simulation exercise to review the Theory of Justice Revised edition Chapter I, II and III written by John Rawls and discuss in class.
Unit II: Liberty and Citizenship	Divide the class into groups of four or five students. Let them do a simulation exercise to review the Theory of Justice Revised edition Chapter V, and VIII written by John Rawls and discuss in class
Unit III: Distributive Justice as a Demand	Divide the class into groups of four or five students. Let them do a simulation exercise to review the book The Idea of Justice PART I and II written by Amartya Sen and discuss in class.

Unit IV: Theoretical foundations of social justice education	<p>Experiential Exercises</p> <p>Form pairs of students to prepare a comparative view on theoretical foundations of social justice education. Let them present the paper in the class and discuss and compare the different types of justice.</p> <p>Form pairs of students to study the different types of social justice and let them prepare brief reports and present them in the class and discuss.</p>
Unit V: Issues and challenges of social justice education in Nepal	<p>Experiential Exercises</p> <p>Form pairs of students to draw issues and challenges of social justice education in Nepal. Let them prepare brief reports to come up with ways to address the challenges resulting from social justice movements and human rights of different groups. Let the class discuss after presentation of the report.</p>

5. Evaluation Scheme

5.1 Internal Evaluation

(40 %)

The concerned teacher will carry out the internal evaluation of the students based on the following criteria.

1. Attendance	5. 00 Marks
2. Participation in learning	5. 00 Marks
3. First assignment/assessment	10.00 Marks
4. Second assignment/assessment	10.00 Marks
5. Third assessment	10.00 Marks

Total	40 Marks
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5.2. External Evaluation (Final Examination) (60%)

5.2.1 Examination section, Dean's Office, Faculty of Educational will conduct final examination at the end of the semester. The number of items in each category of question and distribution of points to be included in the final examination paper are as follows:

1. Objective type questions (10 Multiple choice questions x 1)	10 Marks
2. Short answer questions (6 questions with 2 choice x 5)	30 Marks
3. Long answer questions (2 questions with 1 choice x 10)	20 Marks

Total	60 Marks
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Recommended Books and Reference Materials

- Adams, M. (1997). *Pedagogical Frameworks for Social Justice Education*. In Teaching for Diversity and Social Justice. (Edit. Adams, Maurianne, Bell, Lee Anne and Griffin, Pat) New York: Routledge.
- Bell, L. A. (1997). *Theoretical Foundations for Social Justice Education*. In Teaching for Diversity and Social Justice. (Edit. Adams, Maurianne, Bell, Lee Anne and Griffin, Pat) New York: Routledge.
- Dumont, L. (1980). *Homo Hierarchicus: The Caste System and its Implications*. Chicago: The University Press.
- Freire, P. (1970). *Pedagogy of the Oppressed*. New York: Seabury Press
- ILO Conventions: No.29 –*Forced Labor Convention* (1930), No. 87- *Freedom of Association and Protection of the Rights to Organize* (1948), No.98- *Right to Organize and Collective Bargaining Convention*

(1949), No.100- *Equal Remuneration Convention* (1951), No.105- *Abolition of Forced Labor Convention* (1957), No.111- *Discrimination Employment and Occupation Convention* (1958), No.138 –*Minimum Age Convention* (1973) and No.182- *Worst Forms of Child Labor Convention* (1999).

Jill, A. & Ernie, S. (2002). *Indigenous Knowledge, Indigenous Learning, Indigenous Research*. In What is Indigenous Knowledge: Voices from the Academy (edited by Ladislaus M. Semali and Joe L. Kincheloe). New York: Falmer Press.

John, R. (1999). *A Theory of Justice* (Revised Edition) .Cambridge: The Belknap Press of Harvard University Press.

Mahajan, G. (1998) (edit). *Democracy, Difference and Social Justice*. New Delhi: Oxford University Press.

Sen., A. (2009). *The Idea of Justice*. Cambridge: The Belknap Press of Harvard University Press.

United Nations (2006). *Social justice in an open world: The role of United Nations*. New York: United Nations.

Population Education

Pop. Ed. 535: Technology of Teaching Population Education

Course No. : Pop. Ed. 535

Level: M.Ed.

Semester: Third

Nature of Course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Description

This course is designed to acquaint the students with educational technology, instructional designs, innovative teaching approaches and communication in teaching population education. It also intends to enable the students to develop skills in designing, selecting and using appropriate teaching materials and media in teaching population education.

2. General Objectives:

The general objectives of this course are as follows:

- To acquaint the students with education technology, innovative instructional designs and approaches in teaching population education.
- To make them able to select appropriate approaches and materials/media for classroom teaching.
- To enable the students to apply those innovative teaching strategies and materials in the teaching situation.
- To acquaint the students with information, communication and technology (ICT) in teaching population education.

3 Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Differentiate between educational and instructional technology. • Discuss the scope and educational advantage of educational technology. • Apply different types of instructional designs in teaching population education. 	<p>Unit I: Educational Technology and Instructional Designs in Population Education (12)</p> <p>1.1 Difference between educational and instructional technology</p> <p>1.2. Scope and advantage of educational technology</p> <p>1.3 Instructional designs</p> <p>1.3.1 Objective based</p> <p>1.3.2 Skill based</p> <p>1.3.3 Competency based</p> <p>1.3.4. Learning-style based</p> <p>1.3.5. Model based</p>
<ul style="list-style-type: none"> • Apply different modern teaching strategies in classroom situation • Implicate modern approaches in teaching population education. • Explain roles and strategies of experiential learning in population education • Discuss application of innovative strategies in population education class 	<p>Unit II: Approaches of Teaching Technologies (15)</p> <p>2.1 Modern Teaching strategies in population education (concept, components, strategies, implication)</p> <p>2.1.1 Direct Instruction (lecture, drill & practice, demonstrations, didactic questioning, etc.)</p> <p>2.1.2 Indirect Instruction (problem solving, case studies, inquiry, reflective discussion, etc.)</p> <p>2.1.3 Experiential Learning (field trips, experiments & simulations, storytelling,</p>

<ul style="list-style-type: none"> • Apply peer and life skill approach to population education in school setting • Explain the importance of distance mode approach in population education 	<p>role-playing, etc.)</p> <p>2.1.4 Independent Study (essays, journals & reports, homework, assignments etc.)</p> <p>2.1.5 Interactive Instruction (debates, brainstorming sessions, cafeteria sessions, interviewing, conferencing, collaborative learning, etc.)</p> <p>2.1.6 Innovative strategies (Workshop, seminar, critical thinking, problem-based learning (PBL)</p> <p>2.2 Approaches of teaching population education</p> <p>2.2.1 Peer approach</p> <p>2.2.2 Life skills approach</p> <p>2.3 Distance mode approach</p> <p>2.3.1 E- learning</p> <p>2.3.2 D- learning</p> <p>2.3.3 O- learning</p>
<ul style="list-style-type: none"> • Discuss the concept and type of communication • Explain the essentials of effective communication in population education • Discuss the barriers in population education communication. • Conceptualize various aspects of diffusion theory of communication. • Highlight the behaviour change communication (BCC) • Discuss social marketing theory of communication • Plan communication process in population education. 	<p>Unit III: Communication Process in Population Education (9)</p> <p>3.1 Concept, and type of communication</p> <p>3.2 Essentials of effective communication in population education</p> <p>3.3 Barriers in population education communication</p> <p>3.4 Diffusion theory of communication</p> <p>3.5 Behaviour change communication (BCC)</p> <p>3.6 Social marketing theory of communication</p> <p>3.7 Communication planning process in population education</p>
<ul style="list-style-type: none"> • Explain the principles of selecting teaching materials and media in population education. • Use different types of ICTs in teaching population education. • Prepare and use different teaching aids in population education. • Illustrate the importance of Edgar Dale's cone of experience in teaching population education. 	<p>Unit IV: Teaching Materials and Media in Population Education (6)</p> <p>4.1 Principles of selecting teaching materials and media for population education</p> <p>4.2 Use of ICTs in teaching population education</p> <p>4.2.1 Electronic materials</p> <p>4.2.2 E-library</p> <p>4.2.3 Television</p> <p>4.2.4 Social sites</p> <p>4.2.5 Moodle</p> <p>4.2.6 Online conference</p> <p>4.3 Application of Edgar Dale's cone of experience in teaching population education</p>
<ul style="list-style-type: none"> • Review population education 	<p>Unit V: Curriculum Analysis in Population</p>

curriculum of school level of Nepal. • Analyse existing curriculum of population education in school and higher education level.	<p style="text-align: center;">Education (6)</p> 5.1 Review of school curriculum on Population Education and Health, Population and Environment Education 5.2 Critical Analysis of existing population education curriculum (Secondary and B. Ed.)
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Note: The figures in the parenthesis indicate the approximate periods for the perspective units

4. Instruction Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Lecture
- Document review
- Discussion
- Collaborative works/learning
- Brainstorming
- Presentation
- Guest speech
- Project work
- Collaborative learning
- Interaction
- Research based learning activities

4.2 Specific Instructional techniques

Units	Activity and instructional technique
I	Students will be asked to review the meaning and importance of educational technology and prepare individual notes on the concept, objectives and importance of educational technology. They will also be asked to analyse different learning theories applied to teaching technology especially in population education. Teacher will explain whenever necessary.
II	The students will be divided into different groups to apply different teaching strategies and approaches in teaching health education. The group leaders will present collections and organize interaction session. The teacher will explain and demonstrate the newly introduced teaching strategies.
III	The teacher will describe the concept, need and importance of communication in teaching population education and she will also explain different methods and types of communication in teaching population education. The students will be asked to apply communication models in teaching population education. Discussion sessions will be organised to ensure to plan communication process in population education.
IV	The teacher will explain need and importance of teaching materials and media in

	population education teaching. The students will be asked to collect and prepare different ICT materials which can be applied in teaching population education.
V	Students will be asked to collect curriculum of population education of different levels. They will also be asked to review that curriculum in terms of objectives, contents and their relevancy.

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by the subject teachers based on the following aspects:

S.N	Particular	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test, etc.	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/case study/field study/survey/seminar/workshop	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Section, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

S.N	Types of question	Marks
1	Objective type questions (Multiple choice questions 10x1 mark)	10
2	Short answer questions (6 questions with 2 OR questions x 5 marks)	30
3	Long answer questions (2 questions with one OR questions x 10 marks)	20
Total		60

6. Recommended books and references

6.1 Recommended Books

- Acharya, K.P & Adhikari, B.K. (2014). *Modern approaches in health education*. Kirtipur: Dixant Publication (I-v)
- Aggrawal, J.C. (1999). *Principles, methods & techniques of teaching*. New Delhi: Vikas Publishing House Pvt. Ltd. (For Unit I)
- Hubley, John (1993). *Communicating health: An action guide to health education and health promotion*. Malaysia: Macmillan Education Limited. (For Unit III)
- Kumar, K.L. (1996). *Educational technology*. New Delhi: New Age International (P) Ltd. (For Unit I)
- Mangal, S. K. & Mangal, U. (2009). *Essential of educational technology*. New Delhi: PHI Learning Limited. (For Unit I, II & IV).
- Mudwari, N. (2068 B.S.). (Nepali) *Modern approaches in health education*. Kathmandu: Jupiter Publisher and Distributors, (For Unit I, II, III & IV).

- Park, K. (2009). *Park's textbook of preventive and social medicine (20th ed.)*. Jabalpur, India: M/s Banarsidas Bhanot Publishers. ***For Unit III.***
- Ramachandran, L. & Dharmalingham, T. (2004). *Health education: A new approach*. New Delhi: Vikash Publishing House Pvt. Ltd. (***For Unit III***)

6.2 References

- Sampath, K., Panneerselvam, A. & Santhanam, A. (2000). *Introduction to educational technology (4th edit.)*
New Delhi: Sterling Publishers Pvt. Ltd.
www.ai-media.tv/
www.scalelive.com/education.html

Pop. Ed. 534: Contemporary Issues in Population Education

Course No.: Pop. Ed. 534

Level: M.Ed.

Semester: Third

Nature of Course: Theory+Practical

Credit hours: 3(2 Th. and 1 Pr.)

Teaching hour: 64 (Th: 32, Pr: 32)

1. Course Description

This course has been designed to equip the students with in-depth knowledge on issues and challenges of population. It emphasizes on enhancing their skills for identifying related literature, writing seminar papers in concern issues and challenges and organize a seminar.

2. General Objectives

The general objectives of the course are as follows

- To make the students familiar with identification of resources materials in related issues and challenges.
- To acquaint the students with global population issues and challenges related to overgrowth of population, growth of aged population, environmental issues, adolescents of sexuality and health related issues.
- To help students develop skills in reviewing literature and peer review.
- To enable the students to write a seminar papers and presents in a seminar.
- To make the students develop skills in conducting a seminar.
- To enable the students supply comments on peer's papers and presentation skills.
- To help the students edit the seminar paper after getting feedbacks

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Delineate the impacts of urban migration in different aspects like health service, transpiration, water supply, housing etc. • Discuss the issues of labor migration, force migration, and internal displacement. • Elucidate the situations and problems of slums, street children, human trafficking and suggest their management. • Discuss uneven spatial distribution of population • Discuss tobacco, alcohol and drug abuse • Explain Dowry system and domestic violence • Describe Chhaupadi and witchcraft • Highlight social security. 	<ol style="list-style-type: none"> I. Social issues related to growth of population (12) <ol style="list-style-type: none"> 1.1 Urban migration/Unmanaged migration 1.2 Labor migration 1.3 Force migration 1.4 Internal displacement 1.5 Slums 1.6 Street children and their rehabilitation 1.7 Human trafficking 1.8 Uneven spatial distribution of population 1.9 Tobacco, alcohol and drug abuse 1.10 Dowry system and domestic violence 1.11 <i>Chhaupadi</i> and witchcraft 1.12 Social security

<ul style="list-style-type: none"> • Assess the situation of senior population of developed and developing countries including SAARC countries. • Discuss the social and economic issues of growth of senior population. • Express the social, psychological and health problems of seniors and suggest measures to manage their problems. • Identify the issues in utilization of health services among senior citizens. • Analyze the issues of children's migration and its impact on citizens left behind. 	<p>II. Senior Citizen's Population (8)</p> <p>2.1 Situation of elderly people in developed and developing countries including SAARC countries</p> <p>2.2 Social and economic issues of growing senior citizens</p> <p>2.3 Problems of senior citizens (Social, physical and mental health)</p> <p>2.4 Health service utilization among senior citizens</p> <p>2.5 Children's migration and its impact on senior citizens left behind</p>
<ul style="list-style-type: none"> • Analyze the changes of population and its impacts on environment especially on natural resources. • Delineate the causes of climate change, global warming and green house effects, acid rain and their impacts. • Find out the issues of deterioration of drinking fresh water, natural disaster and deforestation and suggest their management 	<p>III. Population and environment (8)</p> <p>3.1 Changes in population and its impact on environment and natural resources</p> <p>3.2 Climate change</p> <p>3.3 Global warming effects</p> <p>3.4 Green house effects</p> <p>3.5 Acid rain</p> <p>3.6 Scarcity of drinkable water</p> <p>3.7 Deforestation</p> <p>3.8 Natural disaster (Flood, Landslide, desertification and wildfire)</p>
<ul style="list-style-type: none"> • Analyze the perception of people regarding adolescence sexuality education. • Describe adolescent-friendly reproductive health services. • Discuss the impacts of risky sexual behavior, early marriage, force marriage, teenage pregnancy, pre-marital and extra marital sex, commercial sex works and their impacts. • Explain the situation and problems of LGBTIQ+ and suggest their management. • Highlight the situation of unsafe 	<p>IV. Human Sexuality (10)</p> <p>4.1 Adolescence sexuality education</p> <p>4.2 Adolescent-friendly reproductive health services</p> <p>4.3 Risky sexual behaviour</p> <p>4.4 Early marriage/Child marriage, forced marriage and teenage pregnancy</p> <p>4.5 Pre-marital and extramarital sex and their impacts</p> <p>4.6 Sexual exploitation/sexual harassment</p> <p>4.7 LGBTIQ+</p> <p>4.8 Unsafe abortion and its impacts</p> <p>4.9 Commercial sex</p>

<p>abortion, impacts of induced abortion and their management.</p> <ul style="list-style-type: none"> Analyze the legal aspects on sexuality living together and surrogacy etc. 	<p>4.10 Legal aspects on sexuality 4.11 Living together 4.12 Surrogacy</p>
<ul style="list-style-type: none"> Analyze the situation of Health in All Policy in Nepal. Highlight the issues of newly emerging and resurgent communicable Describe non-communicable disease. Discuss the issues of health policy. Explore the problems MCH service in the country and suggest the measures to promote. Highlight the issues of health insurance. Discuss immunization and nutrition issues in the context of Nepal. 	<p>V. Health Service (10)</p> <p>5.1 Health in All Policy (HiAP) 5.2 Newly emerging and resurgent communicable disease 5.3 Non communicable diseases (Hypertension, diabetes and cancer) 5.4 National health policy 5.5 Health facilities and services in rural areas 5.6 Maternal and child health care 5.7 Health insurance 5.8 Immunization 5.9 Nutrition</p>

Note: The figures in the parenthesis indicates the approximate periods for the perspective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units.

4.1 General Techniques

- Discussion
- Brain storming
- Cooperative Learning
- Independent study
- Presentation

4.2 Specific Instructional Techniques

Activities
<ul style="list-style-type: none"> • Discussion and clarification of issues • Discussion about sources of learning materials • Identifying concern issues in libraries and websites.
<ul style="list-style-type: none"> • Discussion of concept of seminar and its procedure • Clarification about ways of preparing seminar papers • Distribution of issues/assignments for seminar paper

<ul style="list-style-type: none"> • Visiting libraries and websites to identify related materials • Collection of information • Reviewing documents • Writing papers
<ul style="list-style-type: none"> • Printing papers and distribution to the peers for making comments • Organizing seminar • Presentation of paper by individual • Collecting feedbacks • Editing papers
<ul style="list-style-type: none"> • Evaluation of seminar papers by internal teachers • Viva by external examiner

(Note: All assignments done by the students should be signed by the internal teacher and these should be submitted to the external examiner)

5. Evaluation

5.1 Internal Evaluation 40%(25) of 65 theory portion

Internal evaluation will be conducted by subject teachers based on following aspects:

SN	Particular	Points
1	Attendance	2
2	Participation in learning activities	3
3	First assessment /midterm examination	10
4	Second assessment/term paper	10
Total		25

5.2 External Examination (Final Examination) 60% (40) of 65 theory portion

Examination section, Office of the Dean, Faculty of Education will appoint the external examiner at the end of semester. Both internal and external examiners will give the marks as follows

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

- | | |
|---|-----------|
| 1) Objective type question (Multiple choice 10 x 1points) | 10 Points |
| 2) Short answer questions (6 questions x 5 points with 2 or questions) | 30 Points |

Total	40 points
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5.2 Internal Evaluation 40% (15) of Practical portion(From Internal)

Internal evaluations will be conduct by course teacher based on following activities.

1. Attendance	2 marks
2. Visiting libraries and websites to identify related materials	3 marks
3. Reviewing journals, reports and other references books	
4. Reporting Writing	5 marks
5. Presentation of draft seminar report	5 marks
Total	15 marks

5.3 Practical examination (From External)

20

S.N	Types of question	Points
1	Quality of Seminar paper	10
2	Seminar Presentation	5
3	Viva Voce	5
Total		20

6. References

- Adhikari, R. (2010). *Are Nepali students at risk of HIV? A cross-sectional study of condom use at first sexual intercourse among college students in Kathmandu*. Journal of the International AIDS Society 2010, 13:7 <https://onlinelibrary.wiley.com/doi/abs/10.1186/1758-2652-13-7>
- Adhikari, R and Tamang J. (2009). *Premarital sexual behavior among male college students of Kathmandu, Nepal*. BMC Public Health 2009, 9:241 <http://www.biomedcentral.com/1471-2458/9/241>
- Adhikari, R. (2015). *Prevalence and Correlates of Sexual Risk Behaviors among Nepalese Students*. Social Science Asia. Vol. 1 (4): pp 38-50. DOI: 10.14456/ssa.2015.29. <http://www.socialscienceasia.nrct.go.th/index.php/SSAsia/article/view/72>
- Adhikari, R. and Sawangdee Y (2011). *Influence of women's autonomy on infant mortality in Nepal*. Reproductive Health 2011, 8:7 <http://www.reproductive-health-journal.com/content/8/1/7>
- Carrol, J. N. (2010). *Sexuality now: embracing diversity*. Belmont: Wadsworth Centage Learning cbs.gov.np/.../Chapter%20%20%20Status%20of%20Children%20in%20...
- Centers for Disease Control and Prevention
Division of Global Migration and Quarantine
dnetnepal.com/swedish/pdf/Air%20Pollution%20status%20nepal.pdf
feb.gov.np/.../Final%20Report%20-%20Submitted%20on%2028%20Ja...
<http://pub.iges.or.jp/modules/envirolib/upload/1508/attach/1ws-8-Joshi.pdf>
<http://www.geni.org/globalenergy/issues/global/population/index.shtml>
<http://www.thelongestwayhome.com/blog/nepal/street-children-in-kathmandu-nepal/>
- Maharjan, S.K. (2070). *Human sexuality and reproductive health*. Kathmandu: Sunlight Publication.

Shrestha, D. R. (2008). *Reproductive health: national and international perspective*. Dhulikhel: Narayan Devi Shrestha.

<http://www.cdc.gov/immigrantrefugeehealth/pdf/bhutanese-health-profile.pdf> March 20, 2014,

Ministry of Population and Environment (2000). State of the Environment Report, Nepal

National Center for Emerging and Zoonotic Infectious Diseases

Nepal Demographic Health Survey (2011). Kathmandu: MoHP

nhrc.org.np/files/download/67938b3f9818700

Shrestha B. Air pollution status. Kathmandu: **Institute of medicine, Tribhuvan University**

Shrestha, D.R (2008). *Reproductive health: national and international perspectives*. Dhulikhel: Narayan Devi Shrestha

UNID (2014). Nepal human development report.

Pop. Ed. 538: Applied Research in Population Education

Course No.: Pop. Ed. 538

Level: M. Ed.

Semester: Third

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Description

This course is designed to acquaint the students with the knowledge of applied research in population education and to enable them to conduct research on different issues of population education. The course will make students able in construct and administer tools and analyze and interpret the data and prepare the report.

2. General Objectives

The general objectives of this course are as follows:

- To provide the students with the knowledge on historical trend of population education research.
- To familiarize the students with different types of variables and measurement scales.
- To develop knowledge and skills on literature review.
- To provide the in-depth knowledge in systematic review on data base
- To provide knowledge on sampling procedure in population research
- To provide knowledge and skills to construct and use of different research tools in population education research.
- To develop the skills in using basic statistics for research and analyze data.
- To make the students able in developing the research report.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the trend of population education research. • Describe the types of research used in the population education. • Differentiate between quantitative, qualitative and mixed methods. • Discuss the variables and measurement scales. 	<p>Unit I: Research in Population Education (7)</p> <p>1.1 Historical trend of population education research</p> <p>1.2 Review the types of research used in population education</p> <p style="padding-left: 20px;">1.2.1 Descriptive method</p> <p style="padding-left: 20px;">1.2.2 Exploratory method</p> <p style="padding-left: 20px;">1.2.3 Analytical method</p> <p style="padding-left: 20px;">1.2.4 Longitudinal and cross-sectional method</p> <p>1.3 Quantitative, qualitative and mixed methods</p> <p>1.4 Variable and measurement scale</p>
<ul style="list-style-type: none"> • Highlight the need of literature review. • Describe the guidelines of literature review. • Explain the systematic review on data base. • Use internet for literature. • Discuss the format of bibliography/references. 	<p>Unit II: Reviewing the Literature (6)</p> <p>2.1 Need of literature (theoretical and empirical) review.</p> <p>2.2 Guidelines for literature review.</p> <p>2.3 Systematic review on data base (Pubmed, Biomed, Medline, Scopus,</p>

	<p>Science Direct HINARI etc.)</p> <p>2.4 Format of presenting the literature review</p> <p>2.5 Format of presenting Reference</p>
<ul style="list-style-type: none"> • Calculate the sample size. • Explain the errors and biases in sampling. • Describe the commonly use sampling techniques in population education research. 	<p>Unit III: Sampling Procedure in Population Research (6)</p> <p>3.1 Determination of sample size in both quantitative and qualitative research</p> <p>3.2 Errors and biases in sampling</p> <p>3.3 Major sampling techniques used in population education research</p>
<ul style="list-style-type: none"> • Develop and use of different research tools in population education. • Discuss the validation of research tools. • Explain the techniques of conducting interview and FDG. 	<p>Unit IV: Construction and Use of Different Research Tools in Population Education (8)</p> <p>6.1 Development of questionnaire, Interview-schedule, Observation guidelines and Focus group discussion guidelines</p> <p>6.2 Validation of research tools</p> <p>6.3 Techniques of conducting interview and FGD</p> <p>6.4 Simulation/mock practice</p>
<ul style="list-style-type: none"> • Explain the techniques of data processing and management. • Handle the computer software for quantitative data analysis (MS-excel and SPSS). • Compare and contrast uni-variate, bi-variate and multi-variate analysis. • Calculate the χ^2, and z-test, t-test and f-test. • Discuss the procedure of collecting and management of qualitative data • Explain the qualitative data analysis using computer software • Explain the techniques for maintaining research ethics • 	<p>Unit V: Data Management Analysis and Ethical Considerations (15)</p> <p>5.1 Data coding, entry and processing-including classification and tabulation</p> <p>5.2 Use of computer software (MS-excel and SPSS) in quantitative data analysis: Defining variable, inputting data, saving data, data analysis framework-dummy tables</p> <p>5.3 Uni-variate, bi-variate and multi-variate analysis</p> <p>5.4 Calculation of χ^2 test, t-test, z-test and F-test.</p> <p>5.5 Procedures of collecting and management of qualitative data: Recording and transcribing, translating, identifying themes/sub-themes, coding data, categorizing and organizing data by codes/themes and displaying data</p> <p>5.6 Concept of using computer software in qualitative data (Atlas ti, Nvivo)</p> <p>5.7 Ethics in population research</p> <p>5.7.1 Concept and importance of ethics in research</p> <p>5.7.2 Informed consent</p> <p>5.7.3 Plagiarism in research</p>

<ul style="list-style-type: none"> • Prepare an abstract and executive summary. • Explain the techniques of data interpretation. • Describe how to write findings and draw conclusion. • Prepare slides for presentation. • Use OHP or multimedia for presentation. 	<p>Unit VI. Translating Research into Practice (6)</p> <p>6.1 Writing an abstract and summary 6.2 Techniques of data interpretation 6.3 Findings and drawing conclusion 6.4 Preparation and presentation of findings through Multimedia</p>
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Note: The figures in the parenthesis indicate the approximate periods for the perspective units

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub units or content.

4.1 General Instructional Techniques

- Lecture
- Document review
- Discussion
- Collaborative works/learning
- Brainstorming
- Presentation
- Guest speech
- Project work
- Collaborative learning
- Interaction
- Research based learning activities

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<p>Research in Population Education</p> <ul style="list-style-type: none"> • The students will be asked to collect information about research and its importance in development and let them discuss and finalize in the group. Its copy will be distributed to students after editing. • The students will be asked to collect materials related to types of research methods and discuss in the group. • A guest lecture will be arranged to deliver topic regarding variables, and measurements scale.
II	<p>Reviewing the Literature</p> <ul style="list-style-type: none"> • The students will be given reading materials on some published articles to review them. They will also be asked to draw conclusions from the materials and submit as a home assignment. • The students will be given assignment to search literature in their interested topics though internet and discuss in the group.
III	<p>Sampling Procedure in population research</p> <ul style="list-style-type: none"> • The students will be asked to visit library or website to collect information on sampling and different formula to calculate sample size in quantitative research.

	<ul style="list-style-type: none"> • They will be asked to prepare a list about major sampling techniques used in population education (both quantitative and qualitative) research.
IV	Construction and use of different research tools in population education <ul style="list-style-type: none"> • The students will be asked to develop a survey form/questionnaire to collect information on their interested topic. • They will be asked to collect information at least from twenty people to draw ideas about the research on their interest.
VI	Techniques of Data Management and Analysis <ul style="list-style-type: none"> • The students will be asked to prepare code list of the collected information through survey tools. • The student will be given assignment to analyze the data using suitable statistical tools and present in the class.
VII	Translating Research into Practice <ul style="list-style-type: none"> • Students will be asked to review research reports and discuss in group. • Students will be assigned to prepare short report from the information collected by them. • They will be asked to present their short report in the class.

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by the subject teachers based on the following aspects:

S.N	Particular	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test, etc.	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/case study/field study/survey/seminar/workshop	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Section, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

S.N	Types of question	Marks
1	Objective type questions (Multiple choice questions 10x1 mark)	10
2	Short answer questions (6 questions with 2 OR questions x 5 marks)	30
3	Long answer questions (2 questions with one OR questions x 10 marks)	20
Total		60

6. Recommended books and references

6.1 Recommended Books

- Best, J. W. & Kahn, J. V. (2004). *Research in Education*. New Delhi: Prentice Hall of India **(For units I-VII)**
- Krishna Swami, O.R. (1993). *Methodology of research in social sciences*. Bombay: Himalaya Publishing House. **(For units- I, II, IV and V)**
- Kothari, C.R.(2002). *Research methodology*. New Delhi: Viswa Prakashan. **(For units- I-VII)**
- Pokharel, B.(2003). *Research methodology in economic*. Kathmandu: New Hira Books. **(For units II, VI and VII)**
- Ranjit Kumar (1999). *Research methodology*. New Delhi: Sage Publication. **(For units II)**
- Spiegel, N. R.(1980). *Theory and problems of probability and statistics*. New York: Mc.Graw Hill Book. **(For unit VII)**
- Trochim, W. M. (2003). *Research methods knowledge base*. Newyork: Atomic Dog Publishing. **(For units III, IV, V and VI)**
- Wolff, H. K. & Pant, P.R..(2007). *Social science research and thesis writing*. Kathmandu: Buddha academy publication. **(For units III, IV, VII)**

6.2 References

- Acharya, B. (2063). *Research methodology and report writing*. Kathmandu: National K. Book Centre.
- Banskota, S. (2004). *Research methodology*. Kathmandu: New Hira Books.
- Jnawali, D. (2008). *Research: Principles and Techniques*. Kathmandu: Vidyarthi Pustak Bhandar
- Khanal, P. (2065). *Educational research methodology*. Kirtipur: Sunlight Publication
- Khatri, B.B (2070). *Research and Statistics in Population Educaiton*. Kathmandu. Kriti Publication.
- Maharjan, R.M. et al. (2065). *Population studies, Part II*. Kirtipur: Sunlight Publication.

Pop. Ed. 539: Population of Nepal

Course No. : Pop. Ed. 539

Level: M. Ed.

Semester: Third

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Description

This course is designed to acquaint the students with the various characteristics of population in Nepal. Specifically, this course intends to enable the students in analyzing the basic population data with reference to population size, growth, composition, distribution, fertility, mortality and migration in Nepal. Activities such as seminar, report writing, presentation, review of literature etc. will be conducted under this course.

2. General Objectives of the Course

The general objectives of this course are as follows:

- To familiarize the students with the knowledge of population size, growth, composition and distribution.
- To make the students able to analyze the population data.
- To enable the students in utilizing demographic and socio-economic data in different situation.
- To equip the students with the knowledge and skills on population projection on the basis of past and present data.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> ▪ Explain the meaning and sources of population data. ▪ Discuss the types of sources of population data such a population census, vital registration system, sample survey and administrative records. 	<p>Unit I. Sources of Population Data in Nepal (8)</p> <p>1.1 Meaning and sources of population data 1.2 Types of sources of population data 1.2.1 Population census and operation 1.2.2 Vital registration system 1.2.3 Sample survey and operation 1.2.4 Administrative records 1.2.5 International publications (PRB and UN data)</p>
<ul style="list-style-type: none"> ▪ Discuss the size and growth rate of population in Nepal. ▪ Analyze the population distribution by ecological zones/province and rural urban areas. ▪ Analyze the population density by national, ecological zones and /province. ▪ Discuss the age and sex composition of population in Nepal. 	<p>Unit II. Population Characteristics of Nepal (10)</p> <p>2.1 Population size and growth rate 2.2 Population distributions 2.2.1 Ecological zones 2.2.2 Provinces 2.2.3 Rural urban areas 2.3 Population density 2.3.1 National situation 2.3.2 Ecological zones 2.3.3 Provinces 2.4 Age and sex composition (province level)</p>
<ul style="list-style-type: none"> ▪ Assess the level and trends of fertility in Nepal in-terms of CBR, ASFR, TFR and GFR. ▪ Assess the level and trends of mortality in Nepal in-terms of CDR, ASDR, IMR, MMR and U5MR. ▪ Analyze the trends of fertility, mortality and migration in Nepal. ▪ State the level and trends of internal and 	<p>Unit III. Demographic Characteristics of Nepal (10)</p> <p>3.1 Level and trends of fertility in Nepal (CBR, ASFR, TFR and GFR) 3.2 Level and trends of mortality in Nepal (CDR, ASDR, IMR, MMR and U5MR) 3.3 Level and trends of internal migration in Nepal 3.4 Level and trends of international migration in Nepal 3.5 Level and trends of SMAM in Nepal</p>

<p>international migration.</p> <ul style="list-style-type: none"> ▪ Discuss the level and trends of SMAM in Nepal. 	
<ul style="list-style-type: none"> ▪ Discuss the trend of religious composition of population in Nepal. ▪ Discuss the trend of lingual composition of population in Nepal. ▪ Explain the trend of caste and ethnical composition of population in Nepal. ▪ Describe the trend of educational composition of population in Nepal. ▪ Analyze the trend of religious, lingual and educational composition of population in Nepal. 	<p>Unit IV. Social Characteristics of Population (10)</p> <p>4.1 Religious composition of population and its trends</p> <p>4.2 Lingual composition of population and its trends</p> <p>4.3 Caste and ethnic composition of population and its trends</p> <p>4.4 Literacy rate and educational attainment and its trends</p>
<ul style="list-style-type: none"> ▪ Discuss the level and trends of urbanization in Nepal by ecological zones and province. ▪ Explain the level and trends of labour force. ▪ Discuss the level and trends of population by occupations. 	<p>Unit V. Economic characteristics (10)</p> <p>5.1 Level and trends of urbanization in Nepal</p> <p>5.2 Level and trends of urbanization by provinces and ecological zones</p> <p>5.3 Level and trends of labour force</p> <p>5.4 Level and trends of major occupations of population</p>

Note: The figures in the parentheses indicate the approximate teaching hours for the respective units.

4 Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Lecture
- Document review
- Discussion
- Collaborative works/learning
- Brainstorming
- Presentation
- Guest speech
- Project work
- Collaborative learning
- Interaction
- Research based learning activities

4.2. Specific Instructional Techniques

Units	Activities and Instructional Techniques
I	Review of books, population monograph, statistical year books, National planning reports, survey reports etc. and discuss on them. Conducting group work, report writing and presenting through seminar.
II	Review of books, population monograph, statistical year books, PPP report, survey reports etc. and discuss on them. Conducting group work, report writing and presenting within the class.
III	Review of books, population monograph, statistical year books, National planning reports, survey

	reports etc. and discuss on them. Conducting group work, report writing and presenting through seminar.
IV	Review of books, population monograph, statistical year books, National planning reports, survey reports etc. and discuss on them. Conducting group work, report writing and presenting within the class.
V	Review of books, population monograph, statistical year books, National planning reports, survey reports etc and discuss on them. Conducting group work, report writing and presenting within the class.

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by the subject teachers based on the following aspects:

S.N	Particular	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test, etc.	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/case study/field study/survey/seminar/workshop	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Section, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

S.N	Types of question	Marks
1	Objective type questions (Multiple choice questions 10x1 mark)	10
2	Short answer questions (6 questions with 2 OR questions x 5 marks)	30
3	Long answer questions (2 questions with one OR questions x 10 marks)	20
Total		60

6. Recommended books and references

6.1 Recommended Books

Barclay, G. W. (1953) *Techniques of population analysis*. New work: Wiley. **(Unit I-V)**

Bhende, A. & Kanitkar, T. (2006). *Principle of Population Studies*. Delhi: Himalayan Publishing House. **(Unit I-V)**

CBS, (2014). *Population Monograph of Nepal*. Central Bureau of Statistics. Kathmandu, Nepal. **(Unit I-V)**

K.C., Balkumar, et al., (1997). *Migration Situation in Nepal*, Kathmandu: CDPS. **(Unit III)**

PRB, (2014), *World Population Data Sheet* Washington D.C.: Population Reference Bureau. **(Unit I-V)**

PRB, (1998). *Population hand book*. Washington D.C.: Population Reference Bureau. **(Unit I-V)**

6.2 References

- Ministry of Health, Nepal; New ERA; and ICF (2017). Nepal Demographic and Health Survey 2016. Kathmandu, Nepal: Ministry of Health, Nepal.
- Ministry of Health, Nepal; New ERA; and ICF (2011). Nepal Demographic and Health Survey 2011. Kathmandu, Nepal: Ministry of Health, Nepal.
- Maharjan, S. K. and Khanal, S. P. (2069). *Fundamentals of Population Education*, Kirtipur: Quest Publication.
- Maharjan, R. K., et al., (2069). *Population studies, part-I & II*. Kirtipur: Sunlight Publication.
- Thapa, N. R. (2073). *Population Situation of Nepal*. Vidhyarthi Pustak Bhandar, Bhotahity, Kathmandu.
- Bacci, M. L. (2017). *A concise history of world population*. John Wiley & Sons.
- Bennett, L., Dahal, D. R., & Govindasamy, P. (2008). Caste ethnic and regional identity in Nepal: Further analysis of the 2006 Nepal Demographic and Health Survey.
- Chen, N., Valente, P., & Zlotnik, H. (1998). What do we know about recent trends in urbanization. *Migration, urbanization, and development: New directions and issues*, 59-88. https://doi.org/10.1007/978-94-011-4852-8_2
- Coale, A. J. (1974). The history of the human population. *Scientific American*, 231(3), 40-51. <https://doi.org/10.1038/scientificamerican0974-40>
- Dahal, D. R. (2003). Social composition of the population: caste/ethnicity and religion in Nepal. *Population monograph of Nepal, 1*, 87-135.
- Gautam, R. P. (2012). Vital Registration System in Nepal: An Overview. *Economic Journal of Nepal*, 35(4), 235-251. <https://doi.org/10.1038/scientificamerican0974-40>
- Retherford, R. D., & Thapa, S. (2004). Recent trends and components of change in fertility in Nepal. *Journal of biosocial science*, 36(6), 709-734. <https://doi.org/10.1017/S0021932003006448>

Economics Education

Eco. Ed. 535: Teaching Economics Education.

Course No: Eco. Ed. 535

Nature of the Course: Theoretical

Level: M.Ed.

Credit hour: 3

Semester: Third

total hours: 48

1. Course Description

This course intends to orient the prospective teachers on economics towards the nature of economics education. The basic objective of this course is to enhance teaching skill of prospective teachers of economics education. The course has been developed considering the applied side of economics education.

2. General Objectives:

The general objectives of the course are:

- Design the instructional objectives in economics education.
- Design the model curriculum in economics.
- Explain the importance of educational technology and use of different teaching aids in class-room.
- Discuss the teaching strategies for economics education.
- Conduct and apply action research in teaching learning process of economics.
- Apply technology based pedagogy in teaching learning process of economics.
- Construct and apply the different types of evaluation techniques in economics education.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the concept of instructional, educational and behavioral objective. • Describe the Bloom's taxonomy. • Define the revised Bloom's taxonomy. • Describe the new type of taxonomy. • Design instructional objectives for the secondary (11-12) and B. Ed. Level. 	<p>Unit I: Design of Instructional Objectives (7)</p> <p>1.1 Concept of instructional, educational and behavioral objective.</p> <p>1.2 Taxonomy of educational objectives</p> <p style="padding-left: 20px;">1.2.1 Bloom's taxonomy</p> <p style="padding-left: 20px;">1.2.2 Revised Bloom's taxonomy (Lorin Anderson and David Krathwohl)</p> <p style="padding-left: 20px;">1.2.3 New type of taxonomy (Marzano and Kendall)</p> <p>1.3 Designing instructional objectives in economics education</p>
<ul style="list-style-type: none"> • Explain the concept, meaning and definition of curriculum. • Describe foundations of curriculum. • Explain elements and process of curriculum development. • Explain the knowledge oriented, reality 	<p>Unit II : Curriculum in Economics Education(10)</p> <p>2.1 Concept, meaning and definition of curriculum</p> <p>2.2 Foundations of curriculum</p> <p>2.3 Elements and process of curriculum development.</p>

<p>oriented and value oriented statement of curriculum.</p> <ul style="list-style-type: none"> Analyze the principle of selection of subject matter and approaches to organizing contents in economics curriculum. Analyze the existing curriculum of B.Ed. level Design a model curriculum of B.Ed. level. 	<p>2.4 Concern of curriculum theory (Knowledge, reality and value oriented)</p> <p>2.5 Organizational structure in economics curriculum</p> <p>2.5.1 Principles of selection of subject matter</p> <p>2.5.2 Approaches to organizing contents</p> <p>2.6 Analytical study of B. Ed level curriculums</p> <p>2.7 Designing model curriculum in economics</p>
<ul style="list-style-type: none"> Discuss the concept, scope, characteristics and importance of educational technology in economics. Distinguish between educational technology and instructional technology. Discuss the hardware, software and reading teaching aids. Construct different teaching aids for teaching economics. Use different teaching aids for teaching economics. Find out the problems in construction and use of teaching aids in economics. Discuss the community resources in economics. Discuss the principles of selection of teaching aids in economics. 	<p>Unit III: Educational Technology and Teaching Aids (7)</p> <p>3.1 Concept, scope, characteristics and importance of educational technology.</p> <p>3.2 Meaning and distinguish between educational and instructional technology.</p> <p>3.3 Classification of teaching aids</p> <p>3.3.1 Hardware teaching aids</p> <p>3.3.1 Software teaching aids</p> <p>3.3.3 Reading materials</p> <p>3.4 Construction and use of teaching aids in economics classrooms</p> <p>3.5 Problems in construction and use of teaching aids in economics</p> <p>3.6 Community resources(concept, importance and utilization)</p> <p>3.7 Principles of selection of teaching aids</p>
<ul style="list-style-type: none"> Define the concept and features of teaching strategies in economics. Explain the features, merits, demerits, steps, types and use of lecture, discussion, project, simulation, problem solving, case study, observation, assignment and programmed instruction teaching methods and techniques. 	<p>Unit IV. Teaching Strategies for Economics(7)</p> <p>4.1 Concept and features of teaching strategies.</p> <p>4.2 Types of teaching methods and techniques(lecture, discussion, project, simulation, problem solving, case study, observation, assignment and programmed instruction and team teaching)</p>
<ul style="list-style-type: none"> Define the concept, meaning, goals and characteristics of action research. Discuss the principle of selection of the different issues for action research in schools. Explain the phase of action research in 	<p>Unit V: Action Research (6)</p> <p>5.1 Concept, meaning, goals and characteristics of action research</p> <p>5.2 Selection of issues in action research</p> <p>5.3 Phase of action research</p> <p>5.4 Significance of action research in teacher</p>

education. <ul style="list-style-type: none"> • Prepare action research report. • Write the significance of action research in education. 	education
<ul style="list-style-type: none"> • Define concept, objectives and features of technology based teaching. • Distinguish between technology teaching and traditional teaching. • Discuss the process of ICT integrated pedagogy. • Provide the knowledge of web-based instruction and e-learning. • Provide basic digital literacy. 	Unit VI: Technology Based Teaching (5) 6.1 Concept, objectives and features of technology based teaching. 6.2 Technology versus traditional teaching. 6.3 Concept and process of ICT integrated pedagogy 6.4 Web-based instruction and e-learning 6.5 Basic digital literacy
<ul style="list-style-type: none"> • Explain the formative, summative and diagnostic evaluation. • Describe the student, teacher, and curriculum and program evaluation. • Construct item analysis for standardization of a test. • Develop the capacity of students for constructing and using the teacher made test items in economics. 	Unit VII: Evaluation in Economics Education (6) 7.1 Instructional evaluation (formative, summative and diagnostic evaluation) 7.2 Comprehensive concept of evaluation (student, teacher, curriculum and program) 7.3 Standardization of a test (item analysis) 7.4 Construction and use of teacher made test items in economics

Note: The figure within parenthesis indicates the approximate teaching hours allocated to respective unit.

4. Instructional Techniques

The instructional techniques of this course are divided in given parts as follows:

4.1 General Instructional Techniques

The teacher can apply the following general instructional technique as required as per the nature of the unit wise contents.

- Lecture
- Discussion
- Inquiry
- Project
- Team teaching
- Question answer

4.2 Specific Instructional Techniques

Unit I and II: Group work and group discussion

Unit III and IV: Group study and project work.

Unit V: Prepare a paper on the basis of action research.

Unit VI: Present the one model class on the basis of technology based teaching.

Unit VII: Prepare assignment and present in classroom.

5. Evaluation Scheme

Formative and summative both type of evaluation will be used. In formative evaluation, student will be evaluated on the basis of regularity and discipline in the classroom and as well as the classroom participation and other practical activities. In summative evaluation, office of the education dean, exam control section of Tribhuvan University will conduct final examination at the end of the semester to evaluate student's performance. The examination will contain sixty full marks of that an examinee must secure thirty marks to pass the course. The types, number and marks of the subjective and objective questions will be as follows,

5.1 Internal Evaluation 40%

The internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment (Paper submission)	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60%

The theoretical external evaluation (final exam) will be conducted by the Examination Division, Dean's office, Faculty of Education at the end of semester based on the following structure. The examination will contain forty full marks of which an examinee must secure twenty marks to pass the course. The types, number and marks of the subjective and objective questions will be as follows.

Nature of Questions	Number of Questions	Points
Objective type question (Multiple choice)	10 × 1	10
Short answer questions (6 questions with TWO alternatives within any two questions × 5 points)	6 × 5	30
Long answer questions (2 question with ONE alternative within the question × 10 points)	2 × 10	20
Total		60

6. Recommended and Reference Materials

6.1 Recommended Materials

Paudel, M.R. (2075). *Methods of Teaching Economics*, Kathmandu: MK publisher and distributors. **(For Unit I, II, III, IV & VII).**

Pokhrel, R. K. (2078). *Methods of Teaching Economics and Teaching Practice*. Banasthali, Kathmandu: Dr. Rajendra Kumar Pokhrel.

Satindar, D. & Chopra, K. (2002). *A New Approach to Teaching of Economics*, New Delhi: Kalyani Publication. **(For Unit I to VII).**

Sharma, S. (2004). *Modern Teaching of Economics*, New Delhi: Anmol publications Pvt. Ltd. **(For Unit I to VII).**

Siddiqui, M.H. (1993). *Teaching of Economics*, New Delhi: Ashish publishing house. **(For Unit I to VII)**

Vedanayagam, E.G. (1998). *Teaching Technology for College Teachers*. New Delhi: Sterling publication Pvt. Ltd. **(For Unit I to VII).**

6.2. Reference Materials

- CDC. (Latest). *Secondary School Curriculum of Economics*. Sanothimi: Curriculum development center, exam board, ministry of education.
- Chauhan, S.S. (1994). *Innovations in Teaching-Learning Education*. New York: Mecomillanpublishing house.
- Dahal, M.R. &Paudel, M.R. (2013). *Methods of Teaching Economics*. Kathmandu: MK publishers and distributors.
- Kushiyait, B.K. (2013). *Methods of Teaching Economics*. Kathmandu: Ratnapustakbhandar.
- Yadav, A. (1995). *Teaching of Economics*. New Delhi: Anmol publication Pvt. ltd.

Eco. Ed. 536: Education Planning

Course No: Eco. Ed. 536

Level: M.Ed.

Semester: Third

Nature of the Course: Theoretical

Credit Hours: 3

Teaching hours: 48 hours

1. Course description

This course is developed to provide specialized knowledge on educational planning and the economic aspect of the educational system. It has covered educational planning through the economic aspects and educational plan analysis, challenges for educational policy and planning, approach and framework to educational planning, estimation of educational projection, educational planning efforts in Nepal, and educational project construction. This course is also developed to meet the needs of students who wish to become the teacher of economics of education and who plan to go for advanced study in the economics of education.

2. General objectives

- To define the aim of education planning and the types, symbols, cases, and implications of educational planning.
- To produce skilled students to analyze the relationship between education and development.
- To develop capable students to measure the educational approaches for making an educational plan in Nepal.
- To develop capable students to measure the educational framework for making an educational plan in Nepal.
- To construct competent students for estimating educational projection.
- To produce qualified students for critically viewing Nepal's educational planning efforts from a historical perspective.
- To produce qualified students for analyzing the current educational plan in Nepal.
- To prepare the qualified students to construct the dummy educational project.

3. Specific Objectives and Contents

Specific objective	Contents
<ul style="list-style-type: none"> • To define the concept of educational planning. • To explain the aim of education with reference to Nepal. • To analyse the type of educational planning. • To explain the symbols of educational planning. • To explain the case for education planning. • To point out the implication for educational planning. 	<p>Unit I: Educational Planning (8)</p> <p>1.1 Concept of educational planning.</p> <p>1.2 Aim of education.</p> <p>1.3 Types of educational planning</p> <p>1.4 Symbols of educational planning</p> <p>1.5 Analysis of access and equity in education planning</p> <p>1.6 Case for education planning.</p> <p>1.7 Implication for educational planning</p>
<ul style="list-style-type: none"> • To define the specific sub-sectors of education. • To define the features of education in economic analysis. • To explain the social factors in 	<p>Unit II: Education and Development (8)</p> <p>2.1 Developing specific sub-sectors of education</p> <p>2.2 Features of education in economic analysis.</p>

<p>educational planning.</p> <ul style="list-style-type: none"> • To make able to link the learning of students with their work. • To define the challenge of quality of education. • To define the challenge of educational equity and social cohesion. • To define the challenge of resources for education. • To identify the role of the public and private sectors in the management of education. 	<p>2.3 Influencing Social factors in educational planning</p> <p>2.4 The linkage between learning and work</p> <p>2.5 The standard of quality education.</p> <p>2.6 Educational equity and social cohesion</p> <p>2.7 Resources for education</p> <p>2.8 Governance and management</p>
<ul style="list-style-type: none"> • To analyze manpower requirement approach. • To explain the cost-benefit approaches • To describe the social demand approach. • To explain the residual approach. • To explain the system approach. 	<p>Unit III: Approaches to Educational Planning (6)</p> <p>3.1 Manpower requirement approach</p> <p>3.2 Cost-benefit approach</p> <p>3.3 Social demand approach</p> <p>3.4 Residual approach</p> <p>3.5 System approach</p>
<ul style="list-style-type: none"> • To analyze the effect of the structure of education in educational planning • To explore the content of education and educational planning • Review the inclusion of the method of teaching-learning in educational planning • To analyse the innovation and educational planning 	<p>Unit IV: Educational Consideration in Educational Planning</p> <p>4.1 Structure of the education system</p> <p>4.2 Contents of education</p> <p>4.3 Methods of teaching and learning</p> <p>4.6 Innovation</p>
<ul style="list-style-type: none"> • To estimate enrolment projection. • To estimate teacher projection. • To estimate cost/expenditure projection. 	<p>Unit V: Educational Projection (6)</p> <p>5.1 Enrolment Projection</p> <p>5.2 Teacher projection</p> <p>5.3 Cost projection/expenditure projection</p>
<ul style="list-style-type: none"> • To review the past educational plans of Nepal. • To examine the current government efforts through the planning perspective on Nepal's basic, secondary, higher and non-formal education. • To analyze the recent educational plan of Nepal: School Sector Development Plan 	<p>Unit VI: Educational Planning in Nepal (10)</p> <p>6.1 Review of previous education plans</p> <p>6.2 Recent Educational planning efforts</p> <p>6.2.1 Basic education</p> <p>6.2.2 Secondary education</p> <p>6.2.3 Higher education.</p> <p>6.2.4 Non-formal education</p> <p>6.3 Analysis of Recent Educational Plan</p> <p>6.3.1 School Sector Development Plan (SSDP)</p> <p>6.3.2 Education in the current development plan of Nepal.</p>

<ul style="list-style-type: none"> • To clarify the concept and explain the features of an educational project. • To explain the structure for educational project construction. • To analyze the stages of the educational project. • To prepare one dummy educational project. 	Unit VII: Educational Project (6) 7.1 Meaning, definition, and features 7.2 Structure for project construction 7.3 Project stages 7.4 Preparation of dummy education project
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Note: *The figure within parenthesis indicates the approximate teaching hours allocated to the respective unit.*

4. Instructional Techniques

The instructional techniques of this course are divided into given parts as follows:

4.1 General Instructional Techniques

The teacher can apply the following general instructional technique as required per the nature of the unit-wise contents.

- | | |
|-------------------|---------------------|
| (a) Lecture | (b) Discussion |
| (c) Inquiry | (d) Project |
| (e) Team teaching | (f) Question answer |

4.2 Specific Instructional Techniques

Units	Instructional Techniques
I & II	Group work and group discussion
III & IV	Prepare the seminar paper on the topic of each approach or each framework of educational planning and present it individually in the classroom.
V	Group study and project work.
VI	Prepare assignments and present them in the classroom.
VII	Prepare one dummy education project and present it in the classroom.

5. Evaluation Scheme

Formative and summative both types of evaluation will be used. In formative evaluation, the student will be evaluated on the basis of regularity and discipline in the classroom, classroom participation, and other practical activities. In summative evaluation, the office of the education dean, exam control section of Tribhuvan University will conduct the final examination at the end of the semester to evaluate students' performance. The examination will contain sixty full marks, and an examinee must secure thirty marks to pass the course. The types, numbers, and marks of the subjective and objective questions will be as follows.

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by the course teacher based on the following activities:

S.N.	Nature of Questions	Points

1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment (Paper submission)	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, Office of the Dean, Faculty of Education, will conduct the final examination at the end of the semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective-type question (Multiple choice)	10 × 1	10
2.	Short answer questions (6 questions with TWO alternatives within any two questions × 5 points)	6 × 5	30
2.	Long answer questions (2 questions with ONE alternative within any one question × 10 points)	2 × 10	20

6. Recommended Reading Materials:

- Carnoy, M. (1995). *International Encyclopedia of Economics of Education (2nd ed.)*. New York: Pergamon, Elsevier science ltd **(for unit IV)**.
- Chattopadhyay, S. (2012). *Education and Economics: Disciplinary Evaluation and Policy Discourse*. New Delhi: Oxford University Press **(for unit II)**.
- Frank, W. B. & Albert, J.R. (1967). *Economic Planning*. New York: The Macmillan company **(for units I & II)**.
- Kafle, B., Bista, M. B., Sinha, R. & Shrestha, C., B. (2060). *Educational Planning*. Bhudipuram Prakashan. **(For Unit-IV)**
- Heggade, O.D. (1992), *Economics of Education (1st ed.)*. Bombay: Himalaya publishing house **(for unit II)**.
- Metha, A.C. (2010). *Projection of Population, Enrolment, and Teacher (ORSM Unit)*. New Delhi: National institute of educational planning and administration **(for unit III)**.
- Metha, A.C. (2012). *Indicators of Educational Development with Focus on Elementary Education: Concept and Definitions (ORSM Unit)*. New Delhi: National institute of educational planning and administration **(for the unit I)**.
- Sheehan, J. (1973). *The Economics of Education*. London: George Allen & Unwin ltd **(for unit IV)**.

7. References Reading Materials:

- Blaug, M. (1968). *Economics of Education (vol. one)*. Maryland: English language books society and penguin books ltd.
- Blaug, M. (1969). *Economics of Education (vol. two)*. Baltimore: English language books society and penguin books ltd.
- Bray, M. & Varghese, N.V. (2011). *Directions in Educational Planning (International Experiences and Perspectives)*. Paris: International institute for educational planning and United Nations educational, scientific and cultural organization.

- Coombs, P.H. (1970). *Fundamentals of Educational Planning-I (What is Educational Planning?)*. Paris: International institute for educational planning, United Nations educational, scientific, and cultural organization.
- Johns, G. (1993). *The Economics of Education*. London: The Macmillan Press Ltd.
- Kafle, B., Bista, M. B., Sinha, R. & Shrestha, C. B. (2060). *Educational Planning*. Bhudipuram Prakashan.
- Khanal, B. (2079). *Economics of Education*. Kathmandu: Bidhyarthi Prakashan Ltd.
- Nagpal, C.S. & Mittal, A.C. (1993). *Economics of Education*. New Delhi: Anmol publications ltd.
- Siwakoti, D.R. & Paudel, M.R. (2073). *Economics of Education*. Kathmandu: MK publisher and distributor.
- UNESCO. (2001). *Development of Indicators for Educational Planning*. Paris: International institute for educational planning collaboration with United Nations educational, scientific, and cultural organizations.

Eco. Ed. 537: Rural Development

Course No: Eco. Ed. 537

Level: M.Ed.

Semester: Third

Nature of the Course: Theoretical

Credit hours: 3

Teaching hours: 48 hours

1. Course Description:

This course is designed to provide an in-depth knowledge on elements of the rural economy as well as geographical, demographic, ethnic and provincial diversity of rural areas including rural resources, rural infrastructure and social services development. It aims to provide specialized knowledge on water, forest, mineral, human and land resources of rural Nepal. Likewise, this course provides the knowledge to the students on rural infrastructure, plan implementation approaches in the context of Nepal, and in-depth knowledge of the rural plan development experiences of Nepal. Moreover, it also aims to develop the skills of report writing about rural development.

2. General Objectives

The general objectives of this course are as follows:

- To make the able students to examine the rural economic development of Nepal along with its elements, objectives, importance, characteristics, problems and remedial measures of rural development.
- To produce the students to explain the geographical, demographical, ethnic and provincial diversity of rural areas of Nepal.
- To prepare the students to analyze the water, forest, mineral, human and land resources of rural Nepal.
- To make capable students to point out the current status of rural transportation and communication, rural social services and issues of rural development of Nepal.
- To develop the skills on examination of the rural agriculture, industrial and tourism sector of Nepal.
- To prepare the skilled students to apply the plan implementation approaches in the context of rural development of Nepal.
- To produce the successor students for analyzing the rural plan development experiences of Nepal.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • To explain the objectives and basic elements of rural economic development. • To explain the characteristics, importance, problems and remedial measures of rural economic development. • To explain the geographical, demographical, ethnical and provincial diversities of rural people. 	<p>Unit I: Rural Economy of Nepal (5)</p> <p>1.1 Basic elements, objectives, importance, characteristics, problems and remedial measures of rural development</p> <p>1.2 Rural diversity in Nepal on the basis of</p> <p>1.2.1 Geography</p> <p>1.2.2 Demography</p> <p>1.2.3 Ethnicity</p> <p>1.2.4 Province</p>
<ul style="list-style-type: none"> • To explain the current situation, potentiality, importance, problems and remedial measures of water resources in Nepal. • To explain the current situation, potentiality, importance, problems and remedial measures of forest resources in Nepal. • To explain the current situation, potentiality, importance, problems and remedial measures of mineral resources in 	<p>Unit II: Rural Resources in Nepal (8)</p> <p>2.1 Water resources: current situation, potentiality, importance, problems and remedial measures.</p> <p>2.2 Forest resources: current situation, potentiality, importance, problems and remedial measures.</p> <p>2.3 Mineral resources: current situation, potentiality, importance, problems and remedial measures.</p> <p>2.4 Human resources: current situation,</p>

<p>Nepal.</p> <ul style="list-style-type: none"> • To explain the current situation, potentiality, importance, problems and remedial measures of human resources in Nepal. • To explain the current situation, potentiality, importance, problems and remedial measures of land resources in Nepal. 	<p>potentiality, importance, problems and remedial measures.</p> <p>2.5 Land resources: current situation, potentiality, importance, problems and remedial measures, Use pattern, land tenure system, land reform efforts and land reform act.</p>
<ul style="list-style-type: none"> • To evaluate the current situation, potentiality, importance, problems and remedial measures of transportation and communication of rural Nepal. • To analyze the current situation, potentiality, importance, problems and remedial measures of education and health of rural Nepal. • To evaluate rural poverty, unemployment and income inequalities as issues of rural development of Nepal. • To evaluate the effects of social norms, values and institutional in economic development of rural Nepal. 	<p>Unit III: Infrastructure and Social Services in Rural Nepal (9)</p> <p>3.1 Infrastructure development</p> <p>3.1.1 Transportation and communication: (current situation, potentiality, importance, problems and remedial measures)</p> <p>3.2 Social services</p> <p>3.2.1 Education and health: (current situation, potentiality, importance, problems and remedial measures)</p> <p>3.3 Issues of rural development</p> <p>3.3.1 Rural poverty, unemployment and income inequalities</p> <p>3.3.2 Social norms, values and institutions</p> <p>3.3.3 Climate Change and Rural Livelihood</p>
<ul style="list-style-type: none"> • To evaluate the role, problems and prospective of agriculture development of rural Nepal. • To evaluate the pattern, land tenure system, land reform efforts and land reform act. • To evaluate the nature, problems and prospects of agriculture marketing. • To explain the importance, causes and measures of pricing policy. • To explain the importance, sources and problems of agriculture finance. • To review the current government agriculture policy. • To evaluate the current situation, role, problem and remedial measures of small, medium and large scale industry. • To explain the current situation, role, problems, prospects and remedial measures of rural tourism of Nepal. 	<p>Unit IV: Sectoral Development of Rural Nepal (14)</p> <p>4.1 Agriculture sector</p> <p>4.1.1 Role, problems and prospective of agriculture sector</p> <p>4.1.2 Agriculture marketing: nature, problems and prospects; pricing policy: importance, causes and measures; and finance; importance, sources and problems</p> <p>4.1.3 Current government agriculture policy</p> <p>4.2 Industrial sector: current situation, role, problems and remedial measures of small, medium and large scale industry.</p> <p>4.3 Rural tourism: current situation, role, problems, prospects, remedial measures of rural tourism.</p>

<ul style="list-style-type: none"> • To analyze the features, merits and demerits of the minimum package approach of rural development. • To explain the features, merits and demerits area specific development approach of rural development. • To describe the features, merits and demerits of sectorial development approach of rural development. 	<p>Unit V: Plan Implementation Approach (4)</p> <p>5.1 The minimum package approach 5.2 Area specific development approach 5.3 Sectorial development approach</p>
<ul style="list-style-type: none"> • To analyze the integrated rural development programmes of Nepal. • To evaluate the impact of people's participation in rural development. • To explain the public private partnership in the context of Nepal. • To explain the relevancy of decentralization for rural development of Nepal. • To examine the role of NGOs for rural development. • To review the current rural development policy of Nepal. 	<p>Unit VI: Plan Development Experience in Nepal (8)</p> <p>6.1 Integrated rural development 6.2 People's participation in rural development 6.3 Public private partnership 6.4 Decentralization of development authority to local bodies 6.5 NGOs and rural development 6.6 Current rural development policy in Nepal</p>

Note: The figures within the parentheses indicate the approximate periods for the respective units.

4. Instructional Technique

Instructional techniques of this course are divided two parts i.e. general and specific which are as follows.

4.1 General Techniques

The teacher can apply the following general instructional technique as required as per the nature of the unit wise contents.

- Lecture and illustration
- Discussion and demonstration
- Individual and group work/project method
- Report writing and classroom presentation
- Inquiry and question answer
- Rural Based Case study

4.2 Specific Techniques

Unit	Activity and instructional techniques
I	<ul style="list-style-type: none"> • Prepare a report through a case study in the topics of ethnic diversity in Nepal and present in classroom. • Collect the reading materials through library study and share each other.
II	<ul style="list-style-type: none"> • Prepare note about resources of Nepal and take suggestions by the subject teacher.
III	<ul style="list-style-type: none"> • Prepare short note and present in classroom about infrastructure and social services of rural Nepal.
IV	<ul style="list-style-type: none"> • Visit agricultural, industrial and tourist area and collect required information and individually share in classroom.
V	<ul style="list-style-type: none"> • Divide the students in different groups and discuss about plan implementation approaches, and then have to say presentation the conclusion of discussion in classroom by group leader.

VI	<ul style="list-style-type: none"> Make the class note collecting the related reading materials through library and e-library by the students and sharing each other.
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5. Evaluation Scheme

Formative and summative both type of evaluation will be used. In the formative evaluation student will be evaluated on the basis of regularity and disciplined manner in the classroom as well as the classroom participation and other practical activities. In the summative evaluation, education dean office, exam section of Tribhuvan University will conduct the final examination at the end of the semester. The examination will contain sixty full marks of that an examinee must secure thirty marks to pass the course. The types, number and marks of the subjective and objective questions will be as follows.

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment (Paper submission)	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10 × 1	10
2.	Short answer questions (6 questions with TWO alternatives within any two questions × 5 points)	6 × 5	30
2.	Long answer questions (2 questions with ONE alternative within any one question × 10 points)	2 × 10	20

6. Recommended and References Materials

6.1 Recommended Materials

Dahal, M.K. (2004). *The Nepalese Economy towards Building a Strong Economic Nation-State*. Kathmandu: New hira books (**For Unit V**).

Hada, G. B. & Aryal, B. (2064). *Development and Planning in Rural Perspective*. Kathmandu: Dikshanta publication (**For Unit V**).

Jnawali, D. (2004). *Rural-Urban Interaction: A Geographical Perspective*. Kathmandu: Students books publishers and distributors (**For Unit I**).

Mondal, S. & Ray, G. L. (2007). *Textbook of Rural Development*. New Delhi: Kalyani publishers (**For Units I & V**).

Pant, Y. P. & Jain, S. C. (1980). *Rural Problems and Rural Development in Nepal*. New Delhi: Development publishers (**For Units III, & V**).

Singh, K. (1999). *Rural Development Principles, Policies and Management (2nd ed.)*. New Delhi: Sage publication team (**For Units V**).

- Paudel, M.R. (2073). *Nepalese Economy*. Kathmandu: M.K. publishers and distributors **(For Unit I, II, III and IV)**.
- Upadhyay, R.P. (2008). *Readings in Rural Tourism*. Kathmandu: Sunlight publication **(Unit V)**.
- Gnawali, B.R. & Paudel, M.R. (2069). *Population Studies*. Kathmandu: MK publishers and distributors **(For Unit II)**.
- Nabin, G. (2070). *Rural Community Development*. Kathmandu: Kshitij publication **(For Unit VI)**.

6.2 References Materials

- Acharya, G.K. (2059). *Rural Economics*. Kathmandu: Ratna pustak bhandar.
- ADB. (2006). *Report and Recommendation of the Product to the Board of Director*. Manila: Author.
- Agrawal, G. R. (1982). *Decentralization and Development*. Kathmandu: CEDA, TU.
- Bashyal, R. (2008). *Rural Development Practices in SAARC Countries: Some Innovative Cases*. New Delhi: Author.
- CBS, (Latest). *Nepal Living Standard Survey*. Kathmandu: Central bureau of statistics, Government of Nepal.
- Hada, G.B. (2062). *Rural Development Policies & Strategies*. Kripitaur: Dikshanta pustak prakashan.
- Jha, K.K. (1978). *Agricultural Finance in Nepal an Analytical Study*. New Delhi: Heritage Publishers.
- Jhingan, M.L. (2008). *The Economics of Development and Planning (39th ed.)*. New Delhi: Vrinda publications pvt. ltd.
- Karna, S.K. (2064). *Economic Planning*. Kathmandu: Quest publication.
- Lele, U. (1986). *The Design of Rural Development*. London: The Johnhopkins University press.
- Luitel, C.P. (2058). *Contemporary Development Economics and Nepalese Economy*. Kathmandu: Bhundipuram publication.
- Ministry of Finance. (Various Year). *Economic Survey*. Kathmandu: Ministry of finance, Nepal government.
- NPC. (2070). *Current Periodic Plan*. Kathmandu: National planning commission, Nepal government.
- NRB. (2070). *Current Yearly Journal*. Kathmandu: Nepal rastra bank, Nepal government.
- Ojha, B.R. (2059). *Contemporary Development Economics and Nepalese Economy*. Kathmandu: Taleju publication.
- Sapkota, B.D. & Sapkota, K.N. (2008). *Rural Resources Environment & Management*. Kathmandu: Sunlight publication.
- Sharma, N.K. (2061). *Economics of Nepal*. Kathmandu: Pairawi publication.
- Sharma, N.K. (2068). *Contemporary Development Economics and Nepalese Economy*. Kathmandu: Pairawi publication.
- Silwal, S. (2060). *Contemporary Development Economics and Nepalese Economy*. Kathmandu: Ratna pustak bhandar.
- World Bank. (1975). *The Assault on World Poverty-Problems of Rural Development*. London: The John Hopkins University press.

Eco. Ed. 538: International Economics

Course No. : Eco. Ed. 538

Level: M. Ed.

Semester: Third

Nature of Course: Theoretical

Credit Hours: 3

Teaching - hours: 48

1. Course Description

The course offers a rigorous combination of theoretical and application-oriented courses in economics. The course opens up international macroeconomic issues focusing on international trade theory and policy. This course provides an analysis of the trade problems and forums specially linked with developing countries.

2. General Objectives:

The general objectives of this course are to:

- To review different trade theories and approaches of international economics.
- To explain the Law of Reciprocal Demand.
- To analyze the terms of trade and its determinants and estimation.
- To explain the balance of payment adjustment mechanism.
- To discuss the measure of exchange control.
- To discuss the trade problems for developing countries.
- To introduce the different international forum of international trade.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • To define the concept of Adam Smith's and Ricardo's Theory • To critically evaluate the trade theories of Haberler, Heckscher- Ohlin theory, Leontief paradox and factor price equalization, Rybezynsky and Vent for surplus approach 	<p>Unit I: Theories of Trade (12)</p> <p>1.1 Trade theories: Adam Smith, Ricardo, Haberler, Heckscher-Ohlin, Leontief's Paradox, factor price equalization theorem, Rybezynsky theorem, and Vent for surplus approach</p>
<ul style="list-style-type: none"> • To describe the law of reciprocal demand • To derive the offer curves. 	<p>Unit II : Law of Reciprocal Demand (5)</p> <p>2.1 Law of reciprocal demand 2.2 Derivation of offer curves</p>
<ul style="list-style-type: none"> • To explain the concept, types and determinants of terms of trade. • To estimate Nepal's terms of trade with its major trading partners (India and China). 	<p>Unit III : Terms of Trade (8)</p> <p>3.1 Concept, types and determinants of terms of trade 3.2 Quantitative estimation of terms of trade of Nepal with its major trading partners (India and China)</p>
<ul style="list-style-type: none"> • To explain the concept of balance of trade and balance of payments 	<p>Unit IV: Balance of Payment and its</p>

- To discuss the causes of disequilibrium in BOPs.
- To explain the automatic adjustment mechanism of balance of payment.
- To discuss the meaning, types and effects of tariffs.
- To explain the concept, types and effects of quota.
- To discuss the concept of dumping and its objectives and effects.
- To analyze the trade problems of the developing countries.
- To describe the nature and functions of international trade forums UNCTAD, WTO, SAFTA and examine their role in trade promotion of developing countries.

Adjustment (10)

- 4.1 Concept of balance trade and balance of payments.
- 4.2 Causes of disequilibrium in BOPs.
- 4.3 Adjustment Mechanism (automatic adjustment: price and income adjustment and money in the adjustment process)

Unit V: Exchange Control (8)

- 5.1 Tariffs: meaning, types and effects.
- 5.2 Quotas: concept, types and effects.
- 5.3 Dumping: concept, objectives and effects.

Unit VI: International Trade Forums and Developing Countries (5)

- 6.1 Trade problems of developing countries.
- 6.2 Role of UNCTAD, WTO and SAFTA in trade promotion of developing countries.

Note: The figures in the parentheses indicate the approximate periods for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Instructional Techniques

- Lecture and illustration
- Discussion and demonstration
- Question answer
- Inquiry and problem solving
- Group work and participation

4.2. Specific Instructional Techniques

Unit Activities and Instructional Techniques

I A: Activity: Class discussion on International and International Trade.

B: Instructional Technique: Grouping the student in two groups and guide them for discussion on differences between internal and international trade.

- Class discussion on theories of international trade focusing on Adam Smith, David Ricardo, and H-O theories.
- One guest lecture on application of H- O theory in the context of liberalized

economy.

II Class room discussion on law of reciprocal demand and derivation of Offer Curve.

III **Activity:** Calculation of Nepal's terms of trade with major trade partners.

Instructional Technique: Instruct students to collect relevant data and calculate terms of trade by using appropriate methods.

IV Class room discussion on causes of disequilibrium and automatic adjustment mechanism on BOPs in the context of Nepal.

V Class room discussion on means of exchange control.

VI **Activity:** Class room presentation on trade problems of Nepal.

Instructional Technique:

- Prepare a report on trade problems of Nepal.
- Search Google for International trade forum like UNCTAD, WTO and SAFTA and present in classroom.

Note: Specific Instructional Techniques may or may not require for each of the unit mentioned in course outline.

5. Evaluation Scheme

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment (Paper submission)	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10× 1	10
2.	Short answer questions (6 questions with TWO alternatives within any two questions × 5 points)	6× 5	30
2.	Long answer questions (2 questions with ONE alternative within any one question × 10 points)	2× 10	20

6. Recommended and Reference Materials

6.1 Recommended Materials

Kindleberger, C. P. (2004). *International economics*. New Delhi: All India traveler book seller. **(For Unit V)**.
 Mannur, H.G. (2007). *International economics: Theory and issues*. New Delhi: Vikash publishing house. **(For Unit I, IV)**.

Mithani, D.M.(20017). *International economics*. New Delhi: Himalya publishing house.(**For Unit I-VI**).

Poudyal, S.R. (1988). *Foreign Trade, Aid and Development in Nepal*. New Delhi: Commonwealth publishers.
(**For Unit III**).

Salvatore, D. (2005). *International economics*. New Delhi: Tata McGraw hill publishing company limited.(**For Unit I, II & III**).

कुशियैत, विनय कुमार. (२०६८). *अन्तरराष्ट्रिय अर्थशास्त्र*. कीर्तिपुर: सनलाइट पब्लिकेसन ।(**For Unit I, II, IV**).

6.2. References Materials

Banskota, N. P. (1981). *Indo-Nepal Trade and Economic Relations*. Delhi: BR publishing corporation.

Cherunilam, F. (2006). *International economics*. New Delhi: Tata Mc-Graw hill publishing company limited.

Jhingan, M L. (2007). *International economics*. Delhi: Konark publisherpvt. ltd.

Krugman, P. R. & Obstfeld, M. (2009). *International Economics: Theory and Policy*. London: Pearson education publication.

NRB. *Economic Review (various issues)*. Kathmandu: Nepal Rastra Bank, Government of Nepal.

Samuelson, P.A. & Nordhaus, W.D. (2003). *Economics*. New Delhi: Tata McGraw hill publishing company limited.

History Education

Hist. Ed. 535: Teaching Methods of History

Course No: Hist. Ed. 535

Level: M. Ed.

Semester: Third

Nature of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Description

This is a specialized course in history education which aims to provide the students with the knowledge and skills to help them to teach history effectively. It includes contents such as objectives, curriculum designing process and its evaluation, use of different methods of teaching history, construction and use of instructional plans, preparation and administration of different evaluation tools. Similarly, it deals with importance of historical visits with planning, implementation, report writing and presentation.

2. General Objectives

The general objectives of this course are as follows:

- To help the students develop the skills and competencies required for history teaching.
- To familiarize the students with the process of curriculum planning, designing and evaluating techniques.
- To help the students to develop skills in using different methods of teaching in class room.
- To enable the students to develop the skills of instructional planning, construction and use of different evaluation tools, prepare and use of different teaching aids.
- To enable the students in planning and organizing the visit of historical places, report writing and presentation.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the concept of history and history education • Describe the aims, objectives and nature of history teaching • Point out the recent trends in teaching history 	<p>Unit I: Introduction (6)</p> <p>1.1 Nature of history and history education</p> <p>1.2 Aims and objectives of teaching history</p> <p>1.3 Recent trends in teaching history</p>
<ul style="list-style-type: none"> • Identify the basic principles of planning curriculum. • Points out the basic approaches for selecting subject matters in history. • State the techniques of organizing subject matters in history. • Highlight on the curriculum planning and designing process in T.U. • Point out criteria for evaluating history curriculum • Analyze the weakness of history curriculum of B.Ed. and M.Ed. course • Describe the history of history curriculum development in Nepal 	<p>Unit II: Curriculum Planning and Practices in History Education (13)</p> <p>2.1. Basic principles of the planning curriculum</p> <p>2.2. Different approaches for selecting subject matters</p> <p>2.3. Principles for organizing subject matters</p> <p>2.4 A glimpse on curriculum designing process in T.U.</p> <p>2.5. Criteria for evaluating history curriculum</p> <p>2.6. Overview of B.Ed. and M.Ed. history curriculum</p> <p>2.7. A brief survey on the development of history curriculum in Nepal</p>

<ul style="list-style-type: none"> • Explain the needs of teaching aids in teaching history • Classify the types of teaching aids and their use • Explain and use the ICT in the classroom 	<p>Unit III: Aids and Equipment in teaching History (7)</p> <p>3.1. Need of teaching aids in teaching history</p> <p>3.2. Types of audio-visual aids and their use e.g. white board, graphs, charts, pictures, models, slides and fieldtrips</p> <p>3.3 Use of ICT (Webpage, Internet)</p>
<ul style="list-style-type: none"> • Explain the need of various history teaching methods • Point out the context for the use of different methods • Mention the strength and weaknesses of different methods 	<p>Unit IV: Methods of Teaching History (7)</p> <p>4.1. Need of appropriate and variety of methods</p> <p>4.2. Different methods of teaching history e.g. lecture discussion, source, project, inquiry.</p> <p>4.3. Implication, strength and weakness</p>
<ul style="list-style-type: none"> • Explain the need and importance of instructional plans • Identify the types instructional plans • Construct models of different instructional plans 	<p>Unit V: Instructional Planning in History (7)</p> <p>5.1. Need and importance of instructional planning</p> <p>5.2. Types of instructional plans- work, unit, lesson plan.</p> <p>5.3. Preparation and use of work plan, unit plan, lesson plan.</p>
<ul style="list-style-type: none"> • Point out the types of evaluation devices in history • Describe the context for adopting subjective and objective test items • Prepare model questions of both types • State the ways to determine the quality of test items 	<p>Unit VI: Teaching history in Evaluation (8)</p> <p>6.1. Concept and types of evaluation</p> <p>6.1.1 Subjective and objective test and context for use</p> <p>6.1.2 Construction of subjective and objective test items</p> <p>6.1.3 Quality assessing techniques of test items</p> <p>6.2 Preparation of Administration of different evaluation Tools.</p>

4. Instructional Techniques

Two groups of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the units. The second group includes such instructional techniques which should be applied to teach specific unit.

4.1 General Instructional Techniques

Due to the theoretical nature of the course, teacher directed, guided and instructed techniques will be mostly adopted. To impart the required knowledge of the concerned units the teacher will adopt the following methods and techniques.

3. Lecture
4. Discussion
5. Paper presentation of the project
6. Brain storming and buzz session

7. Report writing assignment

4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
Unit I : Introduction	Discussion and assignment Presentation
Unit II: Curriculum Planning and Practices in History	Book review and presentation
Unit III: Aids and Equipment in history Teaching	Discussion and Demonstration of history teaching Aids and equipment
Unit IV: methods of teaching	Active participatory approach and rehearsal
Unit V: Teaching Planning in History	Individual work assignment and presentation,
Unit VI: Evaluation Devices in teaching History	Individual and group work, class room presentation

5. Evaluation

a. Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

- | | |
|--|----------|
| 1) Attendance | 5 Marks |
| 2) Participation in Learning activities | 5 Marks |
| 3) First assignment | 10 Marks |
| 4) Second assignment (Midterm exam) assessment | 10 Marks |
| 5) Third assignment/ assessment | 10 Marks |

Total	40 Marks
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Unit wise activities and work for internal evaluation

Units	Activities and work for internal evaluations
Unit I: Introduction	Group discussion and presentation (class work for overall activities)
Unit II: Curriculum Planning and Practices in History	List out feature of Curriculum Planning and Practices in History. (Participation in Learning activities, 2)
Unit III: Aids and Equipments in history Teaching	Discuss and Demonstrate varieties of history teaching Aids and equipment (1 st assignment ,2)
Unit IV: methods of teaching	Practice to teach different methods in classroom among friends (1 st assignment ,3)
Unit V: Teaching Planning in History	Prepare model unit plan and lesson plan based on history Education. (2 nd assignment ,5)

Unit VI: Evaluation Devices in teaching History	Make four type of objective evaluation tools (4 type) and two type subjective (short and Long) evaluation tools (3rd assignment ,5)
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B, External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

- | | |
|---|----------|
| 1) Objective type question (multiple choice questions 10 x 1 point) | 10 Marks |
| 2) Short answer question (6 questions with 2 or x 5 points) | 30 Marks |
| 3) Long answer questions (2 questions with 1 or x 10 points) | 20 Marks |

Total	60 Marks
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5. Recommended Books and References

6.1 Recommended Books

Kochhar, S.K. (1981). *Teaching History*. Delhi: Sturling Publishing Pvt.Ltd.

(Unit I-VI)

Upadyaya, SP. (2049 B.S.). *ItihasShikshanBidhi*. Kathmandu: ratanaPustakBhandar.

(Unit I-VI)

Pandit, D., (2075 B.S.). *Itihas Shikshan Bidhi: Theory and Practice*, Kathmandu: Srimati Rajkumari Acharya.

Ghate, V.D. (1991). *The Teaching History*. Teaching in India series 6th Edition.

(Unit I-VI)

6.2 References

Adhikari, K. K. (1992). *Nepal historiography, problem and solutions*. A paper presented in seminar organized by Central Department of History, T.U.

Chaffer, J. & Taylor, L. (1975). *History and history teacher*. London: George Allan and Unwin.

Print, M. (1993). *Curriculum development and design*. London: George Allan and Unwin.

Tyler, R.W. (1974). *Basic principles of curriculum and instruction*. London: Open University publication.

Wagle, M. P. (1994). *Research methods in education and social sciences*. Kathmandu: M.K. Publisher.

Gyawali, D. (1997). *A handbook for research scholar*. Kirtipur: Kalpana Gyawali.

Hist. Ed. 536: History of Archives and Museums in Nepal

Course No: Hist. Ed. 536

Nature of course: Theoretical

Level: M. Ed

Credit hours: 3

Semester: Third

Teaching hours: 48

1. Course description

This is a theoretical and practical course which intends to acquaint the students with the major events of the history of Archives and museum in Nepal. The course aims to provide theoretical knowledge through both regular classroom teaching and practical activities.

2. General Objectives

The general objectives of this course are as follows:

- To provide introduction to archives.
- To enable the students to identify the way of conservation and restoration of document
- To provide the introduction of archives of Nepal: growth and development
- To provide the students with introduction of museum
- To enable the students to identify about the museum management
- To provide the introduction to students with museum in Nepal

3. Specific Objectives and Contents**Part I- History of Archival Science**

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the general meaning of archive. • Describe the importance of Archive. • Identify the history and development of Archive as a science. • State about the records and its types, registry and filing systems of records. • Evaluate the causes of deterioration of records. 	<p>Unit I : Introduction to Archives (11)</p> <p>1.1 Concept and meaning and importance of archive.</p> <p>1.2 Types of Archives Development of Archives administration in the world.</p> <p>1.3 Records, registry system and modern filing system</p> <p>1.4 Deterioration of records</p> <p>1.4.1 Biological Deterioration</p> <p>1.4.2 Physical deterioration</p> <p>1.4.3 Chemical deterioration</p>

<ul style="list-style-type: none"> • Describe the general concept of conservation and restoration of document of archive. • Describe the methods of conservation and restoration of documents. • Explain the preservation and restoration of Microfilm and sound recordings and other special records. 	<p>Unit II: Conservation and Restoration of Document (10)</p> <p>2.1 Fumigation</p> <p>2.2 Proper storage</p> <p>2.3 Environmental control.</p> <p>2.4 Manual lamination</p> <p>2.5 Deacidification-</p> <p>2.5.1 Wet methods</p> <p>2.5.2 Dry method.</p> <p>2.6 Preservation of Microfilm and Sound Recordings.</p> <p>2.7 Restoration of special records and documents.</p>
<ul style="list-style-type: none"> • Describe the historical development of archive in Nepal. • Introduce the Archives Preservation Act of 1964 and 1990 of Nepal. • Explain the various forms of archives of Nepal. 	<p>Unit III: Archives of Nepal: Growth and Development (6)</p> <p>3.1 Historical development of archives in Nepal.</p> <p>3.2 Archives Preservation Act of 1990</p> <p>3.3 Forms of Archives in Nepal- National Archives, Archives in temples and monasteries, Private archives, Archival records in Libraries.</p>
<p>Part II: History of Museum</p>	
<ul style="list-style-type: none"> • Explain the meaning, definition and importance of museum. • Categorize the types of museum • Explain the main functions of museum • Explain the historical development of museum in the world. • Describe the changing role of museum. 	<p>Unit IV: Introduction of Museum (7)</p> <p>4.1 Meaning, definition and importance of Museum.</p> <p>4.2 Types and functions of museum</p> <p>4.3 History of museum development</p> <p>4.4 Changing Role of Museum</p>
<ul style="list-style-type: none"> • Describe the collections and documentation of museum materials. • Explain the process and types of cataloguing and labeling. • Describe the methods of display and exhibition of museum materials • Analyze the techniques and methods of conservation and preservation. • Describe the storage and security management in museum. 	<p>Unit V: Museum Management (8)</p> <p>Collections and Documentation</p> <p>5.2 Cataloguing and Labeling</p> <p>5.3 Display and Exhibition</p> <p>5.4 Conservation and Preservation of museum materials</p> <p>5.5 Storage and security in museum</p>

<ul style="list-style-type: none"> • Explain the history of museum in Nepal • Elaborate the types of museum in Nepal • Explain the role of museum in preserving cultural property and cultural heritage in Nepal. 	<p>Unit VI: Museum in Nepal (6)</p> <p>6.1 History of museum in Nepal</p> <p>6.2 Types of museum in Nepal</p> <p>6.3 Role of Museums in preserving cultural property and cultural heritages in Nepal</p>
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4. Instructional Techniques

Two groups of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the units. The second group includes such instructional techniques which should be applied to teach specific unit.

4.1 General Instructional Techniques

Due to the theoretical nature of the course, teacher directed, guided and instructed techniques will be mostly adopted. To impart the required knowledge of the concerned units the teacher will adopt the following methods and techniques.

- Lecture
- Discussion
- Paper presentation of the project
- Brain storming and buzz session
- Report writing assignment

4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
Unit I: Introduction to Archive	Group discussion
Unit II: Conservation and Restoration of Document	Project work
Unit III: Archives of Nepal: Growth and Development	Case study
Unit IV: Introduction of Museum	Group discussion
Unit V: Museum Management	Report writing
Unit VI: Museum in Nepal	Group discussion

5. Evaluation

b. Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

- 6) Attendance

5 Marks

7) Participation in Learning activities	5 Marks
8) First assignment	10 Marks
9) Second assignment (Midterm exam) assessment	10 Marks
10) Third assignment/ assessment	10 Marks

Total	40 Marks
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Unit wise activities and work for internal evaluation

Units	Activities and work for internal evaluation
Unit I: Introduction to Archive	group discussion and presentation (class work for overall activities)
Unit II: Conservation and Restoration of Document	Make list for conservation and restoration of Document; present it in classroom. (Participation in Learning activities, 2)
Unit III: Archives of Nepal: Growth and Development	Prepare the comparative table to present growth and development Archives of Museum (1 st assignment, 2)
Unit IV: Introduction of Museum	Make power point slide to show based on meaning, definitions, types and roles of Museum. (1 st assignment, 3)
Unit V: Museum Management	Case study based on Museum Management related books (2 nd assignment, 5)
Unit VI: Museum in Nepal	Prepare report based on Museum in Nepal and presents in class. (3 rd assignment, 5)

c. External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

4) Objective type question (multiple choice questions 10 x 1 point)	10 Marks
5) Short answer question (6 questions with 2 or x 5 points)	30 Marks
6) Long answer questions (2 questions with 1 or x 10 points)	20 Marks

Total	60 Marks
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5. Recommended Books and References

6.1 Recommended Books

Acharya, Mahesh Kumar, (2057). *Nepalese Archaeology and ancient civilization*. Pokhara: Bidhayarathi Prakashan.

Dahal, P. and Khatiwoda S.P. (2065). *An Introduction to Archaeology*. Kathmandu: M.K. Publishers and distributors.

Dubedi, P. K. (1976). *Museum in Nepal*. Kathmandu: Smt. Sushila, Dubedi.

Dubedi. P. K. (2032), *Sangrhlaya ra Samaj*. Kathmandu: Shree Panch Ko Sarakar.

Good, G. B. (reprint 2012), *Principle of Musuem Administration*. General Books LLC

James O'T., (1990). *Understanding Archives and Manuscripts*. Chicago: Society of American Archivists.

Kathpalia, Y. P. (1973). *Conservation and restoration of archive materials*. Paris: Unesco.

Khatiwada, S. P. & Dahal, K. (2070). *Nepal Ko Sanskritik Paryetan*. Kathmandu: M.K. Publishers and distributors.

Regmi, D. C. (2060), *Pura Lekhan Ra Abhlek*. Katmandu: Himalay Book Stall

Schellenberg, T.R. (2003). *ModernArchives: principles & techniques*. Chicago: The Society of American Archivists, 2003 issue.

Sharma, J. L., (n.d.). A Brief Note on Museum Development in Nepal, *Ancient Nepal*, Kathmandu: Archeology Department.

6.2 References

Dept. of Archaeology: *Ancient Nepal* All Number.

Desvallees and Mairesse, Andre and Francois (edi.) (2010). *Key concepts of museology*. Singapur:

Doniel, R.G, *Origin and Development of Archaeology*

Randall J. ed. (2000). *Understanding Archives and Manuscripts*. Chicago: Society of American Archivists.

Shankalia, H.D. (1979). *Indian archaeology today* (1979 Edition)

Hist. Ed. 537: Major Turning Points of Nepali History from the Pre-historic Period to 1868 AD

Course No: Hist. Ed. 537

Nature of course: Theory

Level: M. Ed

Credit hours: 3

Semester: Third

Teaching hours: 48

1. Course Description

This course is designed for M.Ed. third semester students who specialize in history. It intends to provide the required knowledge of ancient and medieval history of Nepal. This course deals with the history of the Gopals, Abhires, Shakyas of Kapilbastu, Bedehas of Janakpur, Kirat and Lichhavis of Kathmandu. Likewise it also deals with the history of the origin of Mallas of the Kathmandu valley. Similarly, this course also covers the political histories of Baise, Chaubise, Khas kingdom, Bedeh of Janakpur, Kapilvastu and Sen Dynasty.

2. General Objectives

The general objectives of this course are as follows:

- To provide broader knowledge on the geographical, influence on the history and origin of Nepal.
- To develop broader understanding on the early settlement and dynasties.
- To enable the students in describing the history of Kiratas and their downfall, achievements of Lichhivi kings and their society, economy and administration.
- To familiarize the students with the origin of Mallas of the Kathmandu valley.
- To make the students able in explaining the society, economy, political condition art and culture of the Malla period and evaluating the reforms of the Malla king of the Kathmandu valley.
- To acquaint the students with the histories of Baise, Chaubise, Makwanpur, Chaudandi and Bijayapur states.
- To enable the students in analyzing the interstate relation between Gorkha and the Malla Kings of the Kathmandu Valley and the relation with Tibet and India.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the origin of the name 'Nepal'. • Describe the geographical influence in the history of Nepal. • Analyse the sources of Nepalese history. • Explain the early settlement in the Kathmandu valley and the early rulers of Nepal. • Describe the entry of Gopal and their role Explain the advent of Abhir and their rule • Explain origin of Bidehas of Jnakpur • Acquaint the rule of Shakyas of Kapilvastu • Describe the Khas kingdom of western Nepal • Acquaint the Karnatak of Simraungadh 	<p>Unit I : Early History of Nepal (7)</p> <p>1.1 Origin of the name 'Nepal'.</p> <p>1.2 Geographical influence in the history of Nepal.</p> <p>1.3 Sources of Nepalese history.</p> <p>1.4 Earliest settlement, rulers of early period;</p> <p>1.4.1 Gopals</p> <p>1.4.2 Abhira</p> <p>1.4.3 Bidehas of Janakpur</p> <p>1.4.4 Shakyas of Kapilvastu.</p> <p>1.4.5 Khas kingdom</p> <p>1.4.6 Karnatak of Simraungadh</p> <p>1.5 History of Kiratas.</p> <p>1.5.1 Fall of Kirat dynasty.</p>

<ul style="list-style-type: none"> • Explain the role of establishing civilization • Analyze the causes of the fall of Kirat dynasty. 	
<ul style="list-style-type: none"> • Explain the rule of Man Dev • Evaluate the foreign relations of Man Dev • Explain the rule of Shiv Dev. • Evaluate the influence of Guptas in Shiva Dev regime • Describe the Causes of the rise of Amshu Varma. • Explain the relation between Shiva Dev and Amshu Varma. • Explain the socio-economic reforms of Amshu Varma. • Evaluate the Amshuvarma's relation with Tibet and India. • Describe the Narendra Dev and restoration of Lichhivi dynasty. • Explain the carrier of Jaya dev II and achievements of Jaya Dev II. • Explain and analyze the Lichhivi Society, economy and administration 	<p>Unit II : Introduction to Lichhavi period (9)</p> <p>2.1 Man Dev 2.1.1 Foreign relations of Man Dev</p> <p>2.2 Shiv Dev 2.2.1 Influence of Guptas in Shiva Dev regime.</p> <p>2.3 Amshu Varma 2.3.1 Relation between Shiva Dev and Amshu Varma 2.3.2 Socio-economic reforms of Amshu Varma 2.3.3 Amshu Varma's relation with Tibet and India.</p> <p>2.4 Narendra Dev. 2.4.1 Restoration of Lichhivi dynasty.</p> <p>2.5 Jaya Dev II 2.5.1 Achievements of Jaya Dec II</p> <p>2.6 Lichhavi's society economy and administration</p>
<ul style="list-style-type: none"> • Explain the origin of the Mallas. • Introduce Ari Malla as the first Malla King. • Describe Avaya Malla's rule. • Analyse the political condition of the Kathmandu valley before the rise of JayasthitiMalla. • Evaluate the reforms of JayasthitiMalla. • Examine the carrier,of YakshaMalla • State the conquest of YakshaMalla • Analyze the achievments of YakshaMalla. 	<p>Unit III: Introduction to Malla Period (9)</p> <p>3.1 Origin of Mallas 3.2 Ari Malla 3.3 Avaya Malla 3.4 Political condition of Kathmandu the valley before rise of JayasthitiMalla. 3.5 Career and achievement of JayasthitiMalla 3.6 Careerof YakshaMalla 3.6.1 Conquestof YakshaMalla 3.6.2 Achievement of YakshaMalla</p>

<ul style="list-style-type: none"> • State the cause of the division of Mallas in valley. • Identify the rulers of Bhaktapur • Describe the relation of Raya Malls with his brothers. • Introduce Jitamitra Malla as a Malla king of Bhaktapur. • Describe the carrier and achievements of Bhupantindra Malla. • Analyze the impact of RanjitMalla's relation with Gorkha. • Identify the rulers of Lalitpur • Describe the contribution of SiddhinarsinghaMalla in religious, social and economic sector. • Point out the works of SriniwasMalla • Explain the importance of YognarendraMalla. • State the role of six Pradhans for political instability, politics of Patan and its effects on valley politics. • State of rulers of Kantipur • Identify Ratna Malla as a first king of divided Kantipur. • State the remarkable works of MahendraMalla. • Describe the carrier and achievements of Pratap Malla. • Explain the carrier of Jayaprakash Malla, his role and responsibility in the fall of Mallas. • Analyze the causes of the downfall of Mallas. 	<p style="text-align: center;">Unit IV: Three kingdoms of the Kathmandu Valley (12)</p> <p>4.1 Breakup of the Malla family.</p> <p>4.2 Rulers of Bhaktapur</p> <p>4.2.1 Raya Malla</p> <p>4.2.2 JitamitraMalla</p> <p>4.2.3 BhupatindraMall</p> <p>4.2.4 RanjitMalla.\</p> <p>4.3 Rulers of Lalitpur</p> <p>4.3.1 SiddhinarsinghaMalla</p> <p>4.3.2 Srinivas Malla</p> <p>4.3.3 YognarendraMalla</p> <p>4.3.4 Six Pradhans</p> <p>4.4 Rulers of Kantipur</p> <p>4.4.1 RatnaMalla</p> <p>4.4.2 Mahendra Malla</p> <p>4.4.3 Pratap Malla</p> <p>4.4.4 Jayaprakash Malla</p> <p>4.5 Downfall of the Mallas</p>
<p>5 Describe the socio-economic and cultural condition of the valley under the Mallas.</p> <p>6 Evaluate the art and architectural works of Malla Kings of the valley.</p> <p>7 Acquaint language and literature under the Mallas</p> <p>8 Give a short glimpse on Nepal's relation with Tibet and India during medieval period</p>	<p>Unit V: Nepal under the Mallas (5)</p> <p>5.1 Socio-cultural, political, economic condition.</p> <p>5.2 Art and architecture</p> <p>5.3 Language and Literature under Mallas.</p> <p>5.4 Relation of Mallas with Tibet and India.</p>
<p>9 Discuss the political conditions of Baise states.</p> <p>10 Explain the political conditions of</p>	<p>Unit VI: History of Nepal beyond the Kathmandu valley (6)</p> <p>6.1 Political history</p> <p>6.1.1 Baise</p> <p>6.1.2 Chaubise</p>

Chaubise states.	6.1.3 Makwanpur
11 Discuss the political history of Makwanpur,	6.1.4 Chaudandi
12 Explain the political history of Chaudandi	6.1.5 Vijayapur
13 State the political history of Vijayapur.	6.2 Inter- state relations between Gorkha and Malla kings of Kathmandu Valley.
14 Describe the political relation of Gorkha with the Malla kings of Kathmandu valley	

4. Instructional Techniques

Two groups of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the units. The second group includes such instructional techniques which should be applied to teach specific unit.

4.1 General Instructional Techniques

Due to the theoretical nature of the course, teacher directed, guided and instructed techniques will be mostly adopted. To impart the required knowledge of the concerned units the teacher will adopt the following methods and techniques.

- Lecture
- Discussion
- Paper presentation of the project
- Brain storming and buzz session
- Report writing assignment

4.3 Specific Instructional Techniques

Units	Topic	Instructional techniques
I	Early History of Nepal	Group discussion
II	Introduction to Lichhavi period	Project work
III	Introduction to Malla Period	Group discussion
IV	Three kingdoms of the Kathmandu Valley	Report writing
V	Nepal under the Mallas	Case study
VI	History of Nepal beyond the Kathmandu valley	Group discussion

5. Evaluation

d. Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

11) Attendance	5 Marks
12) Participation in Learning activities	5 Marks
13) First assignment	10 Marks
14) Second assignment (Midterm exam) assessment	10 Marks
15) Third assignment/ assessment	10 Marks

Total	40 Marks
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Unit wise activities and work for internal evaluation wise

Units	Units	Activities and work for internal Evaluation
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I	Early History of Nepal	group discussion and presentation (class work for overall activities)
II	Introduction to Lichhavi period	Make lichhavi period ruler genealogical Charts and present in class books (Participation in Learning activities 2)
III	Introduction to Malla Period	Prepare tables to compare Malla period of regur's achievements (1 st assignment 3,)
IV	Three kingdoms of the Kathmandu Valley	List out three kingdoms of the Kathmandu valley ruler name and their activities to present in classrooms (1st assignment, 2)
V	Nepal under the Mallas	Make Case study report based on Mallas ruler (2 nd assignment, 5)
VI	History of Nepal beyond the Kathmandu valley	Review Kathmandu related books (3 rd assignment, 5)

5 External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

Objective type question (multiple choice questions 10 x 1 point) 10 Marks

Short answer question (6 questions with 2 or x 5 points) 30 Marks

Long answer questions (2 questions with 1 or x 10 points) 20 Marks

Total

60 Marks

6. Recommended Books and References

6.1 Recommended Books

Upadhyaya, S. R. (2051). *NepalkoprachintathamadhyakalinItihas*. Kathmandu: Ratna Pustak Bhandar.

(For units I-V)

Regmi, D. R. (1969). *Ancient Nepal*. Calcutta: K. L. Mukhophyay. **(For units I & II)**

Gyanwali, S. B. (2019). *Nepalupatyakakomadhyakalinitihis*. Kathmandu: RoyalNepalAcademy. **(For units III to V)**

Dahal, P. (2053). *Nepalkoitihis*. Kathmandu: M. K. Publishers and Distributers. **(For units III to VI)**

Munakami, L. (2025 B.S.). *Mallkalin Nepal*. Katmandu: RatnaPustakBhandar. **(For units I, III to V)**

Sharma B. (2008). *Nepalkoatihisikruprekha*. Banaras: KrishnaKumari Devi. **(For units I to VI)**

6.2 References

Joshi, H. R. (1991). *Pages of forgotten past*. Lalitpur: Joshi Research, Institute.

Shah, R. (1988). *Ancient and medieval Nepal*. New Delh.: Manohar Lal.

Vajracharya, D. (2030). *Lichhavikalkoavilekh*. Kathmandu: CNAS, TU.

Vaidy, Mandhar T. R. & Joshi S. L. (1993). *Social history of Nepal*. New Delhi: Anmol Publications Pvt. Ltd.

Petech, L. (1984). *Medieval history of Nepal*. Rome: Serial Oriental.

Subedi, R. R. (2055). *Baisirajya ko Itihasic Ruprekha*. Kirtipur: CNAS, TU.

Subed, R. R. (2061). *Nepal Ko Tathya Itihas*, Kathmandu: Sajha Prakashan.

Subedi, R. R. (2060). *Achham ko Itihas*. Achham: VaidhyanathChhetraPrakashanSamiti.

Rai, T. B. (2053). *Kirat Bhumi ra Kirat janajivan*. Lalitpur: Uttam Kumar Chamling Rai.

Hist. Ed. 538: Economic History of Modern Nepal (1769-1991)

Course No: Hist. Ed. 538

Nature of course: Theoretical

Level: M. Ed.

Credit hours: 3

Semester: Third

Teaching hours: 48

1. Course Description

This is a specialization course on Economic History of Modern Nepal (1769-1991). This course is designed to make students able to describe the economic history of Modern Nepal. The course emphasizes the wide range of economic activities done during 1769-1990. It gives the emphasis on the historical economic activities and this course is both theory (final exam) and practices (assessment paper, presentation, group work, report writing, term paper based on secondary data or review of literature and document, home assignment, etc) in nature.

2. General Objectives

The general objectives of this course are as follows:

- To enable the students in analyzing the features of land tenure system.
- To make the students familiar with the pattern of agriculture.
- To acquaint the students with forest and water resources of Nepal.
- To impart the knowledge about the causes of the growth and development of industry.
- To familiarize the students with the diversification of internal and external trade.

3. Specific Objectives and Contents

Specific Objectives	Content
<ul style="list-style-type: none"> • Describe the background of land system. • Compare the nature and features of Raikar, Birta, Guthi and Kipat. • Explain the Birta eradication act 2016 (causes and effect) • Explain the contribution of labour force in land system. 	<p>Unit - I : Land Tenure System (7)</p> <p>1.1 Background of land tenure system. 1.2 Nature and features of Raikar, Birta, Guthi and Kipat. 1.3 Birta eradication act 2016 causes and effect 1.4 Contribution of labour force in land system.</p>
<ul style="list-style-type: none"> • State the importance and patterns of agriculture. • Explain the land reforms act 2021 and its implication • State the different types of farming system. • Explain the crops grown in mountain hill, valley and Terai. • Describe the livestock resources of Nepal. • Describe the diary framing system of modern Nepal. 	<p>Unit - II : Pattern of Agriculture (11)</p> <p>2.1 Importance of agriculture. 2.2 Land reforms act 2021 and its implication 2.3 Types of farming system. 2.4 Crops in the mountain, hill, valley and Terai. 2.5 Livestock 2.6 Diary framing</p>
<ul style="list-style-type: none"> • Explain the importance of forest and water resources. • Point out the economic value of forest. • Evaluate the use of forest products. • Analyse the hydropower building • Evaluate the benefits of water resources. • Describe the various methods of 	<p>Unit-III : Forest and Water Resources (10)</p> <p>3.1 Forest- economic value and use of forest product 3.2 Benefit of water resources 3.3 Hydropower 3.4 Irrigation</p>

irrigation in Nepal.	
<ul style="list-style-type: none"> • Explain the growth of cottage and small-scale industries. • Explain the role of micro cottage and small industries. • Discuss the development of agriculture-based industries. • Describe the economic value of forest-based industries. 	Unit IV : Growth and Development of Industry (9) 4.1 Cottage and small scale industries. 4.2 Role of micro cottage and small industries 4.2 Agriculture based industries. 4.3 Forest based industries.
<ul style="list-style-type: none"> • Explore the diversification of internal and external trade. • Describe the pattern of internal trade of Nepal. • Analyze the economic importance of trade relation with India. • Explain the trade relation with Tibet and China. • Describe the trade relation with other countries. 	Unit V: Diversification of Internal and External Trade (11) 5.1 Internal trade of Nepal. 5.2 Trade with India. 5.3 Trade with Tibet and China. 5.4 Trade relation with SAARC countries

4. Instructional Techniques

Two groups of instructional techniques have been recommended. The first group comprises common techniques applicable to most of the units. The second group includes such instructional techniques which should be applied to teach specific unit.

4.1 General Instructional Techniques

Due to the theoretical nature of the course, teacher directed, guided and instructed techniques will be mostly adopted. To impart the required knowledge of the concerned units the teacher will adopt the following methods and techniques.

4. Lecture
5. Discussion
6. Paper presentation of the project
7. Brain storming and buzz session
8. Report writing assignment

4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
Unit I : Land Tenure System	Group discussion
Unit II: Pattern of Agriculture	Home assignment and group presentation
Unit III : Forest and Water Resources	Individual report writing and

	presentation
Unit IV: Growth and Development of Industry	Home assignment presentation
Unit V: Diversification of Internal and External Trade	Case study presentation

6. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities

16) Attendance	5 Marks
17) Participation in Learning activities	5 Marks
18) First assignment	10 Marks
19) Second assignment (Midterm exam) assessment	10 Marks
20) Third assignment/ assessment	10 Marks

Total	40 Marks
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Unit wise activities and work for internal evaluation

Units	Activities and work for internal evaluations
Unit I: Land Tenure System	Group discussion and presentation. (Participation in Learning activities, 5)
Unit II: Pattern of Agriculture	Make a list of patterns of agriculture and presents in class Home assignment and group presentation (2 nd assignment 5,)
Unit III : Forest and Water Resources	Make a table of advantage the forest and water resource (1 st assignment 5,)
Unit IV: Growth and Development of Industry	Case study writing on based on growth and internal of industry (2 nd assignment, 10)
Unit V: Diversification of Internal and External Trade	Present Video of Diversification of Internal and External Trade and make conclusions in relation to China (3 rd assignment, 10)

B, External Evaluation (final examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester. The types and number of questions to be included in the final paper are as follows.

7) Objective type question (multiple choice questions 10 x 1 point)	10 Marks
8) Short answer question (6 questions with 2 or x 5 points)	30 Marks
9) Long answer questions (2 questions with 1 or x 10 points)	20 Marks

Total	60 Marks
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7. Recommended Books and References

6.1 Recommended Books

- Regmi, M.C. (1978). *A study of Nepal economic history (Reprint)*. New Delhi :Manjushri Publishing House. **(For Units I-V)**
- Regmi, M.C. (1984). *The state of economic surplus : Production Trade and resource Mobilization Early 19th century Nepal*. Varonashi :Nath Publishing House. **(For Units I-V)**
- Regmi, M.C. (1988). *An economic history of Nepal (1846-1901)*. Varonashi: Nath Publishing House. **(For Units I-V)**
- Sen, Johar (1977). *Indo-Nepal trade in nineteenth century*. Calcutta :Fifwa K.L.M. **(for Unit V)**
- Thapa, K.B. (1995). *Main aspects of socio-economic and administrative history of Modern Nepal*. Kathmandu :RatnaPustakBhandar. **(ForUnits I-V)**
- Upadhya, S.P. (1990). *Indo-Nepal trade relations*. Jaipur :Nirala Publication **(for Unit V)**
- उपाध्याय, श्री रामप्रसाद (२०५६), *नेपालको सामाजिक, आर्थिक तथाप्रशासनिकइतिहास*, काठमाडौं : रत्नपुस्तक भण्डार (एकाई १-५)
- थापा, के.वि., पि. तिमिल्सिना र एम. दहाल (२०५४), *आधुनिक नेपालको आर्थिक इतिहास*, काठमाडौं : नेपाल र एसियाली अनुसन्धान केन्द्र (इकाई २ **(Four Units I-V)**)
- लुइटेल्, विष्णु बहादुर (२०७०/२०१३), *नेपालको आर्थिक विकासमा लघु, घरेलु तथा सानाउद्योगको भूमिका*, त्रि.वि. जनरल रिसर्च डिभिजन, काठमाडौं, कीर्तिपुर ।

6.2 References

- Haimmendorfr. C.V. Furer (1975). *Himalayan trades: Life in high and Nepal*. London: Hohn Hurray Ltd.
- Kirkpatrik, W. (1971). *An account of the kingdom of Nepal (Reprint)*. New Delhi: Manjushree Publishing House.
- Regmi, M.C. (). *Thatched huts and stucco palaces, peasant and land lords in 19th century Nepal*. New Delhi:Vikash Publishing House.
- Regmi, M.C. (1976). *Land ownership in Nepal*. Berkeley : University of California.

Math Education**Math. Ed. 535: Teaching Undergraduate Mathematics****Subject Code: Math. Ed. 535****Nature of the Course: Theoretical****Level: M.Ed.****Credit hours: 3****Semester: Third****Teaching hours: 48****1.Course Description**

This course is designed for Master's level in mathematics education. It is expected that this course shall sharpen students in content knowledge for teaching at secondary and undergraduate level and provide knowledge in pedagogies. This course is focused especially on abstract algebra, analysis and geometry which are considered as the foundations for learning advance mathematics. This course provides meaningful content learning and pedagogical skills and competencies necessary to run the courses in higher secondary and undergraduate level. It also intends to impart the students of mathematics that is particularly necessary to the teachers who are teaching at undergraduate level as well as at secondary level. This course is an enrichment course to the teachers to make them fit into dealing contents of school mathematics and undergraduate mathematics meaningfully. The contents for this enrichment course are simplified and made meaningful for the purpose of teaching. Besides the content enrichment, it provides undergraduate mathematics teaching instructional models to the students – an appropriate pedagogy for actionable learning. This course makes students able to design lessons for undergraduate courses using different instructional strategies.

2.General Objectives

The general objectives of this course are as follows:

- To enhance the prospective teachers to fit and link appropriate philosophy and learning theory in teaching mathematics at secondary and undergraduate level.
- To enrich the prospective teachers on the fundamental mathematical contents for teaching at schools and undergraduate level.
- To introduce different instructional strategies used in teaching undergraduate mathematics.
- To enhance competencies in using problem base learning/ project base learning like relevant teaching models suitable for schools and undergraduate level mathematics teaching.
- To boost the capacity of designing lessons for undergraduate courses using instructional theories and ICTs.

3.Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the nature of mathematical knowledge, its existence and justification with respect to different philosophical positions • Explain how different philosophical positions influence/imply to the different nature of learning • Examine the prevailing mathematics classroom practices in the light of 	<p>Unit I: Philosophy of Mathematics and its Implication to Learning Theories (6)</p> <p>1.1 The nature of mathematical knowledge, its existence and justification</p> <p>1.2 Influence/Implications of different philosophical positions on mathematics learning theories</p> <p>1.3 Philosophy/ideology and classroom</p>

- philosophical positions
- Differentiate children learning and adult learning behaviours in mathematics learning
- Demarcate the differences between concepts in other field of knowledge and mathematics
- Expose the system of mathematical reasoning as mathematicians do for generating mathematics.
- Explain the ways of writing proofs of a theorem and solving mathematical problem
- Analyse the mathematical writing using language of logic, operators, signifiers, qualifiers etc.
- Teach writing language of mathematics – use of qualifier, quantifier and connecting ideas.
- Use different models of theorem proving for facilitating students in reading mathematics.
- Review by contrasting different instructional strategies.
- Analyse the relevance of different instructional strategies for undergraduate mathematics teaching
- Use problem base learning in teaching mathematics at secondary and undergraduate level.
- Get experience on designing lessons based on PBL and use the designed lesson in classroom teaching as action research project and make reflection.
- Reflect on instructional practices at colleges based on research studies.
- Critically examine the relevance of different instructional strategies in undergraduate mathematics teaching. Use open courseware and ICTs in teaching undergraduate mathematics

practices

Unit II. Mathematical Reasoning and Proof (7)

- 2.1 Mathematical Concepts and its development
- 2.2 Mathematical reasoning and conceptualization
- 2.3 Ways of mathematical reasoning and conceptualization
- 2.4 Intuition and proof
- 2.5 Structure of proof and techniques in mathematics for the undergraduate level.

Unit III. Instructional Strategies (8)

- 3.1 Different instructional strategies for undergraduate mathematics
 - 3.1.1 Review of different instructional strategies
 - 3.1.2 Problem Solving
 - 3.1.3 Collaborative learning/cooperative learning
 - 3.1.4 Discovery/Inquiry based learning
 - 3.1.5 Project-Based learning
- 3.2 .Problem-Based Learning (PBL)
 - 3.2.1 Historical Development of Problem-Based Learning (PBL) and its practices.
 - 3.2.2 Rationale of PBL introduction in undergraduate mathematics teaching
 - 3.2.3 Designing and use of problem base learning(PBL) in undergraduate mathematics teaching
 - 3.2.4 Models of PBL and some skeptics regarding PBL
 - 3.2.5** Design the problems of undergraduate mathematics content based on PBL.

- Present the mathematics into the form of reducing abstraction in course of teaching algebra.
- Utilize the fundamentals and basics of algebra for developing a theorem and solving a problem in teaching and guiding the students solving problem.
- Reconstruct the fundamentals of algebra through extensive journey over the contents of algebra that are usually taught in at secondary schools and undergraduate level.
- Examine the links between the different concepts of algebra.
- Examine and analyse the missing links in teaching algebra in the designated level.
- Present and fit the missing link between different mathematics in course of teaching some courses in the designated level.
- Prepare some lessons of algebra for teaching using different methods of proof techniques.

Unit IV. Content Enrichment in Algebra(9)

4.1 Conceptual development of algebra:

Transition from arithmetic to algebra

4.2 Number theory and theory of equation

4.2.1 **Number Theory:**

- Divisibility,
- Prime numbers,
- Division Algorithm,
- GCD,
- Euclidean Algorithm,
- Fundamental theorem of Arithmetic,
- Different Base number system,
- Modular arithmetic,
- Diophantine analysis

4.2.2 **Theory of Equation:**

- Polynomials,
- Factor theorem,
- Fundamental theorem of Algebra,
- Quadratic formula,
- Rational roots theorem and some consequences,
- Solving higher order polynomials(cubic equation, Cardan's contribution, fourth degree and higher order equation)

4.3. Structure and proof in Modern Algebra and techniques of proof for the undergraduate level.

4.4 .Readings of selected contents of abstract and linear algebra to analyze the method of mathematical reasoning and proof and developing teaching/learning lessons –

4.4.1 Fundamental concepts in modern algebra

- Groups: Group, Subgroup, Lagrange's theorem and its interpretation, homomorphism and isomorphism, fundamental theorem of homomorphism, Normal subgroups, Quotient group, Permutation group
- Rings: Ring, subring, Ring homomorphism, ideals, various

integral domains, polynomial ring, gauss lemma, Einstein's criterion for testing irreducibility and its applicability, rational root theorem,

- Fields: Fields and its extension, algebraic and transcendental element, splitting field and algebraic field, fundamental theorem of algebra,
- Vector space: vector spaces, basis and dimension, linear transformations, eigenvalues and eigenvectors.

4.5 Difficulties and issues in learning algebra

Unit V: Content Enrichment in Analysis(9)

- Present the mathematics into the form of reducing abstraction in course of teaching analysis, number theory, topology etc.
 - Utilize the fundamentals and basics of analysis for developing a theorem and solving a problem in teaching and guiding the students solving problem.
 - Reconstruct the fundamentals of analysis through extensive journey over the contents of analysis that are usually taught in at secondary schools and undergraduate level.
 - Examine and analyse the missing links in teaching analysis in the designated level.
 - Present and fit the missing link between different mathematics in course of teaching some courses in the designated level.
 - Prepare some lessons for teaching analysis using different methods of proof techniques
- 5.1 Fundamentals of Real and Complex Analysis.
- 5.1.1 Field axiom,
- 5.1.2 Order axiom
- 5.1.3 Completeness axiom)
- 5.2 Historical approach of real analysis: Transition from calculus to analysis
- 5.3 Analysis from real to complex
- 5.4 Building real number and complex number
- 5.5 Function and modeling
- 5.6 Readings of selected contents of real analysis to analyze the method of mathematical reasoning and proof
- 5.6.1 $\epsilon - \delta$ definition of limit and continuity and its interpretation,
- 5.6.2 Relation between the limit of the set, limit of function and limit of the sequence,
- 5.6.3 Fundamental theorem of calculus its meaning,
- 5.6.4 Relation between derivative and integration and its interpretation
- 5.6.5 Topological properties on real line
- Interval,
 - Interior of a set,
 - Open and closed set,
 - limit, closure, boundaries

5.7. Structure of proof in Analysis and proving techniques for the undergraduate level.

- Use ideas that are very relevant to reducing abstraction in course of teaching geometry at secondary schools and undergraduate level.
- Utilize the fundamentals and basics of different system of geometry for developing a theorem and solving a problem in teaching and guiding the students solving problem.
- Reconstruct the fundamentals of geometry through extensive journey over the contents of geometry that are usually taught in at secondary schools and undergraduate level.
- Examine and analyse the missing links in teaching geometry in the designated level.
- Present and fit the missing link between different mathematics in course of teaching some courses in the designated level.
- Prepare some lessons for teaching geometry using different methods of proof techniques

Unit VI: Content Enrichment in Geometry (9)

6.1 Historical and conceptual development of geometry

6.2. Different systems of geometry:

6.2.1 Euclidean Geometry

- Foundations
- Logical shortcomings

6.2.2 Non-Euclidean Geometry

- Emergence
- Axiomatic foundations

6.2.3 Analytic Geometry

- Analytic representation of plane,
- Solids and conic sections,
- Measurement and volume

6.2.4 Projective geometry

- Homogeneous coordinates,
- Perspectivity
- Projectivity
- Duality
- Cross ratio

6.2.5 Transformation geometry

- Isometric
- Non-isometric
- Inversion

6.2.6 Topological geometry

- Graph
- Network of plane
- Surface

6.3 Structure of proof in geometry and proving techniques

6.4 Four Pillars of Geometry

4. Instructional Techniques

The instructor will select the method or methods of instruction most suitable for a particular topic. It is quite acceptable to select more than one method and combine them into a single period of instruction whenever it is needed. The general and specific instructional techniques are described below.

4.1 General Instructional Techniques

Following general instructional techniques will be adopted according to the need and nature of the lesson:

- Lecture
- Discussion
- Demonstration
- Presentation sessions
- Observation of class
- Critical overview
- Preparing reports and presentation
- Project work
- Problem solving
- Individual work
- Group work

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Philosophy/ideology and its implication in classroom practices (group discussions/term paper)
II	<ul style="list-style-type: none"> • Writing mathematical proofs – challenges for the young learners.(Essay/term paper) • Different methods of writing proofs and the language of mathematics for writing.(Essay)
III	<ul style="list-style-type: none"> • Assignment of writing essays on different instructional strategies (individual contribution) and sharing with the friends using moodle platform for comments and suggestion and finalization of the paper. • Online discussion with the students in different instructional strategies and PBL. • Designing lessons on PBL and use them in classroom teaching and prepare a report reflecting the practice.(group work)
IV, V and VI	<ul style="list-style-type: none"> • Readings and reflecting are the major activities with assignments for each content (different group will do work on different topics and inter groups sharing in seminar). • Learning difficulty of undergraduate students in modern algebra, analysis, geometry and possible pedagogical suggestion(Group project) • Writing of papers in different mathematical problem solving and the methods of solving • Sharing of the assignments to the community of learners (on line, seminar, and presentation). • Some open-book type tests given to the students to complete

in a restricted timeframe as designed by the tutor/Professor.

- Some open-book type tests given to the students to complete in a restricted timeframe as designed by the tutor.
- Preparation of teaching, learning and training modules under the guidance of instructor or main professor
 - Note: Unit IV – VI are used for teaching preparation of the students. The students have to go through the text suggested for these units and prepare teaching, learning, and training modules in groups and use in peer teaching.

5. Evaluation

5.1. Internal Evaluation (40%)

Internal evaluation will be conducted by the course teacher based on the following activities:

• Attendance	5 marks
• Participation in learning activities	5 marks
• First assignment/mid-term exam	10 marks
• Second assignment/assessment	10 marks
• Third assignment/assessment	10marks

Total	40 marks
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5.2. External Examination (60%)

Examination Division of the Dean office, Faculty of Education will conduct final examination at the end of the semester. The number of questions of different types and marks allocated to each type will be as follows:

• Objective questions (multiple choice) (10 x1)		10 marks
• Short answer question 6 with 2 OR questions (6 x 5)		30 marks
• Long answer questions 2 with 1 OR questions (2 x 10)		20 marks

Total	60 marks
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6. Recommended Books and References

6.1 Recommended Books

Alan, S.& Alice F. A. (2011). *The mathematics that every secondary school mathematics teacher needs to know*. Routledge (Units II, IV, V & VI)

Axler, S., & Ribet, K.A. (2008). *Undergraduate texts in mathematics: Readings in mathematics*. Springer. (Unit VI)

Barbara J.D., Susan E.G., & Deborah, E. A. (eds) (2001). *The power of problem-based learning*. Springer Verlag. (Units I and III)

Elena N. (2008). *Amongst mathematicians: Teaching and learning mathematics at university level*. Springer (Unit I and II full reading)

Erdman, J.M. (2011). *Companion to real analysis*. Portland State University. (Unit V)

- Ernest, P. (1991). *The philosophy of mathematics education*. RoutledgeFalmer. (Unit I)
- Ernest, P. (2018). *Philosophy of mathematics education today*. Springer.(Unit I)
- Finam, M. B. (2001). *Fundamentals of linear algebra*. Arkansas Tech University(Unit IV)
- Gillies, R. M. & Ashman, A. F. (2003). Cooperative learning. London: RoutledgeFalmaer. (Unit III)
- Haggarty, R. (1993). *Fundamentals of mathematical analysis* (2nded.). England: Addison-Wesley Publishers Ltd.(Unit V)
- John S. W.(2010). *Four pillars of geometry*. Springer (Unit VI)
- Judson, T. W. & Beezer, R. A. (2015). *Abstract algebra: Theory and applications*. (Unit V)
- Sundstrom, T. (2014). *Mathematical reasoning: Writing and proof*. Pearson.(Unit II)
- Ulrich D.& Pamela, G. (2011). *Reading, writing and proving: A closer look at mathematics*. Springer (Units II, IV and V)

1.2 References

- (2010). *Complete mathematics, teach yourself*.
- Ernest, P. (1998). *Social constructivist philosophy of mathematics education*. Newyork: State University of New York.
- Sthal, S. (1999). *Real analysis: A historical approach*. Newyork: John Wiley & Sons, InC.
- The existence of Real Numbers, POME, 2018; Vol: 30*

Math. Ed.537: Differential Geometry

Nature of the course: Theory

Course no.: Math. Ed.537**Credit hours: 3****Level: M.Ed.****Teaching hours: 48****Semester: Third****1. Course Description**

This course is designed to provide wider knowledge and skills on differential geometry for Math Educators. It comprises a range of skills varies from curves in space to intrinsic and extrinsic properties on surface. This course deals with curves and surfaces in 3-space using the tools of calculus and linear algebra. Topics covered in this course includes local and global properties of curves and surfaces. The course is divided in five major units. It starts with curves in space and then introduce some special curves. Then the course introduces surface and its fundamental form. Finally, the course deals with intrinsic and extrinsic properties on surface.

2. General Objectives

The general objectives of this course are as follows:

- To utilize the concept of a space curve and its types in problem solving
- To apply basic results of surface to solve related problems
- To interpret the fundamental forms of surface
- To explore and prove local properties on surface
- To calculate and apply fundamental coefficients of surface in problem solving

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> ● To understand curves in space, and to find its class ● To define, derive, and compute tangent line and its related theorems ● To compute order of contact between curve and surface and apply it in problem solving ● To explain osculating plane, derive its equation and apply it in problem solving and theorem proof ● To analyze fundamentals of space curve and derive its equations ● To define curvature and torsion and apply it in problem solving and theorem proof ● To state and prove fundamental theorem of space curve 	<p>Unit I: Curves in Space (10)</p> <p>1.1 Space curve and its class</p> <p>1.2 Tangent to the space curve</p> <p>1.3 Order of contact</p> <p>1.4 Osculating plane</p> <p>1.5 Fundamentals on space curve</p> <p>1.6 Curvature, torsion and screw curvature</p> <p>1.7 Intrinsic equation</p>
<ul style="list-style-type: none"> ● To explain helix and prove its related theorems ● To define osculating circle and analyze its properties ● To analyze osculating sphere and prove its properties and related theorems ● To compare Evolute and involute and compute its curvature and torsion ● To state Bertrand curves and prove its properties 	<p>Unit II: Special Curves (9)</p> <p>2.1 Cylindrical helix</p> <p>2.2 Osculating circle and osculating sphere</p> <p>2.3. Evolute and involutes</p> <p>2.4 Bertrand curves and its properties</p>

<ul style="list-style-type: none"> ● To define surface and find its class ● To analyze regular point, singular point ● To explain parameter transformation and prove its geometric significance ● To analyze tangent plane and normal line and use it in problem solving and theorem proof ● To explain family of surface, and evaluate characteristic line, envelope, characteristic point and edge of regression, and to prove related theorems ● To compare ruled surface and its kinds and use it in problem solving and theorem proof ● To explore developable surface associated with space curves and prove related theorems 	<p>Unit III: Surface (10)</p> <p>3.1 Surface and its Class</p> <p>3.2 Regular and Singular Point</p> <p>3.3 Transformation and its geometric significance</p> <p>3.4 Tangent plane and normal line</p> <p>3.5 Family of surface</p> <p>3.6 The ruled surface</p> <p>3.7 Developable surface</p>
<ul style="list-style-type: none"> ● To interpret first and second fundamental forms geometrically and apply them in proving theorems ● To calculate first and second fundamental coefficients of surface ● To prove Weingarten equations ● To explain direction component and direction coefficient ● To define family of curves and its differential equation ● To explore orthogonal trajectories and its differential equation ● To compare double family of curves and its orthogonality 	<p>Unit IV: Fundamental Forms (9)</p> <p>4.1 Fundamental forms of surface</p> <p>4.2 Fundamental coefficients of surface</p> <p>4.3 Weingarten equations</p> <p>4.4 Direction coefficients and related results</p> <p>4.5 Family of curves</p> <p>4.6 Orthogonal trajectories</p> <p>4.7 Double family of curves</p>
<ul style="list-style-type: none"> ● To define intrinsic and non-intrinsic properties on surface ● To explain normal curvature, principal curvature, normal section, principal section, principal direction and derive its differential equation ● To prove Meusnier's theorem ● To define developable surface and prove related theorems ● To understand line of curvatures and prove related theorems ● To state and prove Rodrigue's formula, Monge's theorem, Euler's theorem, Joachimsthal's theorem ● To compute conjugate direction and prove related theorems ● To define asymptotic lines and prove related theorems ● To explore fundamental equation and compute christoffel coefficients ● To state and derive Gauss characteristic equation ● To derive Mainardi-codazzi equation 	<p>Unit V: Properties on Surface (10)</p> <p>5.1 Local non-intrinsic property of surface</p> <p>5.2 Normal curvature and related theorems</p> <p>5.3 Meusnier's theorem</p> <p>5.4 Developable surface</p> <p>5.5 Minimal surface</p> <p>5.6 Line of curvature and its properties</p> <p>5.7 Rodrigue's formula, Monge's theorem, Euler's theorem,</p> <p>5.8 Joachimsthal's theorem</p> <p>5.9 Conjugate direction and its properties</p> <p>5.10 Asymptotic lines and related theorems</p> <p>5.11 The fundamental equation of surface theorem</p> <p>5.12 Gauss characteristic equation</p> <p>5.13 Mainardi-codazzi equation</p>

Note: The figures in the parentheses indicate approximate teaching hours allocated for respective units.

4. Instructional Techniques

The instructor will select the method or methods of instruction most suitable for a topic. It is quite acceptable to select more than one method and combine them into a single period of instruction whenever it is needed. The general and specific instructional techniques are described below.

4.1 General Instructional Techniques:

The following general method of instruction will be adopted according to the need and nature of the lesson:

- Lecture
- Demonstration
- Discussion
- Group work

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> ● Multimedia presentation ● Project work
II	<ul style="list-style-type: none"> ● Multimedia presentation ● Project work
III	<ul style="list-style-type: none"> ● Project work and presentation
IV	<ul style="list-style-type: none"> ● Multimedia presentation ● Project work ● Group Discussion
V	<ul style="list-style-type: none"> ● Multimedia presentation ● Project work ● Group Discussion

5. Evaluation

5.1 Internal Evaluation (40%)

Internal evaluation will be conducted by course teacher based on following activities

● Attendance	5 marks
● Participation in learning activities	5 marks
● First assessment (assignment)	10 marks
● Second assessment (written test)	10 marks
● <u>Third assessment (written test)</u>	<u>10 marks</u>
Total	40 marks

5.2 External Examination (60%)

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of the semester. The number of questions and their types along with their marks allocated to each type will be as follows:

● Objective questions (multiple choice) (10 x 1)	10 marks
● Short answer questions 6 with 2 OR questions (6 x 5)	30 marks
● <u>Long answer questions 2 with 1 OR question (2 x 10)</u>	<u>20 marks</u>
Total	60 marks

6. Recommended and References

6.1 Recommended Books

Gupta, P. P., Mallik, G. S & Pundir, S. K., (2011). *Differential geometry*. Meerut: Meerut Pragati Prakashan. (Units I -V)
Koirala S. P, & Dhakal B. P. (2068). *Differential geometry*. Sunlight Publication, Kirtipur, Nepal. (Units I -V)

6.2 Reference Books

Carmo, M. P. (1976) *Differential geometry of curves and surfaces*. Englewood Cliffs, NJ: Prentice-Hall (Units I & II)

Lal, B., (1969). *The three-dimensional differential geometry*. Delhi: Atma Ram and Sons. . (Units I-II)

Lipschutz, M. M., (2005). *Theory and problems of differential geometry- Schaum's outline series*. Delhi: Tata McGraw-Hill Publishing Company Ltd. 6.

Wilmore, T. J., (2006). *An introduction to differential geometry*. Delhi: Oxford University Press.. (Units I -V)

Math. Ed. 538: Measure Theory and Topology

Nature of course: Theoretical

Course number: Math. Ed. 538

Level: M. Ed.

Credit hours: 3

Semester: Third

Teaching hours: 48

1. Course Description

This course is designed to provide students with the sound knowledge of measure theory and topology. The topics on measure theory deal with the theory of measure and integration in a simple setting of Euclidean and abstract space. The theory first uses the familiar facts from calculus. Later on, a more general treatment based on abstract notions characterized by axioms with less geometric content is given. As a preliminary step, students study outer measure and Lebesgue measure of a set, measurable functions, Lebesgue integral, L^p classes and integration in Euclidean and abstract spaces. The topics in topology deal with the definition of metric spaces as topological spaces, generalized topological spaces and their properties.

2. General objectives

Upon completion of this course, students will be able to

- grasp the basic concept of the Euclidean space R^n
- realize the knowledge of outer measure, Lebesgue measure and measurable functions with their properties
- develop the understanding of Lebesgue integrals
- deal with the properties of L^p space
- comprehend the abstract treatments of Lebesgue measure and integration
- grasp the basic concept of metric space and topological space
- extend the metric space to more general concept of topological space
- deal with the properties of a distance function and explore the useful aspects of metrics
- deal with the properties of connectedness and compactness in topological spaces

3. Specific Objectives and Contents

Unit	Specific Objectives	Contents	Periods
I	<ul style="list-style-type: none"> • To understand the points and sets in R^n, n - dimensional interval and its volume • To realize the meaning of outer measure • To understand the properties of outer measure: nonnegative extended real valued, monotonicity and countable subadditivity • To understand measurable sets and their properties • form a set called Cantor set: an uncountable set with zero outer measure • To define measurability of a set E in R^n and introduce the Lebesgue measure for a measurable set • To define σ - algebra, Borel σ - algebra and prove some related theorems • To prove the Caratheodory theory 	Unit I: Lebesgue measure and outer measure (7) 1.1 Points and sets in R^n 1.2 Outer measure of a set E in R^n 1.3 Cantor set 1.4 Lebesgue measurable sets and Lebesgue measure 1.5 σ - algebra and Borel σ - algebra 1.6 Caratheodory theorem	

II	<ul style="list-style-type: none"> To prove the properties of the measurable functions To discuss Egorov's theorem To prove the results related to convergence in measure 	Unit II: Lebesgue Measurable Functions (6) 2.1 Lebesgue measurable function and its properties 2.2 Semi continuous function and its properties 2.3 Egorov's theorem 2.4 Convergence in measure and its properties
III	<ul style="list-style-type: none"> To explain and prove the properties of Lebesgue integral including Monotone convergence theorem, Tchebyshev's inequality, Fatou's lemma, Lebesgue dominate convergence theorem for both non-negative and arbitrary measurable functions To establish the relation between Riemann and Lebesgue integrals 	Unit III: Lebesgue Integrals (8) 3.1 Integral of non-negative functions 3.2 Properties of the integral 3.3 Integral of arbitrary measurable functions 3.4 Relation between Riemann and Lebesgue integrals
IV	<ul style="list-style-type: none"> To explain L^p spaces To prove different inequalities in L^p space To explain l^p classes To prove the properties of l^p classes To state the properties of additive set function and measure To prove the results related to measure space. 	Unit IV: L^p Classes and Abstract Integration (8) 4.1 L^p classes 4.2 Young's, Holder's and Minkowski's inequalities 4.3 l^p classes 4.4 Banach and metric space properties 4.5 L^2 space 4.6 Additive set function, measures and their properties 4.7 Measure space 4.8 Measurable function on measure space and its properties
V	<ul style="list-style-type: none"> To define metric in terms of distance function To define open and closed sets on a general metric space To define topological space and its interior, closure and boundary To define the basis and sub-basis and extension to topological space To determine topologically equivalence spaces with the help of continuous functions To discuss topological properties and construct subspaces 	Unit V: Topological Spaces (8) 5.1 Definition and examples of metric spaces 5.2 Open sets and closed sets in metric spaces 5.3 Definition and some examples of topological spaces 5.4 Interior, closure and boundary 5.5 Basis and sub-basis 5.6 Continuity and topological equivalences 5.7 Topological properties and Subspaces

VI	<ul style="list-style-type: none"> To determine the properties of connected and disconnectedness To prove theorems on connectedness and draw their applications To establish the properties of path connected spaces 	Unit VI: Connectedness (6) 6.1 Connected and disconnected spaces 6.2 Theorems on connectedness 6.3 Connected subsets of the real line 6.4 Applications of connectedness 6.5 Path connected spaces
VII	<ul style="list-style-type: none"> To define compactness and establish it as a topological property To use continuity in the compact spaces To derive the properties of compactness 	Unit VII: Compactness (5) 7.1 Compact spaces and subspaces 7.2 Compactness and continuity 7.3 Properties related to compactness

Note: The figures in the parentheses indicate approximate teaching hours to respective units.

4. Instructional Techniques:

4.1 General techniques:

- Lecture
- Discussion
- Question-Answer
- Presentation
- Project work

4.2 Specific Instructional Techniques:

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> Individual and group discussions on outer measure and Lebesgue measure of a set Some problem sets to prove theorems related to outer measure Assignments on Lebesgue measure and measurable sets
II	<ul style="list-style-type: none"> Individual and group discussions on measurable functions Group and individual assignments on problems related to measurable functions
III	<ul style="list-style-type: none"> Individual and group discussions on Lebesgue integrals Group and individual assignments on problems related to integrals and their applications
IV	<ul style="list-style-type: none"> Individual and group discussions on L^p and l^p classes Individual and group assignments on the related problems on these classes, Banach and Hilbert spaces Individual and group discussions on the set function, measure and measurable sets of the abstract space Assignments of the related problems
V	<ul style="list-style-type: none"> Individual and group discussions on metrics, metric spaces, topologies, topological spaces and theorems on topological spaces

	<ul style="list-style-type: none"> • Individual and group assignments on various problems on the spaces
VI	<ul style="list-style-type: none"> • Individual and group discussions on connectedness and disconnectedness of a set • Group and individual assignments on related problems of connectedness and disconnectedness
VII	<ul style="list-style-type: none"> • Individual and group discussions on compactness and noncompactness of a set • Group and individual assignments on related problems of compactness and noncompactness

5. Evaluation

5.1 Internal evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

• Attendance	5 marks
• Participation in learning activities	5 marks
• First assignment / written test	10 marks
• Second assignment / project work	10 marks
• Third assignment / assessment	10 marks

Total	40 marks

5.2 External evaluation (Final Examination) 60%

Faculty of Education, Examination division will conduct final examination of weight 60 marks at the end of semester. The number of questions and marks allocated to each type will be as follows:

• Objective questions (Multiple Choice of Items) (10 x 1)	10 marks
• Short answer questions 6 with 2 OR questions (6 x 5)	30 marks
• Long answer questions 2 with 1 OR question (2x 10)	20 marks
-----Total	
60 marks	

6. Recommended Books and References

6.1 Recommended Books

- Croom, F. H. (1998). *Principle of topology*. Orlando, Florida (Units: **V**, **VI** and **VII**)
- Wheeden, R. I. & Zygmund, A. (1977). *Measure and integral*. New York (Units: **I**, **II**, **III** and **IV**)

6.2 Referances

- Cohn, D. L. (1993). *Measure theory*. Birkhauser. Boston.
- Jain, P. K. & Gupta, V. P. (1986). *Lebesgue measure and integration*. New Delhi.
- Munkres, J. R. (1998). *Topology*. New Delhi: Prentice Hall of India.
- Pandey, U.N.(2016). *Real Analysis*. Kathmandu: Bidyarthi Publishers and Distributions, Bhotahiti.

Math. Ed. 539: Studies in Mathematics Education**Course Number: Math. Ed. 539****Level: M. Ed.****Semester: Third****Nature of the Course: Theoretical****Credit hours: 3****Teaching hours: 48****1. Course Description**

This course aims at giving exposure to students about some of the books written in mathematics education that are used all over the world extensively. It also aims to let students pick up global issue which is locally important, write an essay and give seminar related to components of mathematics education, like nature of mathematics, pedagogies for mathematics, teacher development, assessment strategies and research agenda.

2. General Objectives

The general objectives of this course are as follows:

- To make the students knowledgeable about the strength of books written on mathematics education and enable to appraise them.
- To provide students with in-depth exposures to different curriculum and their materials around the globe.
- To make the students philosophically aware regarding mathematics education
- To describe qualitative research approach in mathematics education
- To make the students able to prepare contextual mathematics curriculum and able to analyze critically the existing mathematics curriculum
- To make the students able in preparing and presenting analytical write-ups and participate actively in the seminar of mathematics education.

3. Specific Objectives and Contents

Specific Objectives	Contents
	Unit I: Nature of Mathematics and Mathematics Education (10)
<ul style="list-style-type: none"> • Explain different views on nature of mathematics and math education • Address different issues related to mathematical knowledge. • Illustrate the philosophical roots of mathematical concept construction and nature of mathematical knowledge. • Explain the dialogical and cultural nature of mathematics. • Compare and contrast among different world views of mathematics. 	<ul style="list-style-type: none"> 1.1 Views on the nature of mathematics 1.2 Views on the nature of math education 1.3 Philosophical roots of mathematical concept construction 1.5 Dialogical nature of mathematics 1.6 Cultural nature of mathematics 1.7 Different world views: Newtonian, Einsteinium, and Chaotic
	Unit II: Curriculum Studies (9)
<ul style="list-style-type: none"> • Explain the concept with its role and effects of fundamental human interest in curriculum formation. • Develop the concept of comprehensive/contextualized/Inclusive mathematics curriculum. • Explain the parameter of analyzing the 	<ul style="list-style-type: none"> 2.1 Fundamental human interest in curriculum formation (Technical, Practical and Emancipatory) 2.2. Ideas of constructing comprehensive (Inclusive) mathematics curriculum (local needs base ,students ability and interest, needs and orientation of country, diversity friendly and

- curriculum
- Explain the different approaches to math curricula of Nepal.
 - Give critical appraisal of math curriculum of Grade IX to Bachelor level.
 - Describe the status of material used in mathematics teaching.

- Explain different research paradigms from positivism to Criticalism, and Connect the idea of research paradigm with various research areas in mathematics education.
- Explain the major shift in mathematics education research focusing on issues of cultural diversity mathematics education.
- Justify why social turn gained more attention in research work mathematics education research.
- Make critical appraisal how individual experience, reflection can become a knowledge focusing on ethnography, auto-ethnography, phenomenology, case study, action research
- State mathematics literacy as a research issue.

- Present the review of the assigned books/ Chapters.
- Give critical appraisal of the assigned books/ chapters.

global practices)

- 2.3. Parameter for analyzing the curriculum:
- 2.3.1 Emerging knowledge and skill, philosophies, discourse, ideas
 - 2.3.2 Situation analysis (market, state need, learners need , community need)
 - 2.3.3 Policy analysis
 - 2.3.4 Educational forces (Internal practices /power, civil society)
- 2.4. Studies of IX to Bachelor's math curricula of Nepal
- 2.5. Status of materials used in mathematics teaching

Unit III: Research in Mathematics Education (13)

- 3.1 Simple introduction of different research paradigms such as
- 3.1.1 Positivism
 - 3.1.2 Post-positivism
 - 3.1.3 Interpretivism
 - 3.1.4 Criticalism
- 3.2 Issues of cultural diversity in mathematics education research
- 3.3 Strong social turn in mathematics education research
- 3.4 Ethnography, Auto-ethnography, phenomenology, Narrative Inquiry, Case study, Action research
- 3.5 Mathematics literacy as a research issue

Unit IV: Review and Appraisal of Selected Books (8)

- 4.1 Critical issues in mathematics education
- Social Justice and Mathematics education: Issues, Dilemmas, Excellence and Equity (Chapter 23, pp. 319-336)
- 4.2 Issues in mathematics teaching
- What values do you teach when you teach mathematics? (Chapter 7, pp. 93-104)
- 4.3 What is mathematics really?
- 4.4 18 unconventional essays on the nature of

mathematics

- Socratic dialogue on mathematics (pp. 1-16)

4.5 New mathematics education research

4. Mathematics Knowledge and political power (pp. 11-22)

- Challenges for mathematics education research (pp. 33-50)
- Mathematics learning as a social practice (pp. 147-152)
- Materialization and organization: Towards a cultural anthropology of mathematics (pp. 23-32)

- Prepare and present analytical write-up related to the different aspects of mathematics education.

Unit V: Analytical Write-up and Organization Seminar (8)

- Conduct a seminar on the assigned issue of mathematics Education.

5.1 Book Review/ Chapter Review

5.2 Long Essays

5.3 Seminar

Note: The figures in the parentheses indicate the approximate teaching hours allocated to the respective units.

4. Instructional Techniques

The instructor will select the method or methods of instruction most suitable for a particular topic. It is quite acceptable to select more than one method and combine them into a single period of instruction whenever it is needed. The general and specific instructional techniques are described below.

4.1. General Instructional Techniques

Following general instructional techniques will be adopted according to the need and nature of the lesson:

- Group work
- Demonstration
- PowerPoint presentation
- Project work
- Lecture

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
I	<ul style="list-style-type: none"> • Internet browsing followed by discuss • Multimedia presentation
II	<ul style="list-style-type: none"> • Bringing curriculum of different countries and compare and contrast among their key ingredients. • Multimedia presentation • Project work
III	<ul style="list-style-type: none"> • Internet browsing for the sample of different researches on social and cultural aspects of mathematics • Discussion

- Project work
- IV
- Intensive and extensive reading of different seminal textbook written on the issues of mathematics education
 - Project work
 - Multimedia presentation
 - Group discussion
- V
- Book Review (1000 words approx 4 pages): The following key features must be included:
 - General information (Author, date, title, publisher, place of publication)
 - Summary of key sections of the book
 - Summary of key issues presented in each sections/chapter of the book
 - Information about the Potential reader of the book
 - Long Essays (4000 words approx 16 pages): Students are expected to select an issue of global/local in nature in mathematics education and address it with sufficient facts figures and arguments in their own style. Conventional as well as unconventional way of writing is desired.
 - Seminar: (1500 words approx 6 pages): Brainstorming session is required in order to students' exposure to select a good and burning issue in mathematics education. For example: Should we prepare world citizen through our mathematics education course?
 - Presentation
 - Project work
 - Multimedia presentation

5 Evaluation

5.1 Internal Evaluation (40%)

Internal evaluation will be conducted by course teacher based on following activities

- | | |
|--|----------|
| • Attendance | 5 marks |
| • Participation in learning activities | 5 marks |
| • First assessment(assignment) | 10 marks |
| • Second assessment(written test) | 10 marks |
| • Third assessment(written test) | 10marks |

Total	40 marks
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5.2 External Examination(60%)

Examination Division of the Dean's office will conduct final examination at the end of the semester. The number of questions and its type with marks allocated will be as follows:

- | | |
|---|-----------------|
| • Objective questions (multiple choice) (10 × 1) | 10 marks |
| • Short answer question 6 with 2 OR questions (6 × 5) | 30 marks |
| • Long answer questions 2 with 1 OR question (2 × 10) | 20 marks |
| Total | 60 marks |

6. Recommended Books and References

6.1 Recommended Books

- Doll, W. E. (1993). *A post-modern perspective on curriculum*. New York: Teachers College Press. (Unit II)
- Ernest, P., Greer, B. & Shreeraman, B. (Ed). (2009). *Critical issues in mathematics education*. Charlotte, NC: Information age publishing. (Unit V)
- Gates, P. (2001). *Issues in mathematics teaching*. London and NY: Routledge and Falmer (Unit I, IV)
- Hersh, R. (Ed) (1997) *What is mathematics really?* NY: Oxford University Press. (Unit I, IV)
- Hersh, R. (Ed.) (2006). *18 unconventional essays on the nature of mathematics*. NY: Springer. (Unit I)
- Maaz, J. & Schloeglmann, W. (Ed) (2006). *New mathematics education research and practice*. Rotterdam, The Netherlands: Sense (Unit III)

6.2 References

- Acharya B.R. (2017). *Studies in mathematics education*. Dikshant Publication: Kathmandu. (Unit I to V)
- Acharya , B. R. (2017). *Diversity in mathematics education*. Dikshant Publication: Kathmandu. (Unit II & III).
- Bachman, D. (2007). *Advance calculus demystified: A self-teaching guide*. New York: Mcgrow Hill. (Unit II)
- Baumslag, B. (2000). *Fundamentals of teaching mathematics at University level*: Imperial College press. (Unit II)
- Handa, Y. (). *What does understanding mathematics mean for teachers? Relationship as a metaphor for knowing*. Routledge (Unit I)
- Nardi, E. & Iannone, P. (). : *How to prove it: A brief guide for teaching proof to year 1 mathematics graduates*. Norwich, UK: (Unit II).
- Pandit R. P. et al (2018). *Studies in mathematics education*. Kathmandu: Indira Pandit.
- PISA (2010). *Mathematics teaching and learning strategies in PISA*: OECD (Unit II).
- Robert, A. W. (1996). *Calculus: The dynamics of change*. Mathematical Association of America (Unit II).
- Shresha, M. B. (2014). *Philosophy of mathematics*. Kathmandu: Nepal Pragya Pratisthan. (Unit-I).
- Upadhyay, H. P. (2013). *A dialogue: mathematics as an umbrella concept unifying all disciplines*. Kathmandu: Council of mathematics Education. (Unit V).

Physical Education

P. Ed. 535: Project Meet in Physical Education and Games

Course No.: P. Ed. 535

Nature of course: Practical

Level: M. Ed.

Credit Hours: 3

Semester: Third

Teaching hours: 96

1. Course Description

This course is designed to provide students with coaching and officiating experiences in athletics and selected specialized games. It also intends to provide practical knowledge of organizing conferences in physical education and games.

2. General Objectives

- To provide students with practical experiences in coaching and officiating athletics and games.
- To make students able to conduct conferences on physical education and games.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Demonstrate the advanced skills of coaching and officiating in different games and sports. 	<p>Unit: I Coaching camp in athletics and games (15)</p> <p>1.1 Preparation and conduct of one-week intensive coaching and officiating.</p> <p>1.2 Contact the concerned school for a coaching camp and plan its strategies.</p> <p>1.3 Conduct the coaching camp in games and sports according to time table.</p>
<ul style="list-style-type: none"> • Discuss the system of play and modern strategies of the specialized games. • Prepare teaching and coaching programs in different skills of specialized games and sports. 	<p>Unit: II Teaching and coaching experiences in games and sports (45)</p> <p>2.1 Preparation of schedule in any one game and any three events of athletics (18 lessons x 2)</p> <p>2.2 Selection of schools for coaching.</p> <p>2.3 Plan and conduct coaching.</p>
<ul style="list-style-type: none"> • Conduct tournaments and athletic meet • Officiate the tournaments in the specialized game and different athletic events. 	<p>Unit: III Project Meet (9)</p> <p>3.1 Preliminary preparation for tournaments.</p> <p>3.2 Announcement of meets and tournaments.</p> <p>3.3 Conducting meet and tournament followed by opening and closing ceremony</p>
<ul style="list-style-type: none"> • Prepare detailed progress reports in specialized games. 	<p>Unit: IV Preparation of the project meet report (9)</p> <p>4.1 Introduction /preliminary works</p> <p>4.2 Objectives</p> <p>4.3 Participating teams and schedule</p> <p>4.4 Programme schedule and results</p>

- 4.5 Conclusions and recommendations
 - 4.6 References
 - Conduct the conference/seminar on current issues of physical education and sports.
 - Prepare the report of the conference/seminar.
- Unit: V Conference/seminar on Physical Education and Games (18)**
- 5.1 Identification of the theme of the conference/seminar
 - 5.2 Preparation of papers for the conference/seminar
 - 5.3 Announcement of the conference/seminar (venue, date, and time)
 - 5.4 Conduct conference/seminar (Management of moderator and presenter)
 - 5.5 Preparation of the conference/seminar report

The figures in the parentheses indicate the approximate periods for the respective units.

In practical classes, 1 credit hour = 2 teaching hours

4. Instructional Techniques

The instructional techniques are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the specific units.

4.1 General Instructional Techniques

- Lecture
- Group Work
- Project work
- Demonstration
- Discussion and presentation
- Workshop and Seminar

4.2 Specific Instructional Techniques

Unit Activities and Instructional Techniques

- | | |
|-----|---|
| I | Students will be assigned to conduct one week of intensive coaching in their respective games. They will also be asked to prepare a schedule for the coaching. Their coaching activities will be closely monitored by the subject teacher. |
| II | All the students will prepare a coaching schedule for 18 lessons including a game and three athletic events. They will be asked to select schools for coaching and they will be sent to conduct the coaching program according to the schedule. All the students will coach each lesson for two days so that the total program will be six weeks. |
| III | Students will be assigned to conduct tournaments on the events which they have coached in the schools. They have to officiate the games and athletic events with different roles. |
| IV | Students have to prepare a report on the intensive coaching, six weeks' coaching and project meet under the close supervision of the subject teacher |

and the report will be submitted for the final examination.

- V Students will be divided into different groups according to the themes identified in the discussion. They will be asked to prepare papers on their respective theme to present at the conference. They can also use a resource person for the paper writing according to the nature of the theme. Finally, they have to conduct the conference on their respective theme and prepare a report and submit it for the final evaluation.

5. Evaluation Techniques

This paper is a practical one. Hence, this part will be assessed through formative assessment (Internal). However, the external examination will be conducted after the submission of the project meet and conference reports. All the marking is based on the following:

5.1 Intensive Coaching

Students should coach in a particular game of their choice. Not more than two students are kept in a game.

5.2 Involvement in Coaching and Project Meet

Students will be divided into four groups for the particular game of their capabilities and interest. They should be given any three events in athletics (run + jump + throw) and one game. They should also prepare the schedule for 18 sessions. Four groups should be sent to a school to conduct coaching on particular events. Each group will coach a team of 12 girls from a house of the school. After six weeks of coaching, they will organize a house-wise tournament.

5.3 Conduct Conference on Physical Education

Students will organize a conference on physical education. An external examiner will be invited to evaluate the activities of the conference. Marks will be allotted in the following way:

5.4 Internal evaluation-40%

Internal evaluation will be conducted by subject teachers based on the following activities:

SN	Activities	Marks
1	Attendance	10
2	Demonstration skills	5
3	Practice period	5
4	Participation in preparing schedules	5
5	Role in team management while conducting tournaments and meet	5
6	Role as a referee/umpire/judge in the tournament	10
Total		40

5.5 External Examination (Final Examination) -60%

Examination Division, Office of the Dean, Faculty of Education will appoint an external examiner to conduct a practical examination at the end of the semester.

SN	Types of activities	Marks
1	Report on project meets	20
2	Conducting conference	20
3	Viva -voce	20
Total		60

6. Recommended Books and References

6.1 Recommended Books

Anand, R. L. (1986). *Playing field manual*. Patiala: NIS Publication. (Unit III)

Ballou, R. B. ((1988). *Teaching badminton*. Delhi: Surjeet Publication. (Unit I and III)

Bucher, C. A. (1979). *Administration of physical education and athletics program*. St. Louis: The C.V. Mosby Company. (Unit III and V)

Goel, R. G. and Goel, Veena (1990). *Encyclopedia of sports and games*. New Delhi: Vikas Publishing House Pvt. Ltd. (Unit III)

Jha, A. K. (2003). *The layout of games and sports*. Kathmandu: Ratna Pustak Bhandar. (Unit III)

Kho-Kho. Jalandhar: AP Publishers. (Unit I - III)

P. and J. W. Refrik. *Intramural recreational sports: programming and administration*. New York: John wisely and Sons. (Unit III)

Parker, D. (Nd). *Take up table tennis*. New Delhi: Learners Press. (Unit I - III)

Parker. D. & David, H. (1996). *Play the game table tennis*. London: Bland ford. (Unit I - III)

Rao, E. P. (1994). *Modern coaching in Kabaddi*. Delhi: DVS Publication. (Unit I - III)

Voltmer, Edward F. and et al. (1979). *The organization and administration of physical education*. New Jersey: Prentice-Hall. Inc. (Unit III and V)

6.2 References

Baruwal, H. B., Shrestha, S. B., Bhatta Datta, T. D., Shrestha, M. K. & Poudel, T. R. (2075). *Foundation of physical education*. Kathmandu: Pinnacle Publication.

Baruwal, H. B., Shrestha, S. B., Shrestha, M. K., Datta, M. T. & Paudel, T. R. (2075). *Sports science and games*. Kathmandu: Pinnacle Publication Ltd. Bagbazar

Jha, A. K. (1993). *Planning and organizing sports facilities*. Kathmandu: Ekta Prakashan.

Jha, A. K. (2003). *The layout of games and sports*. Kathmandu: Ratna Pustak Bhandar.

Sherchan, L. (2012). *Foundations of physical education and sports*. Kathmandu: Quest Publication.

Sherchan, L. (2065). *Skills and rules of games and sports*. Kathmandu: Physical Education and Sports.

Sherchan, L. (2018). *Sports science and games*. Kathmandu: Quest Publication.

P. Ed. 537: Kinesiology and Biomechanics

Course No.: P. Ed. 537

Nature of course: Theory

Level: M. Ed.

Credit Hours: 3

Semester: Third

Teaching hours: 48

1. Course Description

This course is designed to enable the students to gain advanced knowledge on principles and skills related to human movement based on biomechanics and kinesiology. It is also assumed that the course enables the students to apply the knowledge in teaching physical education and games based on different movement patterns.

2. General Objectives

The general objectives of this course are as follows:

- To make the students able to understand the general concept and historical development of kinesiology in sports.
- To enable the students to differentiate between kinesiology and bio-mechanics in physical education and sports.
- To familiarise the students with the microscopic structure of human skeletal muscles and their functions.
- To provide the students with the knowledge of classifying and using the bones and joints properly during the movement activities.
- To enable the students to differentiate body planes and axis, and their roles while doing physical activities.
- To acquaint the students with the energy release and utilization process of human muscles
- To make the students apply kinesiological, and mechanical principles (e.g. motion, force, equilibrium, gravity) in games and sports.
- To enhance the knowledge of biomechanical and kin anthropometrical parameters in motor skills of daily living (e.g. walking, sitting, lifting, climbing, carrying).

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the concept and historical perspective of kinesiology • Discuss the types and importance of kinesiology in physical education and sports. 	<p>Unit I: Introduction to Kinesiology (7)</p> <p>1.1 Concept of kinesiology 1.2 Historical perspective of Kinesiology 1.3 Types of Kinesiology 1.4 Importance and use of kinesiology in physical education and sports.</p>
<ul style="list-style-type: none"> • Illustrate the types and role of muscles in human movement. • Identify the microscopic structure of skeletal muscles. • Explain the structural classification of bones • Elaborate on the types and structures of joints. • Apply kinanthropometric measurement in sports. 	<p>Unit II: Kinesiology of the human body (12)</p> <p>2.1 Types and role of muscles 2.2 Microscopic structure and physiology of skeletal muscles 2.3 Structural classification of bones 2.4 Types and structure of joints 2.5 Kinanthropometric measurement and use of body parts</p>
<ul style="list-style-type: none"> • Discuss the concept, types, and functions of body planes and axis. • Illustrate the concept, types, and 	<p>Unit III: Application of Kinesiology (9)</p> <p>3.1 Concept of body planes and axis</p>

<p>advantages of the lever in human movement.</p> <ul style="list-style-type: none"> Analyze the energy release process and its utilization of human muscles during physical activities. 	<p>3.2 Types, and advantages of planes and axis</p> <p>3.3 Concept, types, and advantages of body levers</p> <p>3.4 The mechanical advantage of levers in the human body</p> <p>3.5 Energy release and utilization process of human muscles during physical activities.</p>
<ul style="list-style-type: none"> Describe the concept and importance of biomechanics in sports Illustrate meaning and types of motion Apply Newton's laws of motion in sports Analyze types of gravitational force applied to sports 	<p>Unit IV: Biomechanics (10)</p> <p>4.1 Concept and importance of biomechanics in sports.</p> <p>4.2 Meaning and types of motion</p> <p>4.3 Newton's laws of motion and their application in sports.</p> <p>4.4 Types and application of force in sports</p> <p>4.5 Gravity force: line of gravity, the center of gravity</p>
<ul style="list-style-type: none"> Discuss the types, principles, importance, and application of equilibrium in sports. Explain friction, resistance, and their types applicable in sports Show the need for good posture in sports Apply biomechanics and kinesiology in motor skills in daily life 	<p>Unit V: Application of Biomechanics (10)</p> <p>5.1 Equilibrium</p> <p>5.1.1 Types</p> <p>5.1.2 Principle</p> <p>5.2 Friction and resistance in sports</p> <p>5.3 Types and use of resistance in sports</p> <p>5.4 Need for measures to manage postural defects</p> <p>5.5 Application of biomechanics and kinesiology in motor skills of daily living (e.g. walking, sitting, climbing, lifting, carrying, etc)</p>

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub-units or content.

4.1 General Instructional Techniques

- Lectures
- Discussion
- Presentations
- Project works
- Assignment
- Group work
- Lecture of resource person
- Report writing
- Seminar

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
I	Review books, reports, and papers and discussions on them
II	Consultation of reference books, group works on given topics discussion, and presentation.

III	Experts lecture on the concerned topics along with group discussion and participation
IV	Individual assignment on given topics, report writing, and presentation with commentators' notes.
V	Guest lectures on some specific topic along with their specific application in our daily life activities. Review of reference materials by all participants.

5. Evaluation

5.3 Internal evaluation 40%

Internal evaluation will be conducted by subject teachers based on the following activities:

S.N	Particular	Marks
1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test etc	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/survey/seminar/workshop/presentation	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester (proposed).

S.N	Types of question	Marks
1	Objective type question (Multiple choice 10x1 marks)	10
2	Short answer questions (6 with two OR questions x 5 marks)	30
3	Long answer questions (2 with one OR questions x 10 marks)	20
Total		60

6. Recommended Books and References

6.1 Recommended Books

Davis, B., Bull, R., Roscoe, J. & Roscoe, D. (2000). *Physical education and the study of sport*. Spain: Mosby Harcourt Publishers Limited (Unit I, II, and IV)

Deshpande, S. H. (1990). *Kinesiology*. Amrawati: H.V.P.M. Publications.

- Frost, R. (2002). *Applied kinesiology*. California: North Atlantic Books.
- Karpowich, P. & Sinning, W. E. (1971). *Physiology of muscular activity*. Philadelphia: W.B. Saunders Co.
- Lamb, D. R. (1978). *Physiology of exercise*. New York: McMillan Publication.
- Rai, R. (2003). *Biomechanics: Mechanical aspects of human motion*. Punjab: Agrim Publication, India
- Singh, A., Bains, J., Gill, J. S. & Brar, R. S. (2012). *Essentials of physical education*. New Delhi: Kalyani Publishers.
- Uppal, A. K., Kumar, L. G., & Panda, M. M. (2004). *Kinesiology for physical education and exercise science*. Delhi: Friends Publications.

6.2 References

- Baruwal, H. B., Shrestha, S. B., Taradatta, B. M., Shrestha, M. K., and Paudyal, T. R (2018). *Sports science and games*. Kathmandu: Pinnacle Publication Ltd. Bagbazar
- Dyson, G. H. G. (1973). *The mechanics of athletics*. England: University of London Press Ltd. St Paul's House, London
- Pande, P. K. (1989). *Know how sports medicine*. Jalandhar: A.P. Publishers.
- Sherchan, L. (2018). *Sports science and games*. Kirtipur:: Quest Publication.
- Tenenbaum, G. & Elkund, R. (2007). *A handbook of sports psychology* (3rd ed). New Jersey: John Wiley & Sons, Inc.
- Vastrad, B. (2008). *Sports biomechanics*. New Delhi, Hyderabad: Neelkamal Publications Pvt.Ltd. Vastrad, B. (2008).

P. Ed. 538: Research and Evaluation in Physical Education and Sports

Course No. : P. Ed. 538

Nature of course: Theory

Level: M. Ed.

Credit hours: 3

Semester: Third

Teaching hours: 48

1. Course Description

This course is designed to provide prospective teachers with knowledge, methods, and skills of research in physical education and sports. It also aims to enable the students in designing, selecting and applying appropriate tests, measurements and evaluations in physical education and sports. This course is intended to develop the capacity of the students in different components of quantitative and qualitative research in physical education and sports.

2. General objectives

The general objectives of this course are as follows:

- To make the students familiar with the concepts and skills of research method in physical education and sports.
- To enable the students to understand and use the test, measurement application, and evaluation in physical education and sports.
- To make the students acquainted with the application skill of different dimensions of test statistical methods in physical education and sports.
- To assist the students to select, develop and use various types of fitness tests and their application from different statistics in the research field of physical education and sports.
- To apply the various types of sports skill tests in the field of physical education and sports.
- To assist the students to measure the anthropometric, attitude, and behavior test.

3. Specific objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Illustrate the research methods, and organization in physical education and sports. • Analysis and Interpretation of the results by applying different types of research design. • Discuss and apply different types of reference formats. 	<p>Unit: I Research Methods, and Organization in Physical Education (8)</p> <p>1.1 Research methods, types, and designs.</p> <p>1.2 Introduction (background of the study, statements of the problem, justification of the study, objective of the study, delimitation of the study, key terms used, and organization of research report).</p> <p>1.3 Review of Literature (theoretical literature, empirical literature, implication of review for the study, and conceptual framework).</p> <p>1.4 Research Methodology (research design, sources of data/population of the study, universe and sampling design, tools of data collection, data collection procedure,</p>

	<p>standardization of the tools, method of data analysis/interpretation, and ethical consideration).</p> <p>1.5 Analysis and Interpretation of the Results (historical, descriptive, comparative, experimental, cinematography, anthropometric, and fitness-related data).</p> <p>1.6 Findings, Conclusion, and Recommendations</p> <p>1.7 Reference format (American Psychological Association-APA, American Sociological Association-ASA, Modern Language Association-MLA).</p>
<ul style="list-style-type: none"> • Illustrate the meaning and nature of the test, measurement, and evaluation • Differentiate between test, measurement, and evaluation. • Discuss the need and importance of the test, measurements, and evaluations in physical education. • Construct and select and apply the test. 	<p>Unit: II Introduction to Test, Measurement and Evaluation (5)</p> <p>2.1 Meaning and nature of test, measurement, and evaluation.</p> <p>2.2 Differences between test, measurement, and evaluation.</p> <p>2.3 Need and importance of test, measurement, and evaluation.</p> <p>2.4 Scientific authenticity/construction of the test, and its application.</p>
<ul style="list-style-type: none"> • Discuss the measurement in the dimension of test in physical education • Apply various tests of strength and muscular endurance and administer them in different circumstances. • Use the tests of measuring flexibility. • Measure cardio-vascular endurance. • Use the tests of measuring motor performance 	<p>Unit: III Measurement in Dimension of Test in Physical Education (15)</p> <p>3.1 Measurement of strength (Meaning of strength, reasons for measuring strength, PFI test, Kraus Weber muscular test, sit-ups test, and overhead pull test).</p> <p>3.2 Measurement of flexibility (Meaning of flexibility, reasons for measuring flexibility, modify sit and reach test, bridge up test, trunk, and neck extension test).</p> <p>3.3 Measurement of muscular endurance (Meaning of endurance, reasons for measuring endurance, flexed arm hang, chin-up, push-up, and squat thrust: Burpee).</p> <p>3.4 Measurement of cardio-vascular condition (Meaning of cardio-vascular fitness, reasons for measuring cardiovascular fitness, blood pressure measurement, Cooper's 12 minutes run/walk test, six hundred yards run/walk test, Harvard step test, and Tuttle pulse ratio test).</p> <p>3.5 Measurement of motor performance (Meaning and reasons for measuring</p>

	<p>motor performance or power, agility, balance, speed, and reaction).</p> <p>3.5.1 Test for measuring power (Surgent chalk jump, standing broad jump, and two hand medicine ball put).</p> <p>3.5.2 Test for measuring agility (side-step test, shuttle run, and Barrow zigzag test).</p> <p>3.5.3 Test for measuring balance (stork stand, one-foot balance, and Nelson balance test).</p> <p>3.5.4 Test for measuring speed and reaction (fifty-yard dash, Nelson speed, and movement test, and Nelson hand/finger reaction test).</p>
<ul style="list-style-type: none"> • Discuss the measurement of fitness test • Explain the different types of fitness tests and their application in PE and sports. • Compare physical fitness, motor fitness, and motor ability. 	<p>Unit: IV Measurement of Fitness Test (10)</p> <p>4.1 Physical fitness test</p> <p>4.1.1 AAHPER youth fitness test</p> <p>4.1.2 California physical fitness test</p> <p>4.1.3 Jha physical fitness test</p> <p>4.2 Motor fitness test</p> <p>4.2.1 Indiana motor fitness test</p> <p>4.2.2 Oregon motor fitness test</p> <p>4.2.3 Kirchner’s motor fitness test</p> <p>4.3 General motor ability test</p> <p>4.3.1 Baruwal motor ability test</p> <p>4.3.2 Larson motor ability test</p> <p>4.3.3 Mc Cloys general motor ability test (Application of different statistics)</p>
<ul style="list-style-type: none"> • Describe the meaning of the sport skill test and its importance. • Use different sport skill tests in different games. 	<p>Unit: V Sports skill Test (5)</p> <p>5.1 French-Cooper volleyball test</p> <p>5.2 Mc Donald soccer’s test</p> <p>5.3 Johnson basketball test</p> <p>5.4 Lockhart and McPherson badminton test</p> <p>5.5 Dyer table tennis test</p>
<ul style="list-style-type: none"> • Explain the meaning and importance of Anthropometric measurement in physical education. • Measure different lengths and girdles of parts of the body • Use the test of attitude and behavior in physical education and sports. 	<p>Unit: VI Measurement of Anthropometric, Attitude, and Behaviour (5)</p> <p>6.1 Meaning, need, and importance of anthropometric measurement and body composition</p> <p>6.2 Measurement of anatomical landmark</p> <p>6.3 Adams physical education attitude test</p> <p>6.4 Blanchard behavior rating scale</p>

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of proposed specific instructional techniques applicable to specific units or sub-units or content.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Interaction
- Individual assignment
- Library study
- Presentation
- Project work
- Group work
- Personal assignment
- Term paper presentation
- Seminar
- Workshop

4.2 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
I	Students will be asked to review research method books and prepare individual notebooks on Research Organization in Physical Education and sports, The students will be divided into different groups and they will prepare and present papers in different research methods in the class.
II	A round table conference will be organized in the class to discuss and interact on the need and importance of tests, measurement, and evaluation in physical education and sports. The students will individually prepare types of tests with proper examples.
III	The students exercise different measurements of tests with their classmates.
IV	The students will organize a seminar on different types of fitness tests and present in the group.
V	The students exercise different sports skill tests with related courts, ground, and boards.
VI	Students will be asked to prepare individual notebooks on the meaning, need, and importance of anthropometric measurement and body composition. The students exercise the anatomical landmark with their classmates. The students will be divided into different groups and they will prepare and present papers in attitude and behavior tests in the class.

5. Evaluation

5.4 Internal evaluation 30%

Internal evaluation will be conducted by subject teachers based on the following activities:

S.N	Particulars	Marks
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1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test etc	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/survey/seminar/workshop/presentation	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct the final examination at the end of the semester (proposed).

S.N	Types of question	Marks
1	Objective type question (Multiple choice 10x1 marks)	10
2	Short answer questions (6 with Two OR questions x 5 marks)	30
3	Long answer questions (2 with One OR questions x 10 marks)	20
Total		60

Note: First assignment/ assessment might be mid-term exam + assign or book review or article review or first term paper on specific issue/ topic, mid-term exam or unit test and quiz, etc according to nature of course. The second assignment /assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents, etc.

6. Recommended Books and References

6.1 Recommended Books

- AAHPER (1976). *Youth fitness test manual*. Washington: American Alliance for Health, Physical Education and Recreation. (Unit IV)
- Barrow, H. M. & McGee, R. (1979). *A practical approach to measurement in physical education*. Philadelphia: Lea and Febiger.. (Unit III and IV)
- Best, J. W. & Kahn, J.V. (2004). *Education research*. New Delhi: Prentice-Hall of India. (Unit I, II, III, and V)
- Bosco, J. S. & Gastafson, W. F. (1983). *Measurement and evaluation in physical education, fitness, and sports*. New Jersey: Prentice-Hall, Inc. (Unit III and IV)
- Campbell, W. R. & Tucker, N. M. (1967). *An introduction to tests and measurement in physical education*. London: Bell and Sons Ltd (Unit I – V)
- Clarke, H. H., and Clarke, D. H. (1987). *Application of measurement to physical education*. New Jersey: Prentice-Hall, INC. (Unit III and IV)
- Jha, A. K. (2009). *Test, measurement, and evaluation in physical education*. Kathmandu: Ekta Books. (Unit IV)
- Johnson, B. L., and Nelson, J. K. (1988). *Practical measurements for evaluation in physical education*. Delhi: Surjeet Publications. (Unit III and IV)

- Kerlinger, F. N. (2005). *Foundations of behavioral research*. New Delhi: Sanjeet Publications. (Unit I, II, III, and V)
- Koul, L. (2000). *Methodology of education research*. New Delhi: Vikash Publication House. (Unit I, II, III, and V)
- Kothari, C.R. (2004). *Research methodology: Methods and techniques*. New Delhi: New Age International. (Unit I, II, III, and V)
- Kumar, R. (1999). *Research methodology; a step-by-step guide for beginners*. New Delhi: SAGE Publications India Pvt. Ltd. (Unit I, II, III, and V)
- Mathews, D. K. (1978). *Measurement in physical education*. Philadelphia: W.B. Saunders Company. (Unit III and IV)
- Surinder, N. (1993). *Anthropometry: the measurement of body size, shape, and form*. Delhi: Friends Publication. (Unit VI)

6.2 References

- Khanal, P. (2065). *Educational research methodology*. Kathmandu: Sunlight Publication.
- Maharjan, R. K., Sherchan, L., Maharjan, S. K., Mudwari, N. & Aryal, B. (2013). *A handbook of thesis writing in health, physical, and population education*. Kathmandu; Sunlight Publication.
- Safrit, M. J. (1973). *Evaluation in physical education*. New Jersey: Prentic-Hall, Inc.
- Shahi, S. J. (2018). *Dimension of research in physical education*. Kirtipur, Kathmandu: Sunlight Publication.
- Shahi, S. J. (2018). *Research methodology in physical education*. Kirtipur, Kathmandu: Sunlight Publication.

P. Ed. 539: Cricket

Course No.: P. Ed. 539

Level: M. Ed.

Semester: Third

Nature of course: Practical

Credit Hours: 3

Teaching hours: 96

1. Course Description

This course is designed to develop an understanding of developmental history, basic skills, and rules and regulations of cricket among the students. The main aim of the course is to apply basic skills and strategies in the situation of cricket game. The course intends to help the students in demonstrating and participating in cricket games. Besides this, the students will also be provided with the experience of officiating in the game.

2. General Objectives

The general objectives of this course are as follows:

- To acquaint the students with the historical development of cricket in Nepal and the World.
- To acquaint students with the basic rules of cricket.
- To enable students in demonstrating basic skills of cricket.
- To enable the students in organizing coaching programs and officiate cricket matches.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • State short history of cricket in Nepal and the world • Discuss the role of CAN, BCCI, and ICC in developing cricket in Nepal • Identify the formats and types of international cricket. 	<p>Unit I: Introduction to Cricket Game (10)</p> <p>1.1 History of cricket games in Nepal and the world</p> <p>1.2 Role of organization in developing cricket in Nepal</p> <p style="padding-left: 20px;">1.2.1 CAN</p> <p style="padding-left: 20px;">1.2.2 BCCI</p> <p style="padding-left: 20px;">1.2.3 ICC</p> <p>1.3 Formats and types of international cricket</p> <p style="padding-left: 20px;">1.3.1 20-20 match</p> <p style="padding-left: 20px;">1.3.2 One-day match</p> <p style="padding-left: 20px;">1.3.3 Test match</p>
<ul style="list-style-type: none"> • Sketch the ground measurement of cricket • State the requirements of cricket • Identify the rules and laws of cricket. • Identify the different positions of players in cricket 	<p>Unit: II Rules and Regulation of Cricket (10)</p> <p>2.1 Ground measurement</p> <p>2.2 Requirements of cricket</p> <p>2.3 Rules of cricket</p> <p>2.4 Different positions of players</p> <p style="padding-left: 20px;">2.4.1 Wicket-keeper</p> <p style="padding-left: 20px;">2.4.2 Striker batsman</p> <p style="padding-left: 20px;">2.4.3 non-striker batsman</p> <p style="padding-left: 20px;">2.4.4 Slips-point</p> <p style="padding-left: 20px;">2.4.5 Gully</p> <p style="padding-left: 20px;">2.4.6 Third man</p> <p style="padding-left: 20px;">2.4.7 Covers</p> <p style="padding-left: 20px;">2.4.8 Mid-on/ mid-off</p>

	<p>2.4.9 Mid-wicket 2.4.10 Fine-leg 2.4.11 Square-leg</p>
<ul style="list-style-type: none"> • Demonstrate basic skills in batting • Use different techniques for bowling • Apply various fielding skills in cricket. 	<p>Unit: III Basic Skills of Cricket (36)</p> <p>3.1 Batting</p> <ul style="list-style-type: none"> 3.1.1 Grip 3.1.2 Stance 3.1.3 Batting positions 3.1.4 Blocking the ball 3.1.5 Batting styles 3.1.6 Shots 3.1.7 Runner's position <p>3.2 Bowling</p> <ul style="list-style-type: none"> 3.2.1 Fast/ Pace <ul style="list-style-type: none"> a. Reverse-swing b. Inswing c. Outswing d. Yorker e. Seam f. Bounce 3.2.2 Spin <ul style="list-style-type: none"> a. Off-spin <ul style="list-style-type: none"> • Doosra ball • Teesra ball b. Leg-spin <ul style="list-style-type: none"> • Googly ball • Flipper ball • Carrom ball • Yorker <p>3.3 Fieldings</p> <ul style="list-style-type: none"> 3.3.1 Catching 3.3.2 Throwing 3.3.3 Wicket keeping
<ul style="list-style-type: none"> • Describe factors to be considered before, during, and after training • Plan selected coaching programs and sessions for various skills of cricket. 	<p>Unit: IV Training and Coaching Strategies of Cricket (30)</p> <p>4.1 Factors to be considered before, during, and after cricket training</p> <p>4.2 Warm-up drills – Running, stretching, throwing, catching</p> <p>4.3 Batting training – Grip, stance, bat taps, relay running with the bat, blocking, strikes</p> <p>4.4 Bowling training – Gripping the ball, run-ups, releasing the ball with action, target bowling as per types (spin, swing, and fast)</p> <p>4.5 Catching training – Catching positioning, close catching,</p>

	<p>high catching, catching relays</p> <p>4.6 Chasing and throwing training – Chasing a running ball, chasing and picking up, throwing the ball</p> <p>4.7 Wicket-keeping training – Set, move, dive, stump, catch, throw</p> <p>4.8 Recovery and session reviews – Cool down exercises, dodgeball, mini cricket</p>
<ul style="list-style-type: none"> • Explain the role of different officials in cricket • Demonstrate and identify the signals used in cricket by umpires • Organize and officiate cricket matches. 	<p>Unit V. Officiating (10)</p> <p>5.1 Officials</p> <p>5.3 Officials signals</p> <p>5.4 Organizing and officiating cricket match</p>

Note: The figures within parentheses indicate the approximate teaching hours allotted to the respective unit.

In practical classes, 1 credit hour = 2 teaching hours

4. Instructional Techniques

4.1 General Instructional Techniques

This course is practical:

- Lecture cum discussion
- Demonstration
- Participation and practice
- Drill
- Group work

4.3 Specific Instructional Techniques

Unit	Activity and Instructional Techniques
I	<ul style="list-style-type: none"> • The teacher will introduce cricket and its history. • The students will be assigned to collect information from CAN, BCCI, and ICC to identify the roles of CAN, BCCI, and ICC in developing cricket in Nepal.
II	<ul style="list-style-type: none"> • The teacher will explain the ICC rules and regulations of cricket and show the requirements of the game.
III	<ul style="list-style-type: none"> • The teacher will explain and demonstrate basic skills of batting, bowling, and fielding. • The students will observe and then participate in the activities with the teacher.
IV	<ul style="list-style-type: none"> • The teacher will plan various coaching strategies to coach different skills and apply them in the class. • The students will first develop the selected skills of cricket and organize a coaching program of specific skills for each other.
V	<ul style="list-style-type: none"> • The students will organize and officiate cricket matches and the teacher

	will provide feedback to the students.
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5. Evaluation

5.1 Internal evaluation-40%

Internal evaluation will be conducted by subject teachers based on the following activities:

SN	Activities	Marks
1	Attendance	5
2	Participation in learning activities	5
3	Performance	10
4	Tournament organization	10
5	Notebook keeping	10
Total		40

5.2 External Examination (Final Examination)-60%

Examination Division, Office of the Dean, Faculty of Education will appoint an external examiner to conduct a practical examination at the end of the semester.

S.N	Types of practical activities	Marks
1	Performance in particular games	50
2	Oral test	10
Total		60

6. Recommended Books and References

6.1 Recommended Books

Dev, K. (1987). *Cricket is my style*. New Delhi: Allied Publisher. (Unit I, III, and IV)

Singh, B. (1981). *Rules and skills of games and sports*. New Delhi: Pankaj Publication. (Unit II and V)

The Law of Cricket (1992). London: MCC. (Unit II and V)

6.2 References

Goel, R. G.& Goel, V. (1990). *Encyclopedia of sports and games*. New Delhi: Vikas Publishing House Pvt. Ltd. (Unit I, II, and V)

YMCA (1981). *Rules of games and sports*. New Delhi: YMCA Pub. House. (Unit II and V)

<http://www.espnricinfo.com/magazine/content/story/585639.html>

<http://www.cricketweb.net/books/top-12-cricket-books/>

<http://www.bookdepository.com/category/3027/Cricket>

Biology Education**Bio. Ed. 535 T: Recent Trends in Biology Education**

Course No.: Bio. Ed. 535 T

Nature of course: Theoretical

Level: M.Ed. in Biology

Credit hours: 2

Semester: Third

Teaching hours: 32

Period per week: 2

1. Course Description

This course is designed to acquaint students with current trends in biology teaching and learning. The course aims to develop a professional biology teacher equipped with pedagogical knowledge, better understanding of classroom practices, and proficiency to biology teaching and learning. Furthermore, it incorporates innovative concepts and recent trends and development in biology education by blending technological skills to create learning activities.

2. General Objectives

The general objectives of this course are as follows:

- To provide the knowledge of developmental perspectives of biology education.
- To equip the students with the knowledge of the nature, values and scope of biology education.
- To acquaint students with the biology curriculum at school and university levels.
- To demonstrate the knowledge of biology on the basis of contemporary pedagogical concerns.
- To develop knowledge and skills of planning, designing and managing biology education classrooms and co-curricular activities.
- To review innovative approaches in biology teaching and apply them in biology teaching and learning.
- To develop skills of evaluation in the school and the university level.
- To promote an awareness of the social and technological implications of biology.

3. Specific Objectives and Contents

Specific Objectives

- Comprehend the aims and objectives of school biology education.
- Elaborate the scope of biology education.
- List the importance of biology education in daily life.
- Review the development of biology education at the school and the tertiary level in Nepal, India, U.K., and U.S.A.
- Describe the changing faces of biology
- Discuss the biology education in a broader context.
- Deal with the issues of biology education.
- Explain the major paradigm shifts in biology education.
- Discuss the interdisciplinary dimensions of biology including correlation of biology with social sciences, chemistry, mathematics, and biology.
- Explain the relationship between the biology and society in-terms of environment, agriculture, and kitchen.
- Explain the importance of biology for sustainable development.
- Explore indigenous knowledge in biology in local context.
- Define and explain misconceptions.
- Give a comparative account of concepts, alternative concepts and misconceptions in biology.
- Explore the students' misconceptions on the school, +2 and the university level in biology education.
- Introduce biology curriculum and its components.
- Explain innovative approaches in school biology curriculum of SAARC countries.
- Analyze critically the curriculum of secondary level and the university

Contents

Unit I: Developmental Perspectives of

Biology Education (6pds.)

- 1.1 Aims and objectives of biology Education
- 1.2 Scope of biology education
- 1.3 Importance of biology education
- 1.4 Development of biology education in Nepal, India, U.K., and U.S.A.
- 1.5 Changing faces of biology
- 1.6 Biology education in a broader context
- 1.7 Issues in biology education
- 1.8 Paradigm and paradigm shift in biology education
- 1.9 Interdisciplinary dimension of Biology
- 1.10 Relation between the biology and the society (environment, agriculture and kitchen)
- 1.11 Biology for sustainable development
- 1.12 Indigenous knowledge in biology
- 1.13 Concepts, alternative concept and misconceptions in biology education

Unit II: Biology Education Curriculum (5pds.)

- 2.1 Introduction
- 2.2 School and university level biology curricula in SAARC countries
- 2.3 Analysis of secondary and university

- level biology curricula of Nepal.
- Illustrate the features of competency-based biology curriculum.
 - Introduce the innovative biology education projects in-terms of their objectives, materials procedure, application and importance
 - Biological Sciences Curriculum Study (BSCS).
 - Nuffield O-level biology.
 - Elaborate the concept of STEAM literacy.
 - Discuss the needs, features and design of STEAM in the school curriculum.

- level biology curricula of Nepal
- 2.4 Competency-based biology curriculum
 - 2.5 Innovative biology projects
 - 2.5.1 Biological Sciences Curriculum Study (BSCS)
 - 2.5.2 Nuffield O-level biology
 - 2.6 STEAM Literacy
 - 2.6.1 STEAM in school curriculum

Unit III: Planning of Biology Teaching

(6pds.)

- Design unit plan and lesson plan in the areas of biology.
 - Enlist the advantages of planning in teaching biology.
 - Design lesson plans in biology based on different approaches.
 - Discuss the criteria for the evaluation of lesson plan.
- 3.1 Unit plan and lesson plan
 - 3.2 Advantages of planning in teaching biology
 - 3.3 Approaches to design lesson plan
 - 3.3.1 Herbert approach,
 - 3.3.2 ABC approach,
 - 3.3.3 7Es approach,
 - 3.3.4 Constructivist approach
 - 3.3.5 Project-based approach,
 - 3.3.6 Problem-solving approach
 - 3.3.7 Investigative approach
 - 3.3.8 Discovery approach
 - 3.3.9 Laboratory approach
 - 3.4 Criteria for the evaluation of lesson plan

Unit IV: Instructional Module and e-

learning (5 pds.)

- Design an instructional module of a biology lesson.
 - Develop a programmed instruction in biology lesson.
 - Elaborate the importance of computer-assisted instruction in biology teaching and learning.
 - Discuss virtual learning environment for teaching and learning biology.
 - Develop teaching materials in biology using the simulation mode.
- 4.1 Instructional module
 - 4.2 Programmed instruction
 - 4.3 Computer Assisted Instruction (CAI)
 - 4.4 Virtual environment for teaching and learning biology
 - 4.5 Simulation in teaching biology
 - 4.6 Teaching biology in gaming mode
 - 4.7 e-learning products: VLEs, LMSs, web-based educational materials,

- Apply the gaming mode in teaching biology.
 - Design digital learning lessons on biology in VLEs, LMSs.
 - Organize videoconferencing in learning biology.
 - Advance learning experience through virtual field trip.
- video conferencing
- 4.8 Virtual field trips: concept, process, and application

Unit V: Biology Laboratory (5 pds.)

- Explain the basic characteristics of a good biology laboratory.
 - Develop the designs of biology laboratory.
 - Describe the techniques of laboratory management.
 - Develop the biology laboratory skills.
 - Point out the major causes of biology laboratory accidents and suggest their safety measures.
 - Use the virtual biology laboratory for teaching and learning biology.
 - Illustrate the importance of the mobile biology laboratory.
 - Explain the construction of improvised biology laboratory materials and equipment.
- 5.1 Characteristics of a good biology laboratory
- 5.2 Planning and designing of a biology laboratory
- 5.3 Laboratory management techniques
- 5.4 Biology laboratory skills
- 5.5 Biology laboratory accidents and safety measures
- 5.6 Virtual biology laboratory
- 5.7 Biology mobile laboratory
- 5.8 Improvisation of laboratory biology materials and equipment.

Unit VI: Evaluation (5 pds.)

- Define evaluation.
 - Explain the functions of evaluation.
 - Describe summative, formative and diagnostic evaluation.
 - Prepare the specification grid based on the biology courses.
 - Discuss attributes of good biology test items
 - Explain the general steps of test construction.
 - Construct different test items in
- 6.1 Introduction
- 6.2 Functions of evaluation
- 6.3 Types of evaluation
- 6.4 Specification grid
- 6.5 Test items
- 6.6 Attributes of good biology test items
- 6.7 General steps of test construction
- 6.8 Construction of test items based on the revised Bloom's taxonomy
- 6.9 Standardization/ analysis of test
- 6.10 Letter grading system

biology courses based on the revised Bloom's taxonomy.

- Construct standardized biology test items of different levels.
- Calculate discrimination index of test items.
- Describe the criteria of item analysis and use them for standardization of test items.
- Calculate the item difficulty and discrimination index of biology test items.
- Introduce the letter grading system in Nepal.

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Discussion
- Demonstration
- Presentation
- Inquiry
- Project work
- Cooperative and collaborative work
- Internet (web) surfing
- Group work

4.2 Specific Instructional Techniques

Units Specific Instructional Techniques

- | | |
|-----------|---|
| I | Classroom presentation on biology and biology education. |
| II | Curriculum review, and curriculum display of SAARC countries and reflect on it with comments. |

- III Workshop cum discussion
- IV Paper writing and presentation followed by discussion.
- V Presentation by studying the handouts provided by the teacher followed by teachers' suggestions on biology laboratories. Student must visit biology laboratory and observation made by observation check list.
- VI Presentation by studying the handouts provided by the teacher and makes the report include the suggestions.

5. Evaluation

5.1 Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.1 Internal Evaluation

25 Marks

Internal evaluation will be conducted by the course teacher based on following activities:

1.	Attendance and participation in learning activities	5 Marks
2.	First assignment (written assignment)	5 Marks
3.	Second assignment (report writing and presentation)	5 Marks
4.	Third assignment/ Term exam	10 Marks
Total		25 Marks

Note: *First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.*

5.1.2. External Evaluation (Final Examination)

40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
2. Subjective short questions (6 questions with 2 ‘OR ‘questions x 5 marks)	30 Marks
Total	40 Marks

6. Recommended Books and References

- Agarwal, P. K. (2018). Retrieval practice & Bloom’s taxonomy: Do students need fact knowledge before higher order learning? *Journal of Educational Psychology*.
(For Unit-VI)
- Ahmad, S. (2007). *Teacher’s hand Book of Science*, New Delhi: Anmol Publication Pvt. Ltd.
(For All Units)
- Amos, S. & Boohan, R. (2002). *Aspects of teaching secondary science: Perspective on practice*. New York & London: Routledge Taylor and Francis Group. (For Unit I)
- Banks, F., & Barlex, D. (2014). *Teaching STEM in the secondary school: Helping teachers meet the challenge*. New York. Routledge. (For Unit II)
- Bhatnagar A. B. & Bhatnagar S. S. (2004). *Teaching of Science*, Meerut: Surya Publication.
(For All Units)
- Bork, D. (2019). A Framework for Teaching Conceptual Modeling and Metamodeling Based on Bloom’s Revised Taxonomy of Educational Objectives. (For Unit -VI)
- Chambers, D. (1993). Toward a competency-based curriculum. *Journal of Dental Education*, 57, 790-790.
(For Unit - II)
- CLEAPSE. (2009). *Designing and Planning Laboratories*. Brunel Science Park: CLEAPSE (Consortium of Local Education Authorities for the Provision of Science Equipment).
(For Unit - V)
- Davar, M. (2012). *Teaching of Science*. New Delhi: PHI Learning Private Limited.
(For Unit- I, III, IV, & V)
- Diberardinis, L. J., Baum, J. S., First, M. W., Gatwood, G. T., & Seth, A. K. (2013). *Guidelines for Laboratory design: Health, safety, and environmental considerations (4th ed.)* New York: Wiley Publications. (For Unit - V)
- Gil-Perez, D., & Carrascosa, J. (1990). What to Do About Science “Misconceptions”. *Science Education* 74(5), 531-540. (For Unit - I)
- Gupta, V. (2005). *Teaching and learning of science and technology*. New Delhi: Vikas Publishing House. (For Unit-IV)
- Guskey, T. (2011). Five obstacles to grading reform. *Educational Leadership*, 69(3), 16.
(For Unit - VI)
- Hofstein, A., & Lunetta, V. (1982). The role of the laboratory in science teaching: Neglected aspects of research. *Review of educational research*, 52(2), 201-217. (For Unit - V)
- Howarth, S. & Scott, L. (2014). *Success with STEM: Ideas for the classroom, STEM clubs and beyond*. Oxon: Routledge. (For Unit II)
- Karpudewan, M., Md.Zain, A. N., & Chandrasegaran, A. (2017). *Overcoming students' misconceptions in Science*. Singapore: Springer Singapore. (For Unit - I)
- Lau, D. (2001). Analyzing the curriculum development process: Three models. *Pedagogy, culture and society*, 9(1), 29-44. (For Unit - II)

- Levine, M., Serio, N., Radaram, B., Chaudhuri, S., & Talbert, W. (2015). Addressing the STEM gender gap by designing and implementing an educational outreach chemistry camp for middle school girls. *Journal of Chemical Education*, 92(10), 1639-1644. **(For Unit II)**
- Lubiano, M. L. D., & Magpantay, M. S. (2021). Enhanced 7E Instructional Model towards Enriching Science Inquiry Skills. *International Journal of Research in Education and Science*, 7(3), 630-658. **(For Unit - III)**
- Mammi, H. K., & Ithnin, N. (2012). Competency based education (CBE) for IT security: towards bridging the gap. *INTERNATIONAL JOURNAL OF ENGINEERING PEDAGOGY (IJEP)*, 24-26. **(For Unit- II)**
- Mohan, R. (2007). *Innovative science teaching*. New Delhi: Prentice-Hall of India Pvt. Ltd. **(For all Units)**
- Pinner, R. (2014). What Is The Difference between an LMS and a VLE? *Learning Management Systems*. **(For Unit - IV)**
- Ronen, I. (2017). *Misconceptions in science education, (1st ed.)*. UK: Cambridge Scholars Publishing. **(For Unit - I)**
- Sood, J. (2009). *Teaching of science*. New Delhi: Prentice Hall of India. **(For Unit -I, II, III & V)**
- Wei, B., & Ou, Y. (2018). A Comparative Analysis of Junior High School Science Curriculum Standards in Mainland China, Taiwan, Hong Kong, and Macao: Based on Revised Bloom's Taxonomy. *International Journal of Science and Mathematics Education*, 1-16. **(For Unit - VI)**
- Yakman, G. (2008). STEAM education: An overview of creating a model of integrative education. **(For Unit - I)**
- Zhao, X., Wang, J., Wang, M., Li, X., Gao, X., & Huang, C. (2020). A new model for assessing the impact of environmental psychology, e-learning, learning style and school design on the behavior of elementary students. *Kybernetes*. **(For Unit -IV)**

Bio. Ed. 535 P: Recent Trends in Biology Education

Course No.: Bio. Ed. 535 P

Nature of course: Practical

Level: M.Ed. in Biology

Credit Hours: 1

Semester: Third

Teaching hours: 48*

Periods per week: 3 pds/day/week/gr (P)**

1. Course Description

This practical course acquaints students to impart the knowledge and skills they need to instruct practical classes in biology education. It boosts the ability for producing reports, presentations, and seminar papers in addition to the capacity for leading workshops, utilizing cutting-edge lesson planning strategies, e-learning, and improvised materials, designing biology labs, and assessing biology education at various levels.

2. General Objectives

The objectives of this course are to enable students to

- Analyze the issues of the different aspects of the biology curriculum;
- Prepare research articles based on the recent pedagogical approaches in biology education;
- Examine the existing secondary school biology practices;
- Prepare and present seminar papers by conducting seminars on the issues of biology education;
- Develop the skills in PowerPoint presentations and skills of engaged and lived presentations;

3. Contents

Students Activities/Contents	Total hours (48)
<p>Unit I: Developmental Perspectives of Biology Education</p> <ul style="list-style-type: none"> • Prepare a discussion paper on the application of Biology for daily life. • Prepare report on school and the university-based issues of Biology teaching and learning. • Critically review the assigned research papers. • Prepare the manuscript for journal articles within the areas of this unit. • Carry out a mini research study on indigenous knowledge in biology. • Make a report on paradigm shifts in biology from the 	9

different perspectives.	
<p>Unit II: Biology Study Curriculum</p> <ul style="list-style-type: none"> • Report on the issues of different aspects of curriculum (e.g., curriculum development process, aspects of curriculum) and organize discussion session. • Analyze the secondary level Biology curriculum based on the structure, scope, objectives, organization, strategies and evaluation and then prepare a report on it. • Prepare a sample curriculum based on the related biology topics. 	6
<p>Unit III: Planning of Biology Teaching</p> <ul style="list-style-type: none"> • Prepare a unit plan for a topic of your choice in biology and present it to the class. • Prepare a lesson plan for teaching in biology based on the ABC approach, 7E approach, project-based approach and problem-solving approach. 	6
<p>Unit IV: Instructional Module and e-learning</p> <ul style="list-style-type: none"> • Design an instructional module on topics related to Biology lessons. • Design LMSs for teaching and learning Biology. • Search web-based materials for teaching and learning Biology. • Review research articles related to simulation in teaching biology. • Review research articles related to the effectiveness of gaming mode teaching strategy in the secondary level school biology. • Apply videoconferencing to learning biology. 	12
<p>Unit V: Biology Laboratory</p> <ul style="list-style-type: none"> • Design various models of biology laboratory. • Conduct different biology related-related activities using the virtual laboratory. • Conduct a survey on students' awareness of laboratory-based 	9

<p>activities, lab safety, accidents, and first aid treatment.</p> <ul style="list-style-type: none"> • Design improvised materials of various kinds using locally available materials. 	
<p>Unit VI: Unit VI: Evaluation</p> <ul style="list-style-type: none"> • Develop a model specification chart for testing Biology • Design biology courses test item of different levels of cognitive domain and then administer and calculate the item difficulty and discrimination index. • Construct a set of test items of biology courses based on the revised Bloom's taxonomy. 	6

4. Specific Instructional Techniques

- Internet surfing
- Develop manuscript by collaboration and discussion
- Workshops: Presentation, participatory activities
- Books and article review
- Field visit
- Preparation of charts, models, presentations slides, and reports.

5. Evaluation

35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation**20 Marks**

Marks distribution for practical external evaluation will be as following.

1.	Experiment/project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessments of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing biology lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

Recommended Books and References

Ahmad, J., (2011). *Teaching of Biological Science (2nd edition)*. New Delhi: PHI

Learning Private Limited.

Agarwal, P. K. (2018). Retrieval practice & Bloom's taxonomy: Do students need fact knowledge before higher-order learning? *Journal of Educational Psychology*.

Bio. Ed. 536 T: Basic Biotechnology

Course No. : Bio. Ed. 536 T

Nature of course: Theoretical

Level : M. Ed. in Biology

Credit hours: 2

Semester : Third

Teaching hours: 32

Period per week: 2

1. Course Description

This course aims to provide knowledge on recent advances on biotechnology and its applications in various fields. Specially it deals with the present status of biotechnological works in cell and tissue culture with reference to Nepal and also provides the students with knowledge of biotechnological techniques.

2. General Objectives

General objectives of this course are as follows:

- To acquaint students with the knowledge of present status and scope of biotechnology.
- To provide knowledge on tissue culture methods.
- To familiarize with the recent advances in biotechnology and its applications in various fields with particular reference to Nepal.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the scope and importance of biotechnology. • Summarize the present status of biotechnology in Nepal. • Explain briefly about biotechnological applications in plant and agriculture, food and industries, medicine and pharmaceuticals and environment and conservation • Discuss the risks and hazards of biotechnology. 	<p>Unit I. Biotechnology (6 pds)</p> <p>1.1 Introduction</p> <p>1.2 Scope and importance of biotechnology</p> <p>1.3 Present status of biotechnology in Nepal</p> <p>1.4 Biotechnological Applications</p> <p>1.4.1 Plant and Agriculture (Plant tissue culture, Biofertilizer -Rhizobia, blue green algae, Frankia and Mycorrhiza, Biopesticides)</p> <p>1.4.2 Food and Industries (vitamins and enzymes; biogas, alcohol, organic acid, and amino acid), Biotechnology in diary industry</p> <p>1.4.3 Medicine and Pharmaceuticals (antibody production, production of human and animal vaccines, diagnosis of infectious disease,</p>

	<p>hormones, enzymes, pharmacogenomics),</p> <p>1.4.4 Environment and Conservation (Bioremediation, Bioplastics, waste treatment)</p> <p>1.5 Risks and hazards of biotechnology</p>
<ul style="list-style-type: none"> • Give the concept of Genetic Engineering and its applications in the field of medicine, human health, agriculture and environment. • Explain some important drawbacks of genetic engineering. 	<p>Unit II. Genetic Engineering (4 pds)</p> <p>2.1 Genetic engineering or recombinant DNA technology.</p> <p>2.1.1 Concept of genetic engineering</p> <p>2.1.2 Application of Genetic Engineering in the field of medicine and human health (recombinant vaccine, Human Growth hormone, Insulin, Interferons).</p> <p>2.1.3 Application of Genetic Engineering in the field of Agriculture and Environment (production of resistant varieties of crops, bio-fertilization, increase the protein content)</p> <p>2.1.4 Possible drawbacks of Genetic Engineering</p>
<ul style="list-style-type: none"> • Elaborate the concept of different types of tissue culture. • Describe the requirements for tissue culture (Different culture media and their composition, and sterilization techniques). • Explain micro-propagation techniques and their applications. • Describe important applications of tissue culture in micropropagation, protoplast fusion, somatic hybridization, disease free plants 	<p>Unit III. Plant Tissue Culture (12 pds)</p> <p>3.1 Introduction</p> <p>3.2 Types of tissue culture</p> <p>3.2.1 Seed culture</p> <p>3.2.2 Embryo culture</p> <p>3.2.3 Anther culture</p> <p>3.2.4 Organ culture</p> <p>3.2.5 Suspension culture</p> <p>3.2.6 Single cell culture</p> <p>3.2.7 Meristem culture</p> <p>3.2.8 Protoplast culture</p>

<ul style="list-style-type: none"> • Explain the present status of tissue culture laboratories in Nepal. 	<p>3.3 Requirements for Plant Tissue Culture</p> <p>3.3.1 Different media and their composition used in plant tissue culture</p> <p>3.3.2 Media preparation</p> <p>3.3.3 Inorganic nutrients</p> <p>3.3.4 Organic nutrients</p> <p>3.3.5 Growth hormones</p> <p>3.3.6 Agar</p> <p>3.3.7 pH</p> <p>3.3.8 Sterilization Techniques</p> <p>3.4 Applications of Plant Tissue Culture</p> <p>3.4.1 Micropropagation</p> <p>3.4.2 Protoplast fusion</p> <p>3.4.3 Somatic hybridization</p> <p>3.4.4 Disease free plants</p> <p>3.5 Status of tissue culture laboratories in Nepal</p>
<ul style="list-style-type: none"> • Give brief introduction to environmental biotechnology. • Describe the role of biotechnology in preservation of the environment with respect to waste treatment. • Elaborate the application of biotechnology for biodegradation and bioremediation. 	<p>Unit IV. Environmental Biotechnology (2pds)</p> <p>4.1 Introduction</p> <p>4.2 Waste Treatment</p> <p>4.2.1 Aerobic Waste treatment</p> <p>4.2.2 Anaerobic Waste treatment</p> <p>4.3 Biodegradation and Bioremediation</p>
<ul style="list-style-type: none"> • Give the concept, importance and drawbacks of genetically modified crops (GM crops). 	<p>Unit V. Genetically Modified (GM) Crops (2pds)</p> <p>5.1. Introduction</p> <p>5.2. Importance of GM crops.</p> <p>5.3. Drawbacks of GM crops.</p>
<ul style="list-style-type: none"> • Give the concept of In-vitro fertilization in animals. • Describe different methods of In- 	<p>Unit VI. Manipulation of Reproduction in Animals (4pds)</p> <p>6.1. Introduction</p>

<p>vitro fertilization in animals for artificial insemination, embryo transfer technology.</p> <ul style="list-style-type: none"> • Illustrate transgenic animals and give importance of transgenic animals. • Elaborate the concept of test tube baby. 	<p>6.2. Methods of Manipulation</p> <p style="padding-left: 40px;">In-vitro fertilization in animals</p> <p>6.2.1. Artificial insemination</p> <p>6.2.2. Embryo transfer technology</p> <p>6.3. Transgenic animals and their importance</p> <p>6.4. Test Tube baby</p>
<ul style="list-style-type: none"> • Give introduction to cryopreservation. • Explain the methods and uses of cryopreservation 	<p>Unit VII. Cryopreservation (2pds)</p> <p>7.1 Introduction</p> <p>7.2 Methods of Cryopreservation</p> <p>7.3 Uses and importance of Cryopreservation</p>

Note: The figures within parenthesis indicate the appropriate teaching hours allocated to respective units.

5. Instructional Techniques

The instructional techniques are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques/activities applicable to the specific units.

S.N.	Units	Title	General Instructional Techniques	Specific Instructional Techniques
1.	I	Biotechnology	Lecture and discussion methods; power-point presentation	internet search, Group activities; Inquiry
2.	II	Genetic Engineering	Lecture and discussion methods; Power-point presentation Inquiry	Internet surfing, Project work; Group work; Field Trip
3.	III	Plant Tissue Culture	Lecture and discussion methods; Power-point presentation	Collaborative method, Brain Storming; Seminar method; Internet search; Field Trip; Problem solving and reports
4.	IV	Environmental Biotechnology	Lecture and discussion methods, Book review	Demonstration method; Project work; Field Trip; Case studies; and reports
5.	V	Genetically Modified (GM)	Lecture and discussion methods; power-point	Collaborative method; Reading and Critical

		Crops	presentation Internet search;	analysis of research article; Group work; Case studies; Problem solving and reports
6	VI	Manipulation of Reproduction in Animals	Lecture and discussion methods; Inquiry method; power-point presentation, Book review, Inquiry Internet search,	Collaborative work, Field Trip, problem solving and reports,
7	VII	Cryopreservation	Lecture and discussion methods; power-point presentation, internet search, Book review Inquiry	Case studies; Field Trip

Note: Each student must come up with a project work individually or in group but with clear role and responsibility. The teacher and students may decide the project work from the list above or alternative related to the course work.

4. Evaluation

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

4.1 Internal Evaluation

25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

- | | |
|--|-----------------|
| 1. Attendance and participation in learning activities | 5 marks |
| 2. First assignment (written assignment) | 5 marks |
| 3. Second assignment (report writing and presentation) | 5 marks |
| 4. Third assignment/ Exam | 10 marks |
| Total | 25 Marks |

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

4.2 External Evaluation (Final Examination)

40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

- | | |
|---|-----------------|
| 1. Objective questions (Multiple Choice Questions 10 x 1mark) | 10 Marks |
| 2. Subjective questions (6 questions with 2 'OR 'questions x 5 marks) | 30 Marks |
| Total | 40 Marks |

5. Recommended Books and References

Recommended Books

Dubey, R. C. (2013). *A Text Book of Biotechnology*. New Delhi: S. Chand & Company Ltd. **(For Unit I, II, V & VI)**

Ignacimuth, S. J. (2007). *Basic Biotechnology*. New Delhi: Tata Mc. Graw Hill Pub. Company Ltd. **(For Unit IV)**

Ratledge, C., & Kristiansen, B. (2001). *Basic biotechnology*. London: Cambridge University Press. **(For Unit I and III)**

Scragg, A. H. (2005). *Environmental biotechnology*. New York: OXFORD university Press. **(For Unit IV)**

Verma, S., & Verma, M. (2008). *A textbook of plant physiology, biochemistry and biotechnology*. New Delhi: S. Chand Publishing. **(For Unit III to XI)**

References

Gupta, P.K. (2000). *Elements of Biotechnology*, Rastogi Publications, New Delhi.

Keshari, A. K., & Adhikari, K.K. (2010). *A Text book of Higher Secondary Biology*. Kathmandu: Vidyarthi Publications. **(Unit I, II, III)**

Purohit, S.D. (2013). *Introduction to Plant Cell, Tissue and Organ Culture*. Delta: PHI Learning Private Limited.

Singh, B. D. (2010). *Biotechnology*. Kalyani Publishers.

Crueger, W., & Crueger, A. (2017). *Crueger's Biotechnology: A Textbook of Industrial Microbiology*. India: MedTech. **(Unit I)**

Smith, J.E. (1996). *Biotechnology, 3rd Edition*. London: Cambridge University Press.

Cassida, L.E. (1996). *Industrial Microbiology*. New Delhi: New Age Int. Publishers.

Dubey, R.C. (2001). *Textbook of Biotechnology*. New Delhi: S Chand and Company Ltd.

Bio. Ed. 536 P: Basic Biotechnology

Course No : Bio. Ed. 536 P

Nature of the course: Practical

Level : M.Ed. in Biology

Credit hours: 1

Semester : Third

Teaching hours: 48*

Period per week: 3pds/day/week/gr * *(P)

1. Course Description:

This course is practical course and designed to develop knowledge and skills for conducting biotechnology practical. It also provides the knowledge and skill about plant and animal cell/tissue culture and micro propagation techniques. Through field visit to different places students will develop ideas to promote the use of biotechnology in agriculture, horticulture, animal farm, different industries etc.

2. General Objectives:

The general objectives of this course are as follows:

- To familiarize the students with the lab equipment used in biotechnology lab and describe their functions
- To develop hands on skills of biotechnology laboratory
- To acquaint the students with knowledge and practical skills of different biotechnological techniques

3. Specific Objectives and Contents:

Specific Objectives	Contents (48pds)
<ul style="list-style-type: none"> • Study and use different sterilization equipment. • Perform surface sterilization of some plant parts 	<p>Unit I: Sterilization Techniques (3x3= 9 pds)</p> <p>1.1 Different equipment used for Sterilization techniques</p> <p>1.2 Surface sterilization of explant</p>
<ul style="list-style-type: none"> • Prepare culture media • Prepare stock solution media 	<p>Unit II: Media and Stock Solution Preparation (4 x 3= 12 pds)</p> <p>2.1 Preparation of media for different plant tissue culture media</p> <p>2.2 Preparation of stock solution- Murashige and Skoog medium (1962).</p>
<ul style="list-style-type: none"> • Perform Micropropagation techniques and other types of 	<p>Unit III: Micropropagation (2 x 3 = 6 pds)</p>

tissue culture	3.1 Micropropagation technique, organ culture and anther culture
<ul style="list-style-type: none"> Visit to nearby laboratories, treatment and production units, conservation areas, and organizations working in the sector of biotechnology and submit the reports. 	<p>Unit IV: Field Visit: (7 x 3 = 21 pds)</p> <ul style="list-style-type: none"> Tissue culture laboratories to study tissue culture methods and their applications Universities botany laboratories, biotechnology laboratories, Forensics lab, Department of Food Technology and Quality Control (DFTQC), Biotech companies' laboratories, Food laboratories Waste treatment area, distillery plant, dairy farm, Zoo, botanical gardens, conservatories, wildlife reserves, conservatories, Nurseries, farms, wildlife reserves, National Agriculture Research Council (NARC), Nepal Academy of Science and technology (NAST),

Note: Each student must come up with a project work individually or in group but with clear role and responsibility. The teacher and students may decide the project work from the list above or alternative related to the course work.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

S. N.	Title	General Instructional Techniques	Specific Instructional Techniques
1.	Study and use different sterilization	Lecture and discussion	Demonstration method, Group work

	equipment.	methods; power-point presentation	
2.	Perform surface sterilization of some plant parts	Performing experiments	Demonstration method; Individual laboratory work;
3.	Prepare culture media	Performing experiments	Collaborative method; Individual laboratory work; Problem solving
4.	Prepare stock solution media	Performing experiments	Demonstration method; Individual laboratory work
5.	Perform Micropropagation techniques and other types of tissue culture	Performing experiments	Demonstrative method; Individual laboratory work; Problem solving and reports
6	Visit to any nearby local area	Field visit, Interview and report writing	Collaborative work, field work, problem solving and reports

5. Evaluation

35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books and References for Practical

Bhattacharai, T. (2005). *Experiments on Plant Biochemistry and Plant Biotechnology*.

Kathmandu Bhundipuram Prakashan,

Gamborg, O.L. (2002). Plant Tissue Culture, Biotechnology, Milestones. *In vitro cellular and Developmental Biology- Plant*, 38, 84- 92.

Robert, N. T and Dennis J.G. (2000). *Plant Tissue culture Concept and Laboratory Exercises*, (2nd edition). CRC Press.

Smith, R.A. (1992). *Plant Tissue Culture. Techniques and Experiments*. Academic Press, Inc., San Diego, CA

Bio. Ed. 537 T: Fundamentals of Microbiology

Course No : Bio. Ed. 537 T

Nature of the course: Theoretical

Level : M.Ed. in Biology

Credit hours: 2

Semester : Third

Teaching hours: 32

Periods per week: 2

1. Course description:

This course aims to give advanced knowledge on general aspects of microbiology and general concepts on specific aspects of microbiology such as food, medical, environmental and pharmaceutical microbiology. It deals with general characteristics of microorganisms, their impact to human beings on different fields such as food, medicine, environment and pharmaceuticals.

2. General objectives

The general objectives of this course are as follows:

- To provide detail knowledge on the structure and reproduction of microorganism.
- To familiarize student with the preservation, contamination and spoilage of different food and food products.
- To impart knowledge on disease transmission and immunity of organism against infections.
- To provide knowledge on transmission of microbial diseases, concept of epidemic, endemic, pandemic and sporadic, basic immune system, host parasite relationship.
- To provide knowledge on water, sewage treatment and proper management of solid waste.
- To introduce brief knowledge on antibiotics and their mode of actions on microorganism.
- To impart knowledge on importance of microorganisms in daily life.

3. Specific objectives and content:

Specific objectives	Contents
<ul style="list-style-type: none"> • Define and describe microbiology. • Explain the characteristics of major groups of microorganisms. • Discuss the characteristics of prokaryotic and eukaryotic microorganisms. • Compare and contrast the cellular level of Prokaryotes, archaea and eukaryotes. • Define and describe bacteria. • Classify bacteria on the basis of Morphology, Motility, Staining, Gaseous requirements, Temperature, pH requirements, Salt requirements, Mode of nutrition. • Describe intracellular and extracellular structure of bacteria. • Describe structure and multiplication of bacteria. • Describe the structure and multiplication and Replication of virus. • Explain different methods of controlling microorganisms by using different techniques. 	<p>Unit I General Microbiology (12 hrs.)</p> <p>1.1 Introduction to microbiology</p> <p>1.2 Characteristics of major groups of microorganisms (bacteria, archaea, fungi (yeasts and molds), algae, protozoa, and viruses</p> <p>1.3 Characteristics of prokaryotic and eukaryotic microorganisms</p> <p>1.4 Differentiation among prokaryotes, archaea and eukaryotes</p> <p>1.5 Bacteria</p> <p>1.5.1 Classification based on morphology, motility, staining, gaseous requirements, temperature, pH requirements, salt requirements, mode of nutrition mostly (photo lithotrophic, chemo lithotrophic, photo organotrophic, chemoorganotrophic),</p> <p>1.5.2 Structure (intracellular and extracellular)</p> <p>1.5.3 Multiplication</p> <p>1.6 Virus (Structure of virus, multiplication)</p> <p>1.7 Control of microorganism by physical agents (temperature, radiation, and filtration). and chemical agents (chlorine, formaldehyde, glutaraldehyde, quaternary ammonium compounds, and Ethylene oxide.</p> <p>1.7.1 Definition of Sterilization, Disinfection, Disinfectant, Antiseptic agent, Bacteriostatic agents,</p>

<ul style="list-style-type: none"> • List the physical and chemical controlling agents. • Compare and contrast Sterilization, disinfection, antiseptics 	<p>Bactericidal agents, antimicrobial agents.</p>
<ul style="list-style-type: none"> • Explain the principles of food preservation. • Explain food preservation techniques. • Describe the basic concept of contamination, spoilage and preservation of canned food, meat, milk and vegetables. • Food borne diseases. • Basic concept of food poisoning and food infection. • Explain different types of Mycotoxins. 	<p>Unit II Food Microbiology (5 hrs.)</p> <p>2.1 Principles of food preservation</p> <p>2.2 Food preservation techniques</p> <p>2.3 Basic concept of contamination, spoilage and preservation of canned food, meat and meat products, milk and milk products and vegetables</p> <p>2.4 Causative agent of food borne diseases, (Staphylococcus aureus and clostridium botulinum food infections) and preventive methods for food borne diseases methods</p> <p>2.5 Mycotoxins</p> <p>2.6 Types of Mycotoxins, their effects on health and mitigation of mycotoxins</p>

<ul style="list-style-type: none"> • Describe infection • Explain different modes of transmission of diseases • Explain normal microbial flora of human body • State the basic concept of host parasite relationship • Vector borne diseases • Define immunity • Defense mechanism of human body against infections and diseases • Anatomical and biochemical barriers of immunity 	<p>Unit III Medical Microbiology (7 hrs.)</p> <p>3.1. Infection</p> <p>3.1.1 Generalized infection, Localized infection</p> <p>3.2. Health and Disease</p> <p>3.2.1 Epidemic, Endemic, Pandemic, Sporadic</p> <p>3.2.2 Mode of transmission of diseases</p> <p>3.2.3 Normal microbial flora of human body</p> <p>3.2.4 Basic concept of host parasite relationship</p> <p>3.2.5 Causative agent of vector borne diseases, examples and prevention methods</p> <p>3.3 Immunity</p> <p>3.3.1 Basic concept of antigen and antibody</p> <p>3.3.2 Defense mechanism against infections and diseases</p>
<ul style="list-style-type: none"> • Microbiological, physical and chemical parameters of drinking water • Describe indicator organisms of water pollution • Drinking water treatment in household purpose (small scale) • Describe the of municipal water treatment and sewage treatment process • Explain the concept of solid waste management 	<p>Unit IV Environmental Microbiology (5 hrs.)</p> <p>4.1 Causative agent of air and water borne diseases, (cholera, Salmonellosis, Vibriosis, amebiasis and Giardiasis examples and prevention methods</p> <p>4.2 WHO and Nepal guidelines for drinking water standards</p> <p>4.3 Indicator organisms of water pollution</p> <p>4.4 Household water treatment by boiling, chlorination, iodination, filtration, Solar disinfection (SODIS)</p> <p>4.5 Detailed process of municipal water treatment, sewage treatment and solid</p>

<ul style="list-style-type: none"> • Air and water borne diseases 	waste management.
<ul style="list-style-type: none"> • Give the concept of antibiotics • Describe the types of antibiotics in brief • Antifungal and antiviral drugs in brief • Explain the mode of actions of antibiotics in detail 	<p>Unit V Pharmaceutical Microbiology (3 hrs.)</p> <p>5.1. Concept of antibiotics</p> <p>5.2. Types of antibiotics, basis for classification of antibiotics</p> <p>5.3 Definition and examples of antifungal and antiviral drugs</p> <p>5.4. Mode of action of antibiotics</p>

Note: The figures within parenthesis indicate the appropriate teaching hours allocated to respective units

4. Instructional Techniques

The instructional techniques are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques/activities applicable to the specific units.

Units	General Instructional Techniques	Specific Instructional Techniques
I	<ul style="list-style-type: none"> • Lecture and discussion methods; Inquiry method, power point presentation, Internet search 	<ul style="list-style-type: none"> • Preparation of charts on field and scopes of Microbiology • Preparation of charts on different classification basis of bacteria
II	<ul style="list-style-type: none"> • Lecture and discussion methods; Inquiry method, collaborative method, power point presentation, Internet search 	<ul style="list-style-type: none"> • Project work will be given to prepare the report for traditional food preservation techniques of Nepal • Preparation of report on status of food borne disease occurring in Nepal
III	<ul style="list-style-type: none"> • Lecture and discussion methods; Inquiry method, collaborative method, Internet search, power point presentation 	<ul style="list-style-type: none"> • Project work will be given to prepare the report on traditional disease healing methods of Nepal • Preparation of charts on types of

		communicable and non-communicable disease occurring in community
IV	<ul style="list-style-type: none"> Lecture and discussion methods; Inquiry method, collaborative method, power point presentation, Internet search 	<ul style="list-style-type: none"> Preparation of report on status of water related disease in Nepal Preparation of report on ways of house hold water treatment process in community
V	<ul style="list-style-type: none"> Lecture and discussion methods; Inquiry method, Collaborative method, power point presentation, Internet search, 	<ul style="list-style-type: none"> Preparation of charts on commercially available different types of antibiotics, antiviral and antifungal drugs Preparation of report on status of antibiotic resistance pattern of microorganisms in Nepal

Note: Each student must come up with a project work individually or in group but with clear role and responsibility. The teacher and students may decide the project work from the list above or alternative related to the course work.

5. Evaluation

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1 Internal Evaluation

25 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance and participation in learning activities	5 marks
2. First assignment (written assignment)	5 marks
3. Second assignment (report writing and presentation)	5 marks
4. Third assignment/ Exam	10 marks
Total	25 Marks

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.2 External Evaluation (Final Examination)

40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
2. Subjective questions (6 questions with 2 'OR ' questions x 5 marks)	30 Marks
Total	40 Marks

Recommended Books

Aneja, K. R., Jain, P., & Aneja, R. (2008). *A Textbook of Basic and Applied Microbiology*. New Delhi: New Age International Publishers. **(For Unit I)**

Atlas, R. M. (1998). *Microbial ecology: fundamentals and applications*. India: Pearson Education. **(For Unit I)**

Cappuccino, J. G., & Welsh, C. T. (2017). *Microbiology: a laboratory manual*: Pearson Education. **(For Unit III)**

Greenwood, D., Slack, R. C., Barer, M. R., & Irving, W. L. (2012). *Medical Microbiology*

E-Book: A Guide to Microbial Infections: Pathogenesis, Immunity, Laboratory

Diagnosis and Control: Elsevier Health Sciences. **(For Unit III)**

Denyer, S. P., Hodges, N. A., & Gorman, S. P. (2008). *Hugo and Russell's pharmaceutical microbiology*: John Wiley & Sons. **(For Unit V)**

World Health Organization [WHO]. (2004). *Guidelines for drinking-water quality* (Vol. 1): World Health Organization. **(For Unit IV)**

Dubey, R. C., & Maheshwari, D. K. (2003). *A Text Book of Microbiology*. New Delhi: S. Chand & Company. **(For Unit III)**

Frazier, W. C., & Westhoff, D. C. (1986). *Food Microbiology* (3rd ed.). New Delhi: Tata McGraw-Hill Publishing Company Limited. **(For Unit II)**

Jay, J. M., Loessner, M. J., & David, A. (2005). *Modern food microbiology*. New York: Springer Science & Business Media Inc. **(For Unit II)**

Pelczar, I. L., Gerba, C. P., Gentry, T. J., & Maier, R. M. (2011). *Environmental microbiology*. New Delhi: Academic press. **(For Unit I, IV)**

Michael, T. M., & John, M. M. (2006). *Brock biology of Microorganism* (11th ed.). India:

Pearson Education International. **(For Unit I)**

Philip, A. T. (2007). *Clinical Microbiology*. UK: Orient Longman Private. **(For Unit III)**

Pelczar, M. J., Chan, E. C. S., & Kreig, N. R. (2003). *Microbiology* (5th ed.). New Delhi: Tata McGraw-Hill. **(For All Units)**

Madigan, M. T., Bender, K. S., Buckley, D. H., Sattley, W. M., & Stahl, D. A. *Brock Biology of Microorganisms* (Global Edition, 15th ed.). London: Pearson.

Bio. Ed. 537 P: Fundamentals of Microbiology

Course No : Bio. Ed. 537 P

Nature of the course: Practical

Level : M.Ed. in Biology

Credit hours: 1

Semester : Third

Teaching hours: 48*

Period per week: 3pds/day/week/gr * *(P)

1. Course Description:

This course is designed to perform practical activities / experiments on the subject Microbiology. It also includes field studies, laboratory exercises (analysis), and creative activities for developing knowledge and skills for different experiments concerned with the field of microbiology.

2. General objective:

The general objectives of this course are as follows:

- To operate and find out working principle of different instruments used in microbiology laboratory.
- To develop hand skills on basic microbiological techniques.
- To isolate microorganism from water, air and food products.
- To make them able to know the importance of hand washing.
- To develop knowledge and skills on basic immunological techniques.
- To visit different industries to gain knowledge on microbiology.

3. Specific Objectives and Contents:

Specific objectives	Contents
<ul style="list-style-type: none"> • Explain the structure and working principles of incubator, autoclave, hot air oven and laminar flow. • Describe some microbial techniques: Smear preparation, wet mount preparation, simple staining technique and cultural technique. 	<p>Unit I. General Microbiology (5 × 3 = 15pds)</p> <p>1.1 Structure and working principles of incubator, autoclave, hot air oven and laminar flow</p> <p>1.2 Some techniques used in microbiological studies:</p> <p>a. Smear preparation,</p> <p>b. Wet mount preparation (hanging drop method),</p> <p>c. Preparation of different cultural media,</p> <p>d. Staining technique: Simple staining</p>

<ul style="list-style-type: none"> • Preparation of charts and models 	<p>technique, Gram staining technique</p> <p>1.3 Charts/models preparation on</p> <ol style="list-style-type: none"> Eukaryotic and Prokaryotic cells Life cycle of virus Methods of reproduction in bacteria
<ul style="list-style-type: none"> • Perform Methylene blue reduction time test, Resazurin test, acidity test, Clot on Boil (COB) test in milk, starch adulteration test • Enumerate the total number of bacteria in Meat and Meat products 	<p>Unit II. Food Microbiology (4 × 3 = 12pds)</p> <p>2.1 Methylene Blue Reduction Time test (MBRT), Resazurin test and Acidity test in Milk, Clot on Boil (COB) test, starch adulteration test</p> <p>2.2 Total number of bacteria in Meat and Meat products (<i>Coliform</i>, <i>Salmonellaspp</i>) by</p> <ol style="list-style-type: none"> pour plate and spread plate method
<ul style="list-style-type: none"> • Perform some basic serological tests: <ol style="list-style-type: none"> Antigen detection: Pregnancy test and latex agglutination (sample- urine), Antigen detection: Blood grouping by using anti A, anti B and anti D sera • Study Microbial normal flora in human body 	<p>Unit III. Medical Microbiology (2 × 3 = 6pds)</p> <p>3.1 Some basic serological tests:</p> <ol style="list-style-type: none"> Antigen detection: Pregnancy test by immune chromatography and latex agglutination (sample- urine), Antigen detection: Blood grouping by using anti A, anti B and anti D sera <p>3.2 Range of microbial population in healthy human body (skin or nose)</p>
	<p>Unit IV. Environmental Microbiology (2 × 3 =</p>

<ul style="list-style-type: none"> Investigate the air micro flora by plate exposure method (settle plate method) Determine the Coliform bacteria in water by Most Probable Number (MPN) method. Preparation of charts and models 	<p>6pds)</p> <p>4.1 Enumeration of air bacteria and fungi by Plate Exposure method</p> <p>4.2 Determination of Coliform bacteria in water by Most Probable Number (MPN) method</p> <p>4.3 Charts/models preparation on</p> <p>a. Drinking water and sewage treatment process</p>
<ul style="list-style-type: none"> Find out the different methods used for controlling microorganism in Dairy or Meat processing factory in the locality Visit different localities to observe different methods of solid waste management practiced in the locality and make a report. For e.g. solid waste management through vermi-composting method Observe different ways of sewage treatment practiced in the nearby locality and prepare the report 	<p>Unit V. Field Studies (3 × 3 = 9pds)</p> <p>5.1 Methods used for controlling microorganism in dairy or meat processing factory in the locality</p> <p>5.2 Different methods of solid waste management practiced in the locality</p> <p>a. solid waste management through vermi-composting method</p> <p>5.3 Sewage treatment method practiced in the locality</p>

Note: Each student must come up with a project work individually or in group but with clear role and responsibility. The teacher and students may decide the project work from the list above or alternative related to the course work.

4. Instructional Techniques:

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

Units	General Instructional	Specific Instructional Techniques
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	Techniques	
I	<ul style="list-style-type: none"> Lecture and discussion methods; power point presentation, performing experiments, Record keeping 	<ul style="list-style-type: none"> Handling of equipments, smear preparation, group work, chart preparation
II	<ul style="list-style-type: none"> Lecture and discussion methods; power point presentation, performing experiments, Record keeping 	<ul style="list-style-type: none"> Group work
III	<ul style="list-style-type: none"> Lecture and discussion methods; power point presentation, performing experiments, Record keeping 	<ul style="list-style-type: none"> Group work
IV	<ul style="list-style-type: none"> Lecture and discussion methods; power point presentation, performing experiments, Record keeping 	<ul style="list-style-type: none"> Field trip, Group work, Chart preparation
V	<ul style="list-style-type: none"> Demonstration method, collaborative method, Inquiry method 	<ul style="list-style-type: none"> Field trip, Group work, report preparation

5. Evaluation

35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books

Collins, C.H., Patricia, M., & Lyne, J.M. (1995). Collins and Lynes Microbiological Methods 7th edition. Grange, Butter Worth, Oxford.

Cappuccino, J. G., & Welsh, C. T. (2017). *Microbiology: a laboratory manual*: Pearson Education.

Hurst, C.J. (2001). A Manual of Environmental Microbiology, 2nd edition. ASM Publications.

Bio.Ed. 539: Advanced Research Methodology in Science Education-Biology

Course No: Bio.Ed.539

Nature of the course: Theoretical

Level: M.Ed. in Biology

Credit hours: 3

Semester: Third

Teaching hours: 48

Periods per week: 3

1. Course Description

This course on "Advanced Research Methodology in Science Education (Biology)" aims to provide an in-depth knowledge into the pursuit of research in qualitative and quantitative approach in science education. It intends to develop their skills on statistical analysis with a focus on science education research, application of descriptive and inferential statistics in analyzing quantitative and qualitative data. It further deals with research proposal including report writing procedures in science education.

2. General Objectives

The general objectives of this course are as follows:

- To provide students with an opportunity to understand inquiry-based research with its application.
- To interpret the nature and fundamentals of research in science education.
- To carry out academic research as a cohesive and coherent piece of work.
- To provide the students with hands on experience on statistical tools in data analysis.
- To enable the students to prepare research report using appropriate methods and approaches.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the meaning of paradigms and paradigm shift in science education research. • Illustrate the scientific revolution on the basis of Kuhn's revolution theory. • Discuss the epistemology, ontology and axiology as philosophical bases for educational research. • Critically analyze the positivist, post-positivist, social 	<p>Unit I. Paradigms and Philosophies of Science Education Research (6hrs.)</p> <p>1.1 Paradigms in Science Education Research</p> <p>1.2 Scientific revolution and paradigm shift</p> <p>1.3 Kuhn's scientific revolution theory</p> <p>1.4 Philosophical bases for research</p> <p>1.4.1 Epistemology, ontology, axiology, methodology</p> <p>1.5 Philosophical world views: Positivist and post-positivist, social constructivist and pragmatist</p> <p>1.6 Scientific research: steps and importance</p> <p>1.6.1 Types of scientific research methods</p> <p>1.7 Inductionism and deductionism</p>

<p>constructivist and pragmatist research world views in science education research.</p> <ul style="list-style-type: none"> • Introduce scientific method of research and its types. • Describe steps of scientific research and its importance. • Elaborate the meaning of inductionism and deductionism. in terms of science education research. • Appraise critically the oriental and western philosophy of science and research traditions. • Discuss the brief history of biology education research (BER). • Critically analyze the methods and research trends in biology education research. 	<p>1.8 Oriental and western philosophy in science research traditions</p> <p>1.9 Biology Education Research (BER)</p> <p>1.9.1 History, methods and research trends</p>
<ul style="list-style-type: none"> • Understand the meaning of research design, research approach, research method and research methodology. • Apply various quantitative research designs and approaches in science education. • Infer experimental research and apply in science education research. • Elaborate and use of comparative and co-relational research in science education research. 	<p>Unit II: Research Approaches and Methods (10pds)</p> <p>2.1 Concept of research design, research approach, research method, and methodology in research</p> <p>2.2 Quantitative research in science Education</p> <p>2.2.1 Experimental research</p> <p>2.2.2 Comparative and correlational research</p> <p>2.2.3 Survey</p> <p>2.3 Qualitative research in Science Education</p> <p>2.3.1 Case study</p>

<ul style="list-style-type: none"> • Detailed and employ survey research in research on science education. • Elaborate the meaning of qualitative research design • Comprehend the process of case study research methodology in science education. • Examine the methodology of ethnographic research in the field of science education. • Discuss the process of phenomenological research. • Discuss narrative approach in science education research. • Explain Hermeneutics approach in educational research. • Understand the methodology of participatory action research in science education. • Describe various types of mixed method research design • Explain use of mixed method and multi-method research designs in science education research. 	<p>2.3.2 Ethnography</p> <p>2.3.3 Phenomenology</p> <p>2.3.4 Narrative</p> <p>2.3.5 Hermeneutics</p> <p>2.4 Participatory action research in science education</p> <p>2.5 Mixed method and multi-method research in science education</p>
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<ul style="list-style-type: none"> • Use appropriate statistical tools in research for data management in science education. • Explain general principles of data analysis. • Discuss data management and processing such as data checking, editing, coding, recoding and data entry. • Interpret different approaches of data analysis in quantitative research. • Use SPSS for calculating and visualizing the descriptive data. • Interpret the mean, median and standard deviation in the science education research. • Apply parametric and non-parametric tests in scientific research. 	<p>Unit III: Application of Descriptive and Inferential Statistics (16 hrs.)</p> <p>3.1 Data management and Descriptive statistics</p> <p>3.1.1 General principles of data analysis</p> <p>3.1.2 Data management and processing: Data checking, editing, coding, recoding, data entry</p> <p>3.1.3 Data entry in SPSS programme</p> <p>3.1.4 Displaying data in frequency and cross tables, and figures using SPSS</p> <p>3.2 An overview of descriptive statistics</p> <p>3.2.1 Measures of central tendency</p> <p>3.2.2 Measures of dispersion</p> <p>3.2.3 Measures of correlation</p> <p>3.2.4 Simple regression</p> <p>3.3 Inferential Data Analysis</p> <p>3.3.1 Parametric tests</p> <p>3.3.1.1 Hypothesis testing</p> <p>3.3.1.2 t-test</p> <p>3.3.1.3 Z-test</p> <p>3.3.2 Non-parametric test</p> <p>3.3.2.1 χ^2-test</p>
<p>4 Interpret qualitative data analysis process in science education.</p> <p>5 Explain approaches of qualitative data analysis such as thematic approach and inductive approach.</p> <p>6 Demonstrate skills and steps required for qualitative data analysis.</p> <p>7 Describe the use of software in qualitative data analysis.</p>	<p>Unit IV: Qualitative Data Analysis(8hours)</p> <p>4.1 Concept of qualitative data analysis</p> <p>4.2 Approaches of qualitative data analysis:</p> <p>4.2.1 Thematic approach</p> <p>4.2.2 Inductive approach</p> <p>4.3 Steps in qualitative data analysis</p> <p>4.4 Introduction to qualitative data analysis software:</p> <p>4.4.1 Atlas. Ti</p> <p>4.4.2 NVivo</p>

<ul style="list-style-type: none"> • Outline the format of research proposal in science education research. • Describe the components of research proposal. • Prepare research proposal in science education. • Explain the meaning and application of abstract, background of the study, objectives and research questions, hypothesis and rationale of the study. • Explain the components of a research report/thesis. • Interpret the meaning and importance of research design, sampling strategies and philosophical background in research. • Elaborate the meaning of conceptual, empirical, theoretical and policy review. • Use APA format (6th and 7th edition) in report/thesis writing. • Critically review of at least one thesis /dissertation/article related to biology education and present in the class. 	<p>Unit V: Research Proposal and Report Writing (8 hrs.)</p> <p>5.1 Proposal Development</p> <p>5.1.1 Select appropriate title/problem</p> <p>5.1.2 Components of research proposal</p> <p>5.1.3 Development of a research proposal</p> <p>5.2 Report/Thesis Writing Techniques</p> <p>5.2.1 Format of research report</p> <p>5.2.2 Steps in research report writing</p> <p>5.2.3 Techniques of citation and referencing:</p> <p>5.2.3.1 APA style</p>
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Note: The figures in the parentheses indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

Units	Title	General Instructional Techniques	Specific Instructional Techniques
I	Paradigm and Philosophy of Science Education Research	Lecture cum discussion Inquiry method Home assignment Team teaching method	Buzz group and brain storming Group activities Collaborative method
II	Research Approaches and Methods	Inquiry method Presentation Discussion metho	Report writing Group activities Collaborative method
III	Application of Descriptive and Inferential Statistics	Lecture method Discussion method Inquiry method Presentation	Collaborative method Demonstration method Group activities Presentation Problem solving method
IV	Qualitative Data Analysis	Lecture method Discussion Inquiry method Presentation	Field work Focus group discussion Participant observation Role play as interviewee and interviewer/Role play Case study method
V	Research Proposal and Report Writing	Lecture cum discussion Inquiry method Presentation method	Field work Interview Focus group discussion Participant observation Seminar method

5. Evaluation

5.1 Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	Semester Examination	Total Marks
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Joshi, P. R. (2010). *Research Methodology (4th ed.)*. Kathmandu, Nepal: Buddha Academic Publishers and Distributors Pvt. Ltd. **(For units I and II)**

Lederman, N.G., & Abell, S.K. (Eds.). (2014). *Handbook of research on science education (Vol. II)*. New York, NY: Routledge. **(For unit I)**

Singer, S. R., Nielsen, N. R., & Schweingruber, H. A. (2013). Biology education research: Lessons and future directions. *CBE—Life Sciences Education*, 12(2), 129-132.
(For unit I)

References

Bordens, K. S., & Abbott, B. B. (2014). *Research design and methods: a process approach (9th ed.)*. New York, NY: McGraw-Hill Education.

Denzin, N. K., & Lincoln, Y. S. (1998). *Strategies of Qualitative inquiry*. Thousand Oaks: Sage Publication. **(For unit I)**

Gupta, S. C. (1990). *Fundamentals of Statistics (3rd edition)*. New Delhi: Vikash Publishing House Pvt. Ltd. **(For unit IV)**

Gupta, S. C. (1990). *Fundamentals of Statistics (3rd edition)*. New Delhi: Vikash Publishing House Pvt. Ltd. **(For unit IV)**

Judith S. L., & et. al. (2012). *Teaching and Learning of Nature of Science and Scientific Inquiry: Building Capacity through Systematic Research-Based Professional Development*. Spriner.

Kothari, C. R. (2013). *Quantitative techniques (New Format)*. New Delhi: Vikash Publishing House Pvt. Ltd. **(For unit II)**

Ladyman, J. (2002). *Understanding philosophy of science*. New York: Routledge, Taylor and Francis group.

McMahon, et. al. (2006). *Assessment in Science: Practical Experiences and Experiments*. USA : National Association in Research in Science Education, NSTA press.
(For unit II)

Physics Education**Phy. Ed. 535 T: Recent Trends in Physics Education**

Course No.: Phy. Ed. 535 T

Nature of course: Theoretical

Level: M.Ed. in Physics

Credit hours: 2

Semester: Third

Teaching hours: 32

Period per week: 2

1. Course Description

This course aims to familiarize students with the most recent developments in physics education. A professional physics teacher will emerge from the course with pedagogical expertise, a greater grasp of classroom instruction, and proficiency in physics teaching and learning. Furthermore, by integrating technological abilities to construct learning activities, it incorporates innovative concepts as well as current trends and developments in physics education.

2. General Objectives

The general objectives of this course are as follows:

- To provide the knowledge of developmental perspectives of physics education.
- To equip the students with the knowledge of the nature, values and scope of physics education.
- To acquaint the students with the physics curriculum as school and university levels.
- To demonstrate the knowledge of physics on the basis of contemporary pedagogical concerns.
- To develop knowledge and skills of planning, designing and managing physics education classrooms and co-curricular activities.
- To review innovative approaches in physics teaching and apply them in physics teaching and learning.
- To develop skills of evaluation in the school and the university level.
- To promote an awareness of the social, technological implication of physics.

3. Specific Objectives and Contents

Specific Objectives

- Comprehend the aims and objectives of school physics education.
- Elaborate the scope of physics education.
- List the importance of physics education in daily life.
- Review the development of physics education at the school and the tertiary level in Nepal, India, U.K., and U.S.A.
- Describe the changing faces of physics
- Discuss the physics education in a broader context.
- Deal with the issues of physics education.
- Explain the major paradigm shifts in physics education.
- Discuss the interdisciplinary dimensions of physics including correlation of physics with social sciences, chemistry, mathematics, and physics.
- Explain the relationship between the physics and society in-terms of environment, agriculture, and kitchen.
- Explain the importance of physics for sustainable development.
- Explore indigenous knowledge in physics in local context.
- Define and explain misconceptions.

Contents

Unit I: Developmental Perspectives of

Physics Education (6 pds.)

- 1.14 Aims and objectives of physics education
- 1.15 Scope of physics education
- 1.16 Importance of physics education
- 1.17 Development of physics education in Nepal, India, U.K., and U.S.A.
- 1.18 Changing faces of physics
- 1.19 Physics education in a broader context
- 1.20 Issues in Physics education
- 1.21 Paradigm and paradigm shift in physics education
- 1.22 Interdisciplinary dimension of Physics
- 1.23 Relation between the physics and the society (environment, agriculture and kitchen)
- 1.24 Physics for sustainable development
- 1.25 Indigenous knowledge in physics
- 1.26 Concepts, alternative concept and misconceptions in physics education

- Give a comparative account of concepts, alternative concepts and misconceptions in physics.
- Explore the students' misconceptions on the school, +2 and the university level in physics education.
- Introduce physics curriculum and its components.
- Explain innovative approaches in school physics curriculum of SAARC countries.
- Analyze critically the curriculum of secondary level and the university level physics curricula of Nepal.
- Illustrate the features of competency-based physics curriculum.
- Introduce the innovative physics education projects in-terms of their objectives, materials procedure, application and importance
 - PSSC Project
 - Nuffield Physics Project
 - Harvard Physics Project
 - U.K. project-Salter's advanced Physics.
- Elaborate the concept of STEAM literacy.
- Discuss the needs, features and design of STEAM in the school curriculum.

Unit II: Physics Education Curriculum (5 pds.)

4. Introduction
5. School and university level physics curricula in SAARC countries.
6. Analysis of secondary and university level physics curricula of Nepal
7. Competency based physics curriculum
8. Innovative physics projects
 - PSSC (Physical Science Study Committee Project)
 - Nuffield physics project
 - Harvard physics project
 - U.K. project- Salter's Advanced Physics.
9. STEAM Literacy
 - STEAM in school curriculum

Unit III: Planning of Physics Teaching

(6pds.)

- Design unit plan and lesson plan in the area of physics.
 - 3.1 Unit plan and lesson plan
 - 3.2 Advantages of planning in teaching

- Enlist the advantages of planning in teaching physics.
 - Design lesson plans in physics based on different approaches.
 - Discuss the criteria for the evaluation of lesson plan in Physics education.
- physics
- 3.3 Approaches to design the lesson plan
- 3.3.1 Herbert approach,
- 3.3.2 ABC approach,
- 3.3.3 7Es approach,
- 3.3.4 Constructivist approach
- 3.3.5 Project-based approach,
- 3.3.6 Problem solving approach
- 3.3.7 Investigative approach
- 3.3.8 Discovery approach
- 3.3.9 Laboratory approach
- 3.4 Criteria for the evaluation of lesson plan

Unit IV: Instructional module and e-learning

- Design an instructional module of a physics lesson.
 - Develop a programmed instruction in physics lesson.
 - Elaborate the importance of computer-assisted instruction in physics teaching and learning.
 - Discuss virtual environment for teaching and learning physics.
 - Develop teaching materials in physics using simulation mode: Physics-PhET simulations.
 - Apply the gaming mode in teaching physics.
 - Design digital learning lessons on physics in VLEs, and LMSs.
 - Organize video-conferencing in learning physics.
- (5pds.)
- 4.1 Instructional module
- 4.2 Programmed instruction
- 4.3 Computer Assisted Instruction (CAI)
- 4.4 Virtual environment for teaching and learning physics
- 4.5 Simulation in teaching physics.
- 4.6 Teaching physics in gaming mode
- 4.7 e-learning products: VLEs, LMSs, web based educational materials, video conferencing
- 4.8 Virtual field trips: concept, process, and application

- Develop learning experience through virtual field trip.

Unit V: Physics Laboratory (5 pds.)

- Explain the basic characteristics of a good physics laboratory. 5.1 Characteristics of a good physics laboratory
- Develop the designs of physics laboratory. 5.2 Planning and designing of a Physics laboratory
- Describe the techniques of physics laboratory management. 5.3 Physics laboratory management techniques
- Develop the physics laboratory skills. 5.4 Physics laboratory skills
- Point out the major causes of physics laboratory accidents and suggest their safety measures. 5.5 Physics laboratory accidents and safety measures
- Use the virtual physics laboratory for teaching and learning physics. 5.6 Virtual physics laboratory
- Illustrate the importance of the mobile physics laboratory. 5.7 Physics mobile laboratory
- Explain the construction of improvised physics laboratory materials and equipment. 5.8 Improvisation of physics laboratory materials and equipment

Unit VI: Evaluation (5 pds.)

- Define evaluation. 6.1 Introduction
- Explain the functions of evaluation. 6.2 Functions of evaluation
- Describe summative, formative and diagnostic evaluation. 6.3 Types of evaluation
- Prepare the specification grid based on the physics courses. 6.4 Specification grid
- Discuss attributes of good physics test items 6.5 Test items
- Explain the general steps of test construction. 6.6 Attributes of good physics test items
- Construct different test items in physics courses based on the revised 6.7 General steps of test construction
- 6.8 Construction of test items based on the revised Bloom's taxonomy
- 6.9 Standardization/ analysis of test
- 6.10 Letter grading system

Bloom's taxonomy.

- Construct standardized physics test items of different levels.
- Calculate discrimination index of test items.
- Describe the criteria of item analysis and use them for standardization of test items.
- Calculate the item difficulty and discrimination index of physics test items.
- Introduce the letter grading system in Nepal.

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Discussion
- Demonstration
- Presentation
- Inquiry
- Project work
- Cooperative and collaborative work
- Internet (web) surfing
- Group work

4.2 Specific Instructional Techniques

Units Specific Instructional Techniques

- | | |
|-----------|---|
| I | Classroom presentation on physics and physics education. |
| II | Curriculum review, and curriculum display of SAARC countries and reflect on it with comments. |

- III** Workshop cum discussion
- IV** Paper writing and presentation followed by discussion.
- V** Presentation by studying the handouts provided by the teacher followed by teachers' suggestions on physics laboratories. Student must visit physics laboratory and observation made by observation check list.
- VI** Presentation by studying the handouts provided by the teacher and makes the report include the suggestions.

5. Evaluation

5.1 Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.1 Internal Evaluation

25 Marks

Internal evaluation will be conducted by the course teacher based on following activities:

1.	Attendance and participation in learning activities	5 Marks
2.	First assignment (written assignment)	5 Marks
3.	Second assignment (report writing and presentation)	5 Marks
4.	Third assignment/ Term exam	10 Marks
Total		25 Marks

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination)

40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

3.	Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
4.	Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks

Total

40 Marks

5. Recommended Books and References

Agarwal, P. K. (2018). Retrieval practice & Bloom's taxonomy: Do students need fact knowledge before higher order learning? *Journal of Educational Psychology*.

(For Unit-VI)

Ahmad, S. (2007). *Teacher's hand Book of Science*, New Delhi: Anmol Publication Pvt. Ltd.

(For All Units)

Amos, S. &. Boohan, R. (2002). *Aspects of teaching secondary science: Perspective on practice*. New York & London: Routledge Taylor and Francis Group. **(For Unit I)**

Bhatnagar A. B. & Bhatnagar S. S. (2004). *Teaching of Science*, Meerut: Surya Publication.

(For All Units)

Blandin, B. (2010). Learning Physics: a competency-based curriculum using modelling techniques and PBL approach. *Grope Cesi* (pp. 1-9). Paris, France: Research Gate.

(For Unit -II)

Bork, D. (2019). A Framework for Teaching Conceptual Modeling and Metamodeling Based on Bloom's Revised Taxonomy of Educational Objectives. **(For Unit -VI)**

Chambers, D. (1993). Toward a competency-based curriculum. *Journal of Dental Education*, 57, 790-790.

(For Unit - II)

CLEAPSE. (2009). *Designing and Planning Laboratories*. Brunel Science Park: CLEAPSE (Consortium of Local Education Authorities for the Provision of Science Equipment).

(For Unit - V)

Dahal, B. K. (2021). *Teaching Physics: A New Trends and Issues to Real Life*. Bhaktapur, Nepal: Nisha Sharma.**(For All Units)**

Davar, M. (2012). *Teaching of Science*. New Delhi: PHI Learning Private Limited.

(For Unit- I, III, IV, & V)

Diberardinis, L. J., Baum, J. S., First, M. W., Gatwood, G. T., & Seth, A. K. (2013). *Guidelines for Laboratory design: Health, safety, and environmental considerations (4th ed.)* New York: Wiley Publications. **(For Unit - V)**

Fuller, K., & Malvern, D. (2010). *Challenge and Change: A History of the Nuffield A-level Physics project*. UK: centaur.reading.ac.uk. **(For Unit - II)**

Gil-Perez, D., & Carrascosa, J. (1990). What to Do About Science "Misconceptions". *Science Education* 74(5), 531-540. **(For Unit - I)**

Gupta, V. (2005). *Teaching and learning of science and technology*. New Delhi: Vikas Publishing House. **(For Unit-IV)**

Guskey, T. (2011). Five obstacles to grading reform. *Educational Leadership*, 69(3), 16.

(For Unit - VI)

- Hofstein, A., & Lunetta, V. (1982). The role of the laboratory in science teaching: Neglected aspects of research. *Review of educational research*, 52(2), 201-217. **(For Unit - V)**
- Howarth, S. & Scott, L. (2014). Success with STEM: Ideas for the classroom, STEM clubs and beyond. Oxon: Routledge. **(For Unit II)**
- Jafri, A. V. (1979). Design and development of physics curricula. *Physics Education, Volume 14 (2)*. **(For Unit- II)**
- Jeong, E. J. (2015). *Physics of the new millennium birth of the new paradigm*. USA: Research Gate. **(For Unit - I)**
- Juškaite, L. (2019). The Impact of the virtual laboratory on the physics learning process. *International Scientific Conference. Volume V, May 24th -25th* (pp. 159-168). Latvia: Research Gate. **(For Unit - V)**
- Karpudewan, M., Md.Zain, A. N., & Chandrasegaran, A. (2017). Overcoming students' misconceptions in Science. Singapore: Springer Singapore. **(For Unit - I)**
- Kumar, A. (1995). *Teaching of physical Sciences*, New Delhi: Anmol Publication Pvt. Ltd.
(For Unit -I, II, III & V)
- Lau, D. (2001). Analyzing the curriculum development process: Three models. *Pedagogy, culture and society*, 9(1), 29-44. **(For Unit - II)**
- Levine, M., Serio, N., Radaram, B., Chaudhuri, S., & Talbert, W. (2015). Addressing the STEM gender gap by designing and implementing an educational outreach chemistry camp for middle school girls. *Journal of Chemical Education*, 92(10), 1639-1644. **(For Unit II)**
- Lubiano, M. L. D., & Magpantay, M. S. (2021). Enhanced 7E Instructional Model towards Enriching Science Inquiry Skills. *International Journal of Research in Education and Science*, 7(3), 630-658. **(For Unit - III)**
- Mammi, H. K., & Ithnin, N. (2012). Competency based education (CBE) for IT security: towards bridging the gap. *INTERNATIONAL JOURNAL OF ENGINEERING PEDAGOGY (IJEP)*, 24-26. **(For Unit- II)**
- Mohan, R. (2007). *Innovative science teaching*. New Delhi: Prentice-Hall of India Pvt. Ltd. **(For all Units)**
- Pell, H. (2019). Harvard Project Physics: The role of history in science curriculum. *History of book :Physics History*. **(For Unit - II)**
- Pinner, R. (2014). What Is The Difference between an LMS and a VLE? *Learning Management Systems*. **(For Unit - IV)**
- Rajapaksha, A., & Hirsch, A. S. (2017). Competency based teaching of college physics: The philosophy and the practice. *Physical Review Physics Education Research* 13, 020130(12) , 1-12. **(For Unit - II)**
- Rao, A. (1993). *Teaching of Physics*. New Delhi: Anmol Publications.**(For all Units)**
- Ronen, I. (2017). *Misconceptions in science education, (1st ed.)*. UK: Cambridge Scholars Publishing. **(For Unit - I)**
- Sood, J. (2009). *Teaching of science*. New Delhi: Prentice Hall of India.
(For Unit -I, II, III & V)
- Sunal, D. W. (2019). *Physics teaching and learning challenging the paradigm*. USA: Information Age Publishing. **(For Unit - I)**
- University, H. (1964). *Harvard Project Physics: A new physical science course for schools (Newsletter No. 1)*. Cambridge, MA: Harvard University. **(For Unit - II)**

- Wei, B., & Ou, Y. (2018). A Comparative Analysis of Junior High School Science Curriculum Standards in Mainland China, Taiwan, Hong Kong, and Macao: Based on Revised Bloom's Taxonomy. *International Journal of Science and Mathematics Education*, 1-16. **(For Unit - VI)**
- Yakman, G. (2008). STEAM education: An overview of creating a model of integrative education. **(For Unit - I)**
- Zhao, X., Wang, J., Wang, M., Li, X., Gao, X., & Huang, C. (2020). A new model for assessing the impact of environmental psychology, e-learning, learning style and school design on the behavior of elementary students. *Kybernetes*. **(For Unit -IV)**

Phy. Ed. 535 P: Recent Trends in Physics Education

Course No.: Phy. Ed. 535 P

Nature of course: Practical

Level: M.Ed. in Physics

Credit Hours: 1

Semester: Third

Teaching hours: 48*

Periods per week: 3 pds/day/week/gr (P)**

1. Course Description

This course, which is practical in nature, is intended to help students gain the information and abilities needed to teach practical classes in physics education courses at the secondary, undergraduate, and graduate levels. It enhances the ability to create reports, presentations, and seminar papers as well as the ability to lead workshops, use innovative lesson planning techniques, e-learning, improvised materials, designing physics labs, and evaluate physics education at various levels.

2. General Objectives

The objectives of this course are to enable students to

- Analyze the issues of the different aspects of curriculum;
- Prepare research articles based on the recent pedagogical approaches in Physics education;
- Develop skills to students to design physics laboratory;
- Acquire skills and methods of safety rules in physics laboratory;
- Examine current secondary school physics practices;
- Prepare and present seminar papers by conducting seminars on the issues of physics education in Nepal and abroad;
- Develop the skills in PowerPoint presentations and skills of engaged and lived presentations.

3. Contents

Students Activities/Contents	Total hours (48)
<p>Unit I: Developmental Perspectives of Physics Education</p> <ul style="list-style-type: none"> • Prepare a discussion paper on the application of physics to daily life. • Prepare a report on school and university-based issues of teaching learning physics. • Critically review the assigned research papers. • Prepare the manuscript for journal articles within the areas of this unit. 	9

<ul style="list-style-type: none"> • Carry out a mini research study on indigenous knowledge in physics. • Make a report on paradigm shifts in physics from the different perspectives. 	
<p>Unit II: Physics Education Curriculum</p> <ul style="list-style-type: none"> • Prepare a report on the issues of the different aspects of curriculum (e.g., curriculum development process, aspects of curriculum) and organize an online discussion session. • Analyze the secondary level physics curriculum in terms of its structure, scope, objectives, organization and strategies. Also assess its strengths and weaknesses critically. • Develop a brief report on international initiatives for improvement of physics teaching and learning. • Conduct a webinar on STEAM education in Nepal: Needs, practices and prospects. 	6
<p>Unit III: Planning of Physics Teaching</p> <ul style="list-style-type: none"> • Prepare a unit plan for a topic of your choice in physics and present it in a web conference. • Prepare a lesson plan for teaching in physics based on the ABC approach, 7E approach, project-based approach and problem-solving approach. 	6
<p>Unit IV: Instructional module and e-learning</p> <ul style="list-style-type: none"> • Design an instructional module on topics related to physics. • Explore virtual field trips sites (based on the specific curriculum), organize a programme and discuss the importance of virtual field trips in Physics teaching/learning. • Design a programmed instruction module in physics. • Review research articles related to simulation in teaching physics. • Review research articles related to the effectiveness of gaming mode teaching strategy in the secondary level school physics. • Apply videoconferencing to learning physics. • Prepare a report on the CAI, CBT, PhET, VLEs and LMSs. • Design a lesson of physics using PhET. 	12

<ul style="list-style-type: none"> • Manage learning resources in LMS. 	
Unit V: Physics Laboratory <ul style="list-style-type: none"> • Design various models of physics laboratory. • Conduct different physics related activities using the virtual Lab. • Conduct a survey on student's awareness of physics laboratory-based activities, lab safety, accidents and first aid treatment. • Design improvised materials of the various kinds using locally available materials. 	9
Unit VI: Evaluation <ul style="list-style-type: none"> • Develop a model specification chart for physics • Design physics courses test item of different levels of cognitive domain and then administer and calculate the item difficulty and discrimination index. • Construct a set of test items of physics courses based on the revised Bloom's taxonomy. 	6

4. Specific Instructional Techniques

- Internet surfing
- Develop manuscript by collaboration and discussion
- Workshops: Presentation, participatory activities
- Books and article review
- Field visit
- Preparation of charts, models, presentations slides, and reports.

5. Evaluation

35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation**20 Marks**

Marks distribution for practical external evaluation will be as following.

1.	Experiment/project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessments of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing physics lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books and References

Shivendra, C. (2006). *Contemporary Physics teaching*. New Delhi: Anmol Publication Pvt. Ltd.

Agarwal, P. K. (2018). Retrieval practice & Bloom's taxonomy: Do students need fact knowledge before higher-order learning? *Journal of Educational Psychology*.

Phy. Ed. 536 T: Statistical Mechanics and Atmospheric Physics

Course No.	: Phy. Ed. 536 T	Nature of course:	Theoretical
Level	: M. Ed. in Physics	Credit hours:	2
Semester	: Third	Teaching hours:	32
		Period per week:	2

1. Course Description

This course aims to provide knowledge in the field of Statistical Mechanics and Atmospheric Physics. It has two sections – Statistical mechanics and Atmospheric physics. Section A deals with the statistical mechanics which covers classical statistical physics and postulates of quantum statistical mechanics. Section B includes the atmospheric physics which covers the atmosphere, the sun, atmospheric ozone, radiation measurements and thunderstorms and tornadoes.

2. General Objectives

The general objectives of the course are as follows:

- To provide the students with adequate theoretical knowledge of statistical mechanics and atmospheric physics.
- To familiarize with recent knowledge on statistical mechanics and atmospheric physics.
- To develop problem solving skills in statistical mechanics and atmospheric physics.
- To enable students exploring and analyzing atmospheric conditions.
- To enable the student to apply the skills to solve numerical problems on statistical mechanics and atmospheric physics.

3. Specific Objectives and Contents

Specific Objectives	Contents
	A) Statistical Mechanics (14pds)
<ul style="list-style-type: none"> • Explain microstate and macrostate with examples. • Define the term Phase space and Ensemble and write down its type. • Explain the division of phase space into cells. 	Units I: Classical Statistical Physics. (8pds) 1.1 Microstate and Macrostate 1.2 Phase-space and Ensemble 1.3 Division of phase space into cells 1.4 Constraints and accessible state 1.5 Thermodynamic probability and partition function

<ul style="list-style-type: none"> • Describe briefly the term constraints and accessible state. • Explain Thermodynamic Probability. • Describe postulates of statistical mechanics. • Derive the relation between the entropy and probability. • Explain Boltzmann's canonical distribution law and prove it. • Derive an expression of Maxwell's distribution law of velocities. • Write down the conditions of Maxwell-Boltzmann statistics and derive the number of particles in particular cell by using M-B statistics. • Explain partition function. • Define degree of freedom and explain law of equipartition of energy. • Derive entropy of an ideal gas and Gibbs paradox with its removal (Sackur-Tetrode equation). • Solve some related numerical problems. 	<p>1.6 Postulates of statistical mechanics</p> <p>1.7 Entropy and probability</p> <p>1.8 Boltzmann's canonical distribution law</p> <p>1.9 Maxwell's distribution law of Velocities</p> <p>1.10 Maxwell- Boltzmann statistics</p> <p>1.11 Law of equipartition of energy</p> <p>1.12 Entropy of an Ideal gas: Gibbs paradox and its removal (Sackur-Tetrode equation)</p>
<ul style="list-style-type: none"> • Write down the postulates of quantum statistical mechanics. • Discuss the concept of identical particles. • Write down the conditions of Bose-Einstein statistics and derive the number of particles in particular quantum states 	<p>Units II: Quantum Statistical Mechanics. (6pds)</p> <p>2.1 Postulate of quantum statistical Mechanics</p> <p>2.2 Identical particles</p> <p>2.3 Bose-Einstein statistics</p> <p>2.3 Fermi-Dirac statistics</p> <p>2.4 Fermi-Dirac statistics gas in metals</p> <p>2.5 Fermi level and Fermi energy</p>

<p>by using Bose-Einstein statistics.</p> <ul style="list-style-type: none"> • Write down the conditions of Fermi-Dirac statistics. Derive the number of particles in particular quantum states by using Fermi-Dirac statistics. • Explain F-D statistics gas in metals or electron gas. • Describe Fermi level and derive Fermi energy. • Solve some related numerical problems. 	
	B. Atmospheric Physics (18pds)
<ul style="list-style-type: none"> • Describe atmospheric compositions. • Explain layered structure of the atmosphere. • Discuss the modern views regarding the structure of atmosphere. • Explain temperature profile of various layers. • Describe atmospheric thermodynamics. • Discuss the stability of atmosphere. • Describe greenhouse effect. 	<p>Unit III: The atmosphere (3pds)</p> <p>3.1 Atmospheric compositions</p> <p>3.2 Structure of the atmosphere</p> <p>3.2.1 Modern views</p> <p>3.3 Temperature profile</p> <p>3.4 Atmospheric thermodynamics</p> <p>3.5 Atmospheric stability</p> <p>3.6 Green House effect</p>
<ul style="list-style-type: none"> • Describe Sun as a source of energy. • Define Solar constant and derive an expression for it and explain its determination. • Explain solar radiation outside the earth atmosphere. • Discuss the solar spectrum. • Solve simple numerical examples related to above topics. 	<p>Unit IV: The sun (2pds)</p> <p>4.1 Sun as a source of energy</p> <p>4.2 Solar constant and its determination</p> <p>4.3 Solar radiation outside the earth atmosphere</p> <p>4.4 Solar spectrum</p>
	Unit V: Atmospheric Ozone (4pds)

<ul style="list-style-type: none"> • Explain UV-radiation and its types. • Describe the process of formation of ozonosphere: Natural and anthropogenic processes. • Provide the details of tropospheric and stratospheric ozone layers. • Differentiate between good and bad ozone and explain how they can be measured. • Explain the meaning of ozone depletion. • Explain process of protection of ozone layers. • Discuss the measurement of UV-B radiation on the earth's surface. • Explain the total ozone concentration and its measurement. • Solve some related numerical problems. 	<p>5.1 UV radiation and its types</p> <p>5.2 Formation of ozonosphere</p> <p>5.3 Tropospheric and stratospheric ozone layers</p> <p>5.4 Ozone depletion</p> <p>5.5 Protection of ozone layer</p> <p>5.6 Measurement of UV-B radiation on the earth's surface</p> <p>5.7 Total ozone concentration and its measurement</p>
<ul style="list-style-type: none"> • Explain radiation detectors like Thermopile and Bolometer with their necessary theory and working. • Describe theory, construction and applications of pyrheliometers like Angstrom's pyrheliometer, Water flow pyrheliometer and Water stir pyrheliometer. • Discuss theory, construction and applications of pyranometers. • Explain the theory, construction and working of UV and IR meters. 	<p>Unit VI: Radiation Measurements (5pds)</p> <p>6.1 Radiation detectors</p> <p>6.1.1 Thermopile</p> <p>6.1.2 Bolometer</p> <p>6.1.3 Pyrheliometers</p> <p>6.1.4 Angstrom's pyrheliometer</p> <p>6.1.5 Water flow pyrheliometer</p> <p>6.1.6 Water stir pyrheliometer</p> <p>6.1.7 Pyranometers</p> <p>6.1.8 UV meter</p> <p>6.1.9 IR meter</p>
<ul style="list-style-type: none"> • Explain Thunderstorms and its types. • Describe the stages of development of thunderstorm. • Discuss the hazards of thunderstorms. • Explain Tornadoes and stages of 	<p>Unit VII: Thunderstorms and Tornadoes (4pds)</p> <p>7.1 Introduction of Thunderstorms</p> <p>7.2 Types of Thunderstorms</p> <p>7.2.1 Stages of development</p>

development of tornadoes. <ul style="list-style-type: none"> • Discuss the hazards of tornadoes. • Describe the introduction for lightning and thunder. • Categorize and explain the lightning from cumulonimbus cloud. • Explain artificial lightening • Discuss the effects of lightening. 	7.2.2 Hazards 7.3 Tornadoes 7.3.1 Stages of development 7.3.2 Hazards 7.4 Lightning and thunder 7.4.1 Categorization of lightening from cumulonimbus cloud 7.4.2 Artificial lightening 7.4.3 Effects of lightening
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Note: *The figures in the parenthesis indicate the appropriate teaching hours for the respective units.*

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Lecture
- Demonstration
- Discussion
- Inquiry
- Project work
- Collaborative work

4.2. Specific Instructional Techniques/Activities

Unit	Activities and Instructional techniques
I	Power point presentation, Demonstration, Internet access
II	Projector method, Power point presentation
III	Assignment for preparing charts, models and problem solving
IV	Power point presentation, Demonstration, Book review
V	Power point presentation, Book review and field trip
VI	Project Method, Power point presentation, Field trip reporting
VII	Assignment for preparing charts, models and problem solving

- The teachers may decide the project work related to the course work.

5. Evaluation

5.2 Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.2 Internal Evaluation

25 Marks

Internal evaluation will be conducted by the course teacher based on following activities:

1.	Attendance and participation in learning activities	5 Marks
2.	First assignment (written assignment)	5 Marks
3.	Second assignment (report writing and presentation)	5 Marks
4.	Third assignment/ Term exam	10 Marks
Total		25 Marks

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination)

40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

5.	Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
6.	Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks
Total		40 Marks

6. Recommended Books and References

Recommended Books

- Frederick, K., & T., E. (2019). *The atmosphere an introduction to meteorology*. New York: Pearson Education, Inc. **(For unit- IV & VII)**
- Goody, R. M., & Walker, J. C. G. (1972). *Atmospheres (Foundations of earth science series)*. India: Prentice Hall. **(For Unit-III &IV)**
- Goody, R. M., & Yung, Y. L. (1995). *Atmospheric Radiation: Theoretical Basis* (Second ed.). USA: Oxford University Press. **(For Unit- VI)**
- Huang, K. (2008). *Statistical Mechanics* (Second ed.). New York: John Wiley & Sons, Inc. **(For Unit-I &II)**
- Ilyas, M. (1991). *Ozone Depletion: Implications for the Tropics*. Penang: University of Science Malaysia. **(For unit- V)**
- Lal, D. S. (2014). *Physical Geography*. Allahabad: Shrada Pustak Bhawan. **(For unit- III &V)**
- Uman, M. A. (2001). *The lightning discharge*. Florida.: Academic Press, Inc. **(For Unit-VII)**

References

- Khandelwal, D. P., & Pande, A. K. (2010). *Thermodynamics and Statistical physics*. Bombay: Himalayan Publishing House.
- Patharia, R. K. (2001). (Second ed.). New Delhi: Butterworth-Heinemann publication.
- Murugesan, R., & Kiruthiga, S. (2017). *Modern physics*. New Delhi: S. Chand Publishing.
- Duffie, J. A., & Beckman, W. A. (2013). *Solar engineering of thermal processes*. New York: Wiley.
- Liou, K.-N. (2002). *An introduction to atmospheric radiation* (Vol. 84). New York: Academic Press.

Phy. Ed. 536 P: Statistical Mechanics and Atmospheric Physics

Course No. : Phy. Ed. 536 P Nature of course: Practical

Level : M. Ed. in Physics Credit hours: 1

Semester : Third Teaching hours: 48*

Period per week: 3pds/day/week/group**(P)

1. Course Description

This course aims to provide practical knowledge in the field of statistical mechanics and atmospheric physics. The practical activities include lab-based experiments related to statistical mechanics and atmospheric physics. Students are expected to be competent in applying the knowledge and skills learnt to real teaching and professional carriers.

2. General Objectives

The general objectives of the course are as follows:

- To provide the students with adequate practical knowledge of statistical mechanics and atmospheric physics.
- To develop problem solving skills in statistical mechanics and atmospheric physics.
- To develop skills to perform the experimental techniques of operation.
- To adopt safety/precautions and techniques of statistics.

3. Specific Objectives and Contents

Practical	Contents	Teaching hours(48hrs)
A. Statistical Mechanics		
1. To verify the laws of probability distribution throwing one coin, two coins and ten coins.	Laws of Probability	6
2. To show that derivation of probability from theoretical value decrease with increase in number of events.		
3. To study the statistical distribution from the given data and to find most	Statistical distribution	3

probable, average and rms values.		
4. To study the random decay of nuclear disintegration and determine decay constant by using dices.	Use of Statistical techniques	3
B. Atmospheric Physics		
5. Study the Greenhouse effect in your local area and make a report on it	Green House Effect	6
6. To determine the solar constant.	Solar Constant	3
7. Study the recent research articles related with Ozone depletion and its protection and write a report on it	Ozone Depletion	6
8. Study the applications of radiation detectors and write a report on it.	Radiation detectors <ul style="list-style-type: none"> • Thermopile • Bolometer • Pyrheliometers • Pyranometers • UV meter • IR meter 	15
9. Study the related articles about the effects of lightning in society and write a report on it	Lightning	6

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Experiment Method
- Demonstration Method
- Inquiry
- Project work
- Collaborative work

4.2. Specific Instructional Techniques/Activities

- Experimental method
- Project work, problem solving method
- Collaborative method and power point presentation.
- The teachers may decide the project work related to the course content.

5. Evaluation

35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.2 Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
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2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books and References**Recommended Books**

Arora, C. L. (2012). *B.Sc. Practical*. New Delhi: S. Chand and Co.

Halliday, Resnick & Krane (2009). *Laboratory Physics*. Singapore: John Wiley & Sons.

Mittal R.S., & Singal S. (1995). *Laboratory manual in Physics*. New Delhi: Arya Book Depot.

Sharma, Singh & Prasad (2008). *Degree level Practical Physics*. Patana: Bharati Bhawan Pub.

Harman, S. & Hemne, P.S. (2011). *B.Sc. Practical Physics*. New Delhi: S. Chand & Co. Ltd.

References

Duffie, J. A., & Beckman, W. A. (2013). *Solar engineering of thermal processes*. New York: Wiley.

Khandelwal, D. P., & Pande, A. K. (2010). *Thermodynamics and Statistical physics*. Bombay: Himalayan Publishing House.

Liou, K.-N. (2002). *An introduction to atmospheric radiation* (Vol. 84). New York: Academic Press.

Murugesan, R., & Kiruthiga, S. (2017). *Modern physics*. New Delhi: S. Chand Publishing.

Patharia, R. K. (2001). (Second ed.). New Delhi: Butterworth-Heinemann publication.

Phy. Ed. 538 : Astrophysics and Seismology

Course No. : Phy. Ed .538

Nature of course: Theoretical

Level : M. Ed. in Physics

Credit hours : 3

Semester : Third

Teaching hour: 48

Period per week:3

1. Course Description

This course aims to provide basic concept on Astrophysics and Seismology. It is divided into two sections. Section A includes Astrophysics which covers general astronomy, stellar atmospheres, structure and evolution and observational and computational astronomy. Section B includes the topic seismology which covers history elastic theory, amplitudes of space motion due to seismic waves by a spherically stratified earth model, the earthquake and statistics, seismicity of Himalayas and earthquake hazards.

2. General Objectives

The general objectives of this course are to enable students

- To acquire the student with adequate knowledge on astrophysics and seismology.
- To familiarize with modern concept on astrophysics and seismology.
- To enable the student to apply the skills to solve numerical problems on astrophysics and seismology.
- To develop the knowledge on the history and elastic theory, earthquake and statistics, seismograph, seismic hazard and risk with special reference to Nepal as well as heavenly bodies.

3. Specific Objectives and Contents

Specific Objectives	Contents
	A: Astrophysics (27pds)
<ul style="list-style-type: none"> • Discuss History and development astronomy and astrophysics on the basis of Chinese astronomy, Indian astronomy, Islamic and Maso American astronomy. • Define and explain intensity, flux density and luminosity. • Explain equatorial and galactic co-ordinate system. 	Unit I: General astronomy (7pds) 1.1 History and development of astronomy and astrophysics 1.2 Intensity, flux density and luminosity 1.3 System of co-ordinates 1.3.1 Equatorial and galactic 1.4 Astronomical time system 1.5 Stellar parallaxes

<ul style="list-style-type: none"> • Define stellar parallax and proper motion of the star. • Explain how distance of star is estimated. • Define and explain apparent and absolute magnitude. • Derive relation between distance and magnitude. • Explain extinction and optical thickness and derive relation between them. • Explain color index, UVB photometry and color excess. • Solve some related numerical problems. 	<p>1.6 Proper motion</p> <p>1.7 Distance estimation</p> <p>1.8 Stellar magnitudes</p> <p>1.8.1 Apparent and absolute</p> <p>1.8.2 Distance magnitude relation</p> <p>1.9 Extinction and optical thickness</p> <p>1.10 Color index</p> <p>1.11 UVB photometry</p> <p>1.12 Color excess</p>
<ul style="list-style-type: none"> • Derive equation of hydrostatic equilibrium. • Define mass continuity equation. • Derive central pressure of star by using hydrostatic equilibrium and mass continuity equation. • Define local thermodynamic equilibrium and explains important principles that follow Local thermos dynamic equilibrium. • Explain liner stellar model and derive the temperature and pressure distribution in the star. • Derive an equation the pressure exerted by non-degenerate ionized gases in the interior of star. • Show that radiation pressure is equal to the gas pressure. • Write the expression of radiation pressure in terms of temperature. (No derivation is required). • Write the equations of pressure exerted by the non-relativistic electron degenerate gas. (No 	<p>Unit II: Stellar Atmospheres, Structures and evolution (13 pds)</p> <p>2.1 Hydrostatic equilibrium</p> <p>2.2 Mass continuity equation.</p> <p>2.3 Central pressure of star</p> <p>2.4 local thermodynamic equilibrium</p> <p>2.5 Linear stellar model</p> <p>2.6 Non-degenerate gas pressure</p> <p>2.7 Radiation pressure</p> <p>2.8 Degenerate gas pressure</p> <p>2.9 Polytrope</p> <p>2.10 Modeling degenerate star</p> <p>2.11 Local thermodynamic equation</p> <p>2.12 Post main sequence evolution</p> <p>2.13 Stellar Spectra</p> <p>2.13.1 Harvard classification</p> <p>2.13.2 E. Hertzsprung and H. Norris Russel (H.R.) diagram.</p> <p>2.13.3 Yerkes spectral classification.</p> <p>2.14 Jeans instability and limit</p> <p>2.15 Steller energy sources mechanism</p>

derivation is required).

- Write the equations of pressure exerted by the relativistic electron degenerate gas in the interior of the star. (No derivation is required).
- Discuss the nature of Lane-Emden equation and its solution.
- Derive mass, density, pressure and temperature profile of degenerate star cores (red giant, white dwarf, etc.) using polytropic index $n = 1.5$.
- Derive mass density pressure and temperature profile of degenerate neutron star using polytropic index $n = 1$.
- Explain the term neutron drip.
- Explain local thermodynamic equation.
- Explain Giant branch, Helium flash, horizontal branch, asymptotic giant branch when mass of star is less than $8 M_{\text{sun}}$ in the main sequence.
- Explain supernovae Type I and types II when mass of star is greater than $8 M_{\text{sun}}$ in the main sequence.
- Explain Harvard classification, H.R. diagram and Yerkes spectral classification.
- Discuss Jeans instability and derive expression for Jeans limit.
- Explain Stellar energy production mechanism as
 - a) Proton-Proton chain
 - b) CNO cycle
 - c) Triple alpha reaction
 - d) Alpha reactions
 - e) Carbon burning
 - f) Oxygen burning

2.16 Interstellar gas, dust and molecules

<p>g) Silicon burning</p> <ul style="list-style-type: none"> • Explain interstellar dust, gas and molecules. • Solve some related numerical problems. 	
<ul style="list-style-type: none"> • Explain optical, Optical, infrared, radio, microwave, X-ray and Gamma ray Astronomy. • Discuss Multi wavelength study. • Process the image and analyze their spectrum. • Extract the original by SIMBAD, NED and Sky view. • Analyze the image and process the data using Aladin software. • Observe the celestial objects visiting nearby astronomical center through telescope and prepare report under the instruction of concern teacher. 	<p>Unit III: Observational and Computational Astronomy (7pds)</p> <p>3.1 Optical, infrared, radio, microwave, X-ray and Gamma ray Astronomy</p> <p>3.2 Multi wavelength study</p> <p>3.3 Image processing and spectrum analysis</p> <p>3.4 Original data extraction: SIMBAD, NED and Sky view</p> <p>3.5 Data processing and image reduction: ALADIN software</p> <p>3.6 Project work</p>
	<p>B. Seismology (21 pds)</p>
<ul style="list-style-type: none"> • Discuss the history of seismology. • Explain stress tensor, principal axes of stress and strain tensor. • Derive linear stress strain relationship. • Derive a relation energy in a perfect elastic body. • Derive and explain energy in seismic wave. • Solve some related numerical problems. 	<p>Unit IV: History and Elastic Theory (4 pds)</p> <p>4.1 Brief history of seismology</p> <p>4.2 Stress tensor</p> <p>4.3 Principal axes of stress</p> <p>4.4 The strain tensor</p> <p>4.5 The linear stress strain relationship</p> <p>4.6 Energy in a perfect elastic body</p> <p>4.7 Energy in seismic wave</p>
<ul style="list-style-type: none"> • Introduce the wave equation. • Established the theory of momentum equation. • Derive and explain the seismic wave equation. • Discuss the characteristics of plane waves and its significance. • Give the theory of polarization of P and S wave. 	<p>Unit V: Seismic Wave Equation (5pds)</p> <p>5.1 Introduction</p> <p>5.2 Momentum equation</p> <p>5.3 The seismic wave equation.</p> <p>5.4 Planes waves</p> <p>5.5 Polarization of P and S wave</p>

<ul style="list-style-type: none"> • Solve some related numerical problems. 	
<ul style="list-style-type: none"> • Explain elastic rebound model: Causes of earthquake. • Derive and explain strain energy before an earthquake. • Explain dip, rake and discuss earthquake faults. • Explain double couple model with moment tensor. • Explain modern Seismograph. • Explain near field term, far field term. • Explain rupture, directivity effects. • Write down formula to find earthquake magnitude and discuss it. • Write down Gutenberg and Richter formula to establish relation between magnitude energy and frequency and explain. • Define and explain fore shocks and aftershocks. • Explain earthquake prediction with precursors. • Solve some related numerical problems. 	<p>Unit VI: The earthquake and statistics (7pds)</p> <p>6.1 Elastic rebound model: Causes of earthquakes</p> <p>6.2 Earthquake faults</p> <p>6.3 Double couple model</p> <p>6.4 Modern seismograph</p> <p>6.5 Radiation pattern</p> <p>6.6 Far field pulse shapes</p> <p>6.7 Directivity</p> <p>6.8 Energy released in earthquake</p> <p>6.9 Earthquake magnitude</p> <p>6.10 Magnitude, energy and frequency</p> <p>6.11 Fore shocks and aftershocks</p> <p>6.12 Earthquake prediction</p>
<ul style="list-style-type: none"> • Explain Himalayan and plate tectonic with disappearance of Tethys Sea. • Define Seismicity and explain Seismicity of Nepal Himalaya regarding faulting and thrusting. • Explain Seismic network in Nepal with map. • Discuss major earthquake in Nepal. • Explain the term earthquake hazards and risk. • Discuss the mitigation of earthquake risk. • Discuss seismic zoning and microzoning. • Explain design of earthquake- resisting structure. • Solve some related numerical problems. 	<p>Unit VII: Seismicity of Himalayas and Earthquake Hazard (5 pds)</p> <p>7.1 Himalayan tectonics and plate tectonic view</p> <p>7.2 Seismicity of Nepal Himalaya</p> <p>7.3 Seismic network in Nepal</p> <p>7.4 Major earthquake in Nepal</p> <p>7.5 Earthquake hazards and risk</p> <p>7.6 Mitigation of earthquake risk</p> <p>7.7 Seismic zoning and microzoning</p> <p>7.8 Design of earthquake- resisting structure</p>

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

S.N.	Units	Title	General Instructional techniques	Specific Instructional techniques
1.	I	General astronomy	Lecture, Discussion	Web Surfing, Book Review, Report Preparation
2.	II	Stellar Atmospheres, Structures and evolution	Observation, Discussion	Web surfing, Audio visual methods
3.	III	Observational and Computational Astronomy	Observation, Graph plotting and data analysis	Preparation of report, Project works
4.	IV	History and Elastic Theory	Lecture, Book Review	Induction, Deduction
5.	V	Seismic Wave Equation	Lecture, Discussion	Web Surfing, Book Review, Report Presentation
6.	VI	The earthquake and statistics	Lecture	Data Analysis, Report Preparation, ICTs Based Methods
7.	VII	Seismicity of Himalayas and Earthquake Hazard (Visit a nearby seismic center in Nepal and prepare a report)	Report Preparation, Discussion, Project work	Collaborative Works fields trip

5. Evaluation

5.1. Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	40 Marks	60 Marks	100 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.2.1 Internal Evaluation

40 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance	5 Marks
2. Participation in learning activities	5 Marks
3. First assignment (written assignment)	10 Marks
4. Second assignment (Project work/ report writing and presentation)	10 Marks
5. Third assignment/ Term exam	10 Marks
Total	40 Marks

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2 External Evaluation (Final Examination)

60 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

1. Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
2. Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks
3. Subjective long questions (2 questions with 1 'OR 'questions x 10 marks)	20 Marks
Total	60 arks

6. Recommended books and References

Recommended Books:

- Bhatia, V. B. (2001). *Textbook of astronomy and astrophysics with elements of cosmology*. New Delhi: Narosa Publishing House. **(Unit I, II)**
- Birney, D. S., Gonzalez, G., & Oesper, D. (2006). *Observational astronomy*. London: Cambridge University Press. **(Unit III)**
- Bullen, K. E., Bullen, K. E., Bullen, K. A., & Bolt, B. A. (1985). *An introduction to the theory of seismology*. London: Cambridge university press. **(Unit IV, V, VI)**
- Karttunen, H., Kröger, P., Oja, H., Poutanen, M., & Donner, K. J. (2007). *Fundamental astronomy*. New York: Springer Berlin Heidelberg. **(Unit I, II)**
- Marov, M. Y. (2016). *Fundamentals of Modern Astrophysics*. New York: Springer.
- Owociki, S. (2021). *Fundamentals of Astrophysics*. London: Cambridge University Press. **(Unit I, II)**
- Shearer, P. M. (2019). *Introduction to seismology*. London: Cambridge university press. **(Unit IV, V, VI, VII)**
- Stacy, P. (2004). *Schaum's outlines astronomy*. USA: MC Graw Hill. **(Unit II, III)**
- Sutton, E. C. (2011). *Observational astronomy: techniques and instrumentation*. London: Cambridge University Press. **(Unit III)**
- Wenger, M., Oberto, A., Lejal, J.-P., Jaehn, S., Baranne, B., Dellicour, O., & Deprez, J. (2005). *A New SIMBAD Software and System: SIMBAD 4*. Paper presented at the Astronomical Data Analysis Software and Systems XIV. **(Unit III)**

References:

- Galetzka, J., Melgar, D., Genrich, J. F., Geng, J., Owen, S., Lindsey, E. O., . . . Adhikari, L. B. (2015). Slip pulse and resonance of the Kathmandu basin during the 2015 Gorkha earthquake, Nepal. *Science*, 349(6252), 1091-1095.
- Pujol, J. (2003). *Elastic wave propagation and generation in seismology* (Vol. 227). London: Cambridge University Press Cambridge.
- Richer, C.F. (1995). *Elementary Seismology*. New Delhi: Narosa Publishing House.
- S. N. (2012). Convergence rate across the Nepal Himalaya and interseismic coupling on the Main Himalayan Thrust: Implications for seismic hazard. *Journal of Geophysical Research: Solid Earth*, 117(B4).
- Stein, S., & Wysession, M. (2009). *An introduction to seismology, earthquakes, and earth structure*. USA: John Wiley & Sons.

Phy. Ed. 539: Advanced Research Methodology in Science Education-Physics

Course No: Phy. Ed. 539

Nature of the course: Theoretical

Level: M.Ed. in Physics

Credit hours: 3

Semester: Third

Teaching hours: 48

Periods per week: 3

1. Course Description

Advanced Research Methodology in Science Education (Physics) is a course that provides thorough understanding of the pursuit of research in qualitative and quantitative approaches in science education. With a focus on science education research, it aims to improve students' statistical analysis skills through the use of descriptive and inferential statistics to analyze both the quantitative and qualitative data. It also guides to write research proposal and framing research report in science education.

2. General Objectives

General objectives of this course are as follows:

- To provide students with an opportunity to understand inquiry-based research with its application. interpret the nature and fundamentals of research in science education.
- To carry out academic research as a cohesive and coherent piece of work.
- To provide the students with hands on experience on statistical tools in data analysis.
- To enable the students to prepare research report using appropriate methods and approaches.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the meaning of paradigms and paradigm shift in science education research. • Illustrate the scientific revolution on the basis of Kuhn's revolution theory. • Discuss the epistemology, ontology and axiology as philosophical bases for educational research. • Critically analyze the positivist, post-positivist, social constructivist and pragmatist research world views in science education research. • Introduce scientific method of research and its types. 	<p>Unit I. Paradigm and Philosophy of Science Education Research (6 hrs.)</p> <p>1.10 Paradigms in science education research</p> <p>1.11 Scientific revolution and paradigm shift</p> <p>1.12 Kuhn's scientific revolution theory</p> <p>1.13 Philosophical bases for research</p> <p>1.13.1 Epistemology, ontology, axiology, methodology</p> <p>1.14 Philosophical world views: positivist and post-positivist, social constructivist and pragmatist</p> <p>1.15 Scientific research: steps and importance</p>

<ul style="list-style-type: none"> • Describe the steps of scientific research and its importance. • Elaborate the meaning of inductionism and deductionism in terms of science education research. • Appraise critically the oriental and western philosophy of science and research traditions. • Discuss the brief history of physics education research (PER). • Critically analyze the methods and research trends in physics education research. 	<p>1.15.1 Types of scientific research methods</p> <p>1.16 Inductionism and deductionism</p> <p>1.17 Oriental and western philosophy in science research traditions</p> <p>1.18 Physics Education Research (PER)</p> <p>1.18.1 History, methods and research trend</p>
<ul style="list-style-type: none"> • Understand the meaning of research design, research approach, research method and research methodology. • Apply various quantitative research designs and approaches in science education. • Infer experimental research and apply in science education research. • Elaborate and use of comparative and co-relational research in science education research. • Detailed and employ survey research in research on science education. • Elaborate the meaning of qualitative research design. • Comprehend the process of case study research methodology in science education. • Examine the methodology of ethnographic research in the field of science education. • Discuss the process of phenomenological research. • Discuss narrative approach in science education research. • Explain Hermeneutics approach in educational research. • Understand the methodology of 	<p>Unit II: Research Approaches and Methods</p> <p>(10hrs.)</p> <p>2.1 Concept of research design, research approach, research method, and methodology in research</p> <p>2.6 Quantitative research in Science Education</p> <p>2.6.1 Experimental research</p> <p>2.6.2 Comparative and correlational research</p> <p>2.6.3 Survey</p> <p>2.7 Qualitative research in Science Education</p> <p>2.7.1 Case study</p> <p>2.7.2 Ethnography</p> <p>2.7.3 Phenomenology</p> <p>2.7.4 Narrative</p> <p>2.7.5 Hermeneutics</p> <p>2.8 Participatory action research in science education</p> <p>2.9 Mixed method and multi-method research in science education</p>

<p>participatory action research in science education.</p> <ul style="list-style-type: none"> • Describe various types of mixed method research design. • Explain use of mixed method and multi-method research designs in science education research. 	
<ul style="list-style-type: none"> • Use appropriate statistical tools in research for data management in science education. • Explain general principles of data analysis. • Discuss data management and processing such as data checking, editing, coding, recoding and data entry. • Interpret different approaches of data analysis in quantitative research. • Use SPSS for calculating and visualizing the descriptive data. • Interpret the mean, median and standard deviation in the science education research. • Use SPSS for calculating and visualizing the inferential data. • Apply parametric and non-parametric tests in scientific research. 	<p>Unit III: Application of Descriptive and Inferential Statistics (16 hrs.)</p> <p>3.1 Data management and Descriptive statistics</p> <p>3.1.1 General principles of data analysis</p> <p>3.1.2 Data management and processing: Data checking, editing, coding, recoding, data entry</p> <p>3.1.3 Data entry in SPSS programme</p> <p>3.1.4 Displaying data in frequency and cross tables, and figures using SPSS</p> <p>3.2 An overview of descriptive statistics</p> <p>3.2.1 Measures of central tendency</p> <p>3.2.2 Measures of dispersion</p> <p>3.2.3 Measures of correlation</p> <p>3.2.4 Simple regression</p> <p>3.3 Inferential Data Analysis</p> <p>3.3.1 Parametric tests</p> <p>3.3.1.1 Hypothesis testing</p> <p>3.3.1.2 t-test</p> <p>3.3.1.3 Z-test</p> <p>3.3.2 Non-parametric test</p> <p>3.3.2.1 χ^2-test</p>
<ul style="list-style-type: none"> • Interpret qualitative data analysis process in science education. • Explain approaches of qualitative data analysis such as thematic approach and inductive approach. • Demonstrate skills and steps required for qualitative data analysis. • Describe the use of software in qualitative data analysis. 	<p>Unit IV: Qualitative Data Analysis (8 hrs.)</p> <p>4.1 Concept of qualitative data analysis</p> <p>4.2 Approaches of qualitative data analysis</p> <p>4.2.1 Thematic approach</p> <p>4.2.2 Inductive approach</p> <p>4.3 Steps in qualitative data analysis</p> <p>4.4 Introduction to qualitative data analysis software:</p> <p>4.4.1 Atlas. Ti</p> <p>4.4.2 NVivo</p>
<ul style="list-style-type: none"> • Outline the format of research proposal 	<p>Unit V: Research Proposal and Report</p>

<p>in science education research.</p> <ul style="list-style-type: none"> • Describe the components of research proposal. • Prepare research proposal in science education. • Explain the meaning and application of abstract, background of the study, objectives and research questions, hypothesis and rationale of the study. • Explain the components of a research report/thesis. • Interpret the meaning and importance of research design, sampling strategies and philosophical background in research. • Elaborate the meaning of conceptual, empirical, theoretical and policy review. • Use APA format (6th and 7th edition) in report/thesis writing. • Critically review of at least one thesis /dissertation/article related to physics education and present in the class. 	<p style="text-align: center;">Writing (8 hrs.)</p> <p>5.3 Proposal Development</p> <p>5.3.1 Select appropriate title/problem</p> <p>5.3.2 Components of research proposal</p> <p>5.3.3 Development of a research proposal</p> <p>5.4 Report/Thesis Writing Techniques</p> <p>5.4.1 Format of research report</p> <p>5.4.2 Steps in research report writing</p> <p>5.4.3 Techniques of citation and referencing:</p> <p>5.4.3.1 APA style</p>
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Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

Units	Title	General Instructional Techniques	Specific Instructional Techniques
I	Paradigm and Philosophy of Science Education Research	Lecture cum discussion Inquiry method Home assignment Team teaching method	Buzz group and brain storming Group activities Collaborative method
II	Research Approaches and Methods	Inquiry method Presentation Discussion metho	Report writing Group activities Collaborative method
III	Application of Descriptive and Inferential Statistics	Lecture method Discussion method Inquiry method Presentation	Collaborative method Demonstration method Group activities Presentation Problem solving method

IV	Qualitative Data Analysis	Lecture method Discussion Inquiry method Presentation	Field work Focus group discussion Participant observation Role play as interviewee and interviewer/Role play Case study method
V	Research Proposal and Report Writing	Lecture cum discussion Inquiry method Presentation method	Field work Interview Focus group discussion Participant observation Seminar method

5. Evaluation

5.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	40 Marks	60 Marks	100 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.1 Internal Evaluation

40 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance	5 Marks
2. Participation in learning activities	5 Marks
3. First assignment (written assignment)	10 Marks
4. Second assignment (Project work/ report writing and presentation)	10 Marks
5. Third assignment/ Term exam	10 Marks
Total	40 Marks

Note: *First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.*

5.1.2 External Evaluation (Final Examination)

60 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks
Subjective long questions (2 questions with 1 'OR 'questions x 10 marks)	20 Marks
Total	60 arks

6. Recommended Books and References

Recommended Books

Aalst, J. V. (2000). An introduction to physics education research. *Canadian Journal of Physics*, 78(1), 57-71. **(For unit I)**

American Psychological Association. (2010). *Publication Manual of American Psychological Association (6th ed.)*. Washington, DC: American Psychological Association. **(For unit IV)**

Best, W. & Kahn V. (2000). *Research in Education (7th ed.)*. New Delhi: Prentice Hall of India Pvt. Ltd. **(For unit III)**

Fraser, B. J., Tobin, K. G., & McRobbie, C. J. (2012). *Second international handbook of science education* (Vol. 1). New York, USA: Springer. **(For units I and II)**

Guba, E. & Lincoln, S. Y. (1998). *The landscape of qualitative research: Theories and Issues*. Thousand Oaks: Sage Publication. **(For unit I)**

Joshi, P. R. (2010). *Research Methodology (4th ed.)*. Kathmandu, Nepal: Buddha Academic Publishers and Distributors Pvt. Ltd. **(For units I and II)**

Lederman, N.G., & Abell, S.K. (Eds.). (2014). *Handbook of research on science education (Vol. II)*. New York, NY: Routledge. **(For unit I)**

References

Bordens, K. S., & Abbott, B. B. (2014). *Research design and methods: a process approach (9th ed.)*. New York, NY: McGraw-Hill Education.

Denzin, N. K., & Lincoln, Y. S. (1998). *Strategies of Qualitative inquiry*. Thousand Oaks: Sage Publication. **(For unit I)**

Gupta, S. C. (1990). *Fundamentals of Statistics (3rd edition)*. New Delhi: Vikash Publishing House Pvt. Ltd. **(For unit IV)**

Gupta, S. C. (1990). *Fundamentals of Statistics (3rd edition)*. New Delhi: Vikash Publishing House Pvt. Ltd. **(For unit IV)**

Judith S. L., & et. al. (2012). *Teaching and Learning of Nature of Science and Scientific Inquiry: Building Capacity through Systematic Research-Based Professional Development*. Spriner.

Kothari, C. R. (2013). *Quantitative techniques (New Format)*. New Delhi: Vikash Publishing

House Pvt. Ltd. **(For unit II)**

Ladyman, J. (2002). *Understanding philosophy of science*. New York: Routledge, Taylor and Francis group.

McMahon, et. al. (2006). *Assessment in Science: Practical Experiences and Experiments*. USA : National Association in Research in Science Education, NSTA press.

(For unit II)

Chemistry Education**Chem. Ed. 535 T: Recent Trends in Chemistry Education**

Course No.: Chem. Ed. 535 T

Nature of course: Theoretical

Level: M.Ed. in Chemistry

Credit hours: 2

Semester: Third

Teaching hours: 32

Period per week: 2

1. Course Description

This course is designed to acquaint students with current trends in chemistry teaching and learning. The course aims to develop a professional chemistry teacher equipped with pedagogical knowledge, a better understanding of classroom practices, and proficiency in teaching and learning. Furthermore, it incorporates innovative concepts and recent trends and development in chemistry education by blending technological skills to create learning activities.

2. General Objectives

The general objectives of this course are as follows:

- To provide the knowledge of developmental perspectives of chemistry education.
- To equip the students with the knowledge of the nature, values and scope of chemistry education.
- To acquaint students with the chemistry curriculum at school and university levels.
- To demonstrate the knowledge of chemistry on the basis of contemporary pedagogical concerns.
- To develop knowledge and skills of planning, designing and managing chemistry education classrooms and co-curricular activities.
- To review innovative approaches in chemistry teaching and apply them in chemistry teaching and learning.
- To develop skills of evaluation in the school and the university level.
- To promote an awareness of the social and technological implications of chemistry.

3. Specific Objectives and Contents

Specific Objectives

- Comprehend the aims and objectives of school chemistry education.
- Elaborate the scope of chemistry education.
- List the importance of chemistry education in daily life.
- Review the development of chemistry education at the school and the tertiary level in Nepal, India, U.K., and U.S.A.
- Describe the changing faces of chemistry
- Discuss the chemistry education in a broader context.
- Deal with the issues of chemistry education.
- Explain the major paradigm shifts in chemistry education.
- Discuss the interdisciplinary dimensions of chemistry including correlation of chemistry with social sciences, mathematics, and chemistry.
- Explain the relationship between the chemistry and society in-terms of environment, agriculture, and kitchen.
- Explain the importance of chemistry for sustainable development.
- Explore indigenous knowledge in chemistry in local context.
- Define and explain misconceptions.
- Give a comparative account of concepts, alternative concepts and misconceptions chemistry.
- Explore the students' misconceptions on the school, +2 and the university level chemistry education.
- Introduce chemistry curriculum and its components.
- Explain innovative approaches in school chemistry curriculum of

Contents

Unit I: Developmental Perspectives of Chemistry Education (5pds.)

- 1.27 Aims and objectives of chemistry Education
- 1.28 Scope of chemistry education
- 1.29 Importance of chemistry education
- 1.30 Development of chemistry education in Nepal, India, U.K., and U.S.A.
- 6.2 Changing faces of chemistry
 - 1.31 Chemistry education in a broader context
 - 1.32 Issues in chemistry education
 - 1.33 Paradigm and paradigm shift in chemistry education
 - 1.34 Interdisciplinary dimension of chemistry
 - 1.35 Relation between the chemistry and the society (environment, agriculture and kitchen)
 - 1.36 Chemistry for sustainable development
 - 1.37 Indigenous knowledge in chemistry
 - 1.38 Concepts, alternative concept and misconceptions in chemistry education

Unit II: Chemistry Education Curriculum (5pds.)

- e. Introduction
- f. School and university level chemistry

- SAARC countries.
- Analyze critically the curriculum of secondary level and the university level chemistry curricula of Nepal.
 - Illustrate the features of competency-based chemistry curriculum.
 - Introduce the innovative chemistry education projects in-terms of their objectives, materials procedure, application and importance
 - Chemistry Education Materials Study (CHEM-study).
 - Nuffield O-level chemistry.
 - Elaborate the concept of STEAM literacy.
 - Discuss the needs, features and design of STEAM in the school curriculum.

curricula in SAARC countries

- g. Analysis of secondary and university level chemistry curricula of Nepal
- h. Competency-based chemistry curriculum
- i. Innovative chemistry projects
 1. Chemistry Education Materials Study (CHEM-study)
 2. Nuffield O-level chemistry
- j. STEAM Literacy
 1. STEAM in school curriculum

Unit III: Planning of Chemistry Teaching

(5 pds.)

- Design unit plan and lesson plan in the areas of chemistry.
 - Enlist the advantages of planning in teaching chemistry.
 - Design lesson plans in chemistry based on different approaches.
 - Discuss the criteria for the evaluation of lesson plan.
- k. Unit plan and lesson plan
 1. Advantages of planning in teaching chemistry
 - m. Approaches to design lesson plan
 1. Herbert approach,
 2. ABC approach,
 3. 7Es approach,
 4. Constructivist approach
 5. Project-based approach,
 6. Problem-solving approach
 7. Investigative approach
 8. Discovery approach
 9. Laboratory approach
 - n. Criteria for the evaluation of lesson plan

Unit IV: Instructional Module and e-learning (4 pds.)

- Design an instructional module of a chemistry lesson.
- Develop a programmed instruction in chemistry lesson.
- Elaborate the importance of computer-assisted instruction in chemistry teaching and learning.
- Discuss virtual learning environment for teaching and learning chemistry.
- Develop teaching materials in chemistry using the simulation mode.
- Apply the gaming mode in teaching chemistry.
- Design digital learning lessons on chemistry in VLEs, LMSs.
- Organize videoconferencing in learning chemistry.
- Advance learning experience through virtual field trip.

- 4.9 Instructional module
- 4.10 Programmed instruction
- 4.11 Computer Assisted Instruction (CAI)
- 4.12 Virtual environment for teaching and learning chemistry
- 4.13 Simulation in teaching chemistry
- 4.14 Teaching chemistry in gaming mode
- 4.15 e-learning products: VLEs, LMSs, web-based educational materials, video conferencing
- 4.16 Virtual field trips: concept, process, and application

Unit V: Chemistry Laboratory (4 pds.)

- Explain the basic characteristics of a good chemistry laboratory.
- Develop the designs of chemistry laboratory.
- Describe the techniques of laboratory management.
- Develop the chemistry laboratory skills.
- Point out the major causes of chemistry laboratory accidents and suggest their safety measures.
- Use the virtual chemistry laboratory for teaching and learning chemistry.
- Illustrate the importance of the mobile chemistry laboratory.
- Explain the construction of improvised chemistry laboratory materials and equipment.

- 5.9 Characteristics of a good chemistry laboratory
- 5.10 Planning and designing of a chemistry laboratory
- 5.11 Laboratory management techniques
- 5.12 Chemistry laboratory skills
- 5.13 Chemistry laboratory accidents and safety measures
- 5.14 Virtual chemistry laboratory
- 5.15 Chemistry mobile laboratory
- 5.16 Improvisation of laboratory chemistry materials and equipment.

Unit VI: Evaluation (5 pds.)

- Define evaluation.
- Explain the functions of evaluation.
- Describe summative, formative and

- 6.1 Introduction
- 6.2 Functions of evaluation
- 6.3 Types of evaluation

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| diagnostic evaluation. | 6.4 Specification grid |
| • Construct test items of different levels. | 6.5 Test items |
| • Prepare the specification grid based on the chemistry courses. | 6.6 Attributes of good chemistry test items |
| • Discuss attributes of good chemistry test items | 6.7 General steps of test construction |
| • Explain the general steps of test construction. | 6.8 Construction of test items based on the revised Bloom's taxonomy |
| • Explain the basis characteristics of good chemistry test items. | 6.9 Standardization/ analysis of test |
| • Dry the run test items and calculate difficulty level. | 6.10 Letter grading system |
| • Calculate discrimination index of test items. | |
| • Construct standardized chemistry test items. | |
| • Describe the criteria of item analysis and use them for standardization of test items. | |
| • Calculate the item difficulty and discrimination index of chemistry test items. | |
| • Introduce the letter grading system in Nepal. | |

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to the particular units.

4.1 General Instructional Techniques

- Discussion
- Demonstration
- Presentation
- Inquiry
- Project work
- Cooperative and collaborative work
- Internet (web) surfing
- Group work

4.2 Specific Instructional Techniques

Units Specific Instructional Techniques

- I** Classroom presentation on chemistry and chemistry education.
- II** Curriculum review, and curriculum display of SAARC countries and reflect on it with comments.
- III** Workshop cum discussion
- IV** Paper writing and presentation followed by discussion.
- V** Presentation by studying the handouts provided by the teacher followed by teachers' suggestions on chemistry laboratories. Student must visit chemistry laboratory and observation made by observation check list.
- VI** Presentation by studying the handouts provided by the teacher and makes the report include the suggestions.

5. Evaluation

5.3 Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.3 Internal Evaluation

25 Marks

Internal evaluation will be conducted by the course teacher based on following activities:

1.	Attendance and participation in learning activities	5 Marks
2.	First assignment (written assignment)	5 Marks
3.	Second assignment (report writing and presentation)	5 Marks

4.	Third assignment/ Term exam	10 Marks
Total		25 Marks

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination) 40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

7.	Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
8.	Subjective short questions (6 questions with 2 ‘OR ‘questions x 5 marks)	30 Marks
Total		40 Marks

6. Recommended Books and References

- Agarwal, P. K. (2018). Retrieval practice & Bloom’s taxonomy: Do students need fact knowledge before higher order learning? *Journal of Educational Psychology*.
(For Unit-VI)
- Acharya, K. P. (2020). *Teaching of Science*. Kathmandu: New Hira Publications.
(For All Units)
- Ahmad, S. (2007). *Teacher’s hand Book of Science*, New Delhi: Anmol Publication Pvt. Ltd.
(For All Units)
- Amos, S. & Boohan, R. (2002). *Aspects of teaching secondary science: Perspective on practice*. New York & London: Routledge Taylor and Francis Group. (For Unit I)
- Banks, F., & Barlex, D. (2014). *Teaching STEM in the secondary school: Helping teachers meet the challenge*. New York. Routledge. (For Unit II)
- Bhatnagar A. B. & Bhatnagar S. S. (2004). *Teaching of Science*, Meerut: Surya Publication.
(For All Units)
- Bilal, M., Asgher, M., Cheng, H., Yan, Y., & Iqbal, H. M. (2019). Multi-point enzyme immobilization, surface chemistry, and novel platforms: a paradigm shift in biocatalyst design. *Critical reviews in biotechnology*, 39(2), 202-219.
(For Unit - I)
- Bork, D. (2019). A Framework for Teaching Conceptual Modeling and Metamodeling Based on Bloom’s Revised Taxonomy of Educational Objectives. (For Unit -VI)
- Chambers, D. (1993). Toward a competency-based curriculum. *Journal of Dental Education*, 57, 790-790.
(For Unit - II)
- CLEAPSE. (2009). *Designing and Planning Laboratories*. Brunel Science Park: CLEAPSE (Consortium of Local Education Authorities for the Provision of Science Equipment).
(For Unit - V)
- Davar, M. (2012). *Teaching of Science*. New Delhi: PHI Learning Private Limited.
(For Unit- I, III, IV, & V)

- Diberardinis, L. J., Baum, J. S., First, M. W., Gatwood, G. T., & Seth, A. K. (2013). *Guidelines for Laboratory design: Health, safety, and environmental considerations (4th ed.)* New York: Wiley Publications. **(For Unit - V)**
- Gil-Perez, D., & Carrascosa, J. (1990). What to Do About Science “Misconceptions”. *Science Education* 74(5), 531-540. **(For Unit - I)**
- Gupta, V. (2005). *Teaching and learning of science and technology*. New Delhi: Vikas Publishing House. **(For Unit-IV)**
- Guskey, T. (2011). Five obstacles to grading reform. *Educational Leadership*, 69(3), 16. **(For Unit - VI)**
- Hofstein, A., & Lunetta, V. (1982). The role of the laboratory in science teaching: Neglected aspects of research. *Review of educational research*, 52(2), 201-217. **(For Unit - V)**
- Howarth, S. & Scott, L. (2014). *Success with STEM: Ideas for the classroom, STEM clubs and beyond*. Oxon: Routledge. **(For Unit II)**
- Karpudewan, M., Md.Zain, A. N., & Chandrasegaran, A. (2017). *Overcoming students' misconceptions in Science*. Singapore: Springer Singapore. **(For Unit - I)**
- Kumar, A. (1995). *Teaching of physical Sciences*, New Delhi: Anmol Publication Pvt. Ltd. **(For Unit -I, II, III & V)**
- Lau, D. (2001). Analyzing the curriculum development process: Three models. *Pedagogy, culture and society*, 9(1), 29-44. **(For Unit - II)**
- Levine, M., Serio, N., Radaram, B., Chaudhuri, S., & Talbert, W. (2015). Addressing the STEM gender gap by designing and implementing an educational outreach chemistry camp for middle school girls. *Journal of Chemical Education*, 92(10), 1639-1644. **(For Unit II)**
- Lubiano, M. L. D., & Magpantay, M. S. (2021). Enhanced 7E Instructional Model towards Enriching Science Inquiry Skills. *International Journal of Research in Education and Science*, 7(3), 630-658. **(For Unit - III)**
- Mammi, H. K., & Ithnin, N. (2012). Competency based education (CBE) for IT security: towards bridging the gap. *INTERNATIONAL JOURNAL OF ENGINEERING PEDAGOGY (IJEP)*, 24-26. **(For Unit- II)**
- Mohan, R. (2007). *Innovative science teaching*. New Delhi: Prentice-Hall of India Pvt. Ltd. **(For all Units)**
- Pinner, R. (2014). What Is The Difference between an LMS and a VLE? *Learning Management Systems*. **(For Unit - IV)**
- Ronen, I. (2017). *Misconceptions in science education, (1st ed.)*. UK: Cambridge Scholars Publishing. **(For Unit - I)**
- Silber, R. (1961). The Chemical Education Materials Study Approach to Introductory Chemistry. *School Science Mathematics*, 61(2), 114-118. **(For Unit - II)**
- Sood, J. (2009). *Teaching of science*. New Delhi: Prentice Hall of India. **(For Unit -I, II, III & V)**
- Wei, B., & Ou, Y. (2018). A Comparative Analysis of Junior High School Science Curriculum Standards in Mainland China, Taiwan, Hong Kong, and Macao: Based on Revised Bloom’s Taxonomy. *International Journal of Science and Mathematics Education*, 1-16. **(For Unit - VI)**
- Yakman, G. (2008). STEAM education: An overview of creating a model of integrative education. **(For Unit - I)**
- Zhao, X., Wang, J., Wang, M., Li, X., Gao, X., & Huang, C. (2020). A new model for assessing the impact of environmental psychology, e-learning, learning style and school design on the behavior of elementary students. *Kybernetes*. **(For Unit -IV)**

Chem. Ed. 535 P: Recent Trends in Chemistry education

Course No.: Chem. Ed. 535 P

Nature of course: Practical

Level: M.Ed. in Chemistry

Credit Hours: 1

Semester: Third

Teaching hours: 48*

Periods per week: 3 pds/day/week/gr (P)**

1. Course Description

This practical course acquaints students to impart the knowledge and skills they need to instruct practical classes in chemistry education. It boosts the ability for producing reports, presentations, and seminar papers in addition to the capacity for leading workshops, utilizing cutting-edge lesson planning strategies, e-learning, and improvised materials, designing chemistry labs, and assessing chemistry education at various levels.

2. General Objectives

The objectives of this course are to enable students to

- Analyze the issues of the different aspects of the chemistry curriculum;
- Prepare research articles based on the recent pedagogical approaches in chemistry education;
- Examine the existing secondary school chemistry practices;
- Prepare and present seminar papers by conducting seminars on the issues of chemistry education;
- Develop the skills in PowerPoint presentations and skills of engaged and lived presentations.

3. Contents

Students Activities/Contents	Total hours (48)
<p>Unit I: Developmental Perspectives of Chemistry Education</p> <ul style="list-style-type: none"> • Prepare a discussion paper on the application of Chemistry for daily life. • Prepare report on school and the university-based issues of Chemistry teaching and learning. • Critically review the assigned research papers. • Prepare the manuscript for journal articles within the areas of this unit. • Carry out a mini research study on indigenous knowledge in chemistry. • Make a report on paradigm shifts in chemistry from the 	8

different perspectives.	
Unit II: Chemistry Study Curriculum <ul style="list-style-type: none"> • Prepare report on the issues of different aspects of curriculum (e.g., curriculum development process, aspects of curriculum) and organize discussion session. • Analyze the secondary level chemistry curriculum based on the structure, scope, objectives, organization, strategies and evaluation and then prepare a report on it. • Prepare a sample curriculum based on the related chemistry topics. 	8
Unit III: Planning of Chemistry Teaching <ul style="list-style-type: none"> • Prepare a unit plan for a topic of your choice in chemistry and present it to the class. • Prepare a lesson plan for teaching in chemistry based on the ABC approach, 7E approach, project-based approach and problem-solving approach. 	8
Unit IV: Instructional Module and e-learning <ul style="list-style-type: none"> • Design an instructional module on topics related to chemistry lessons. • Design LMSs for teaching and learning chemistry. • Search web-based materials for teaching and learning chemistry. 	8
Unit V: Chemistry Laboratory <ul style="list-style-type: none"> • Design various models of chemistry laboratory. • Conduct different chemistry related-related activities using the virtual laboratory. • Conduct a survey on students' awareness of laboratory-based activities, lab safety, accidents, and first aid treatment. • Design improvised materials of various kinds using locally available materials. 	8
Unit VI: Unit VI: Evaluation <ul style="list-style-type: none"> • Develop a model specification chart for testing chemistry • Design chemistry courses test item of different levels of 	8

cognitive domain and then administer and calculate the item difficulty and discrimination index. <ul style="list-style-type: none"> Construct a set of test items of chemistry courses based on the revised Bloom's taxonomy. 	
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4. Specific Instructional Techniques

- Internet surfing
- Develop manuscript by collaboration and discussion
- Workshops: Presentation, participatory activities
- Books and article review
- Field visit
- Preparation of charts, models, presentations slides, and reports.

5. Evaluation 35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.1 Internal Evaluation 15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation 20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment/project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessments of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing chemistry lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. **Recommended Books and References**

Ahmad. J., (2011). *Teaching of Biological Science (2nd edition)*. New Delhi: PHI Learning Private Limited.

Agarwal, P. K. (2018). Retrieval practice & Bloom's taxonomy: Do students need fact knowledge before higher-order learning? *Journal of Educational Psychology*.

Chem. Ed. 536 T: Advanced Physical Chemistry

Course No.: Chem. Ed. 536 T

Nature of the Course: Theoretical

Level: M.Ed. in Chemistry

Credit Hours: 2

Semester: Third

Teaching Hours: 32

Period/week: 2

1. Course Description

This course aims to enhance the student's advanced knowledge in the area of physical chemistry. The course is theoretical in nature that includes five units such as Surface chemistry and Solid-state chemistry, Electrochemistry, Thermodynamics and Instrumental Analysis. This course develops the competency of future teachers and equips them with recent knowledge in the field of physical chemistry.

2. General Objectives

The general objectives of this course are as follows:

- To acquaint students with the different laws and aspects of Surface Chemistry, Adsorption, Freundlich, and the Langmuir Adsorption Isotherm
- To familiarize the students with the specific knowledge of solid-state chemistry.
- To acquaint students with the concepts, theories, laws, and principles of thermodynamics
- To enable students in dealing with different concepts of Electrochemistry
- To acquaint with different types of instrumental analysis

3. Specific Objectives and Content

Specific Objectives	Contents
<ul style="list-style-type: none"> • Differentiate between physical and chemical adsorption • Introduce adsorption and its types • Explain Adsorption isotherms • Explain Freundlich adsorption isotherm • Derive the relation for Langmuir adsorption isotherms • Explain BET equation • Determine the surface area of the adsorbent • Describe the catalysis of gaseous reaction by solid surfaces • Explain the adsorption from solution • Describe the types of adsorptions from solution • Derive Gibb's adsorption equation 	<p>Unit I: Surface Chemistry (5pds.)</p> <p>1.1 Differentiate between physical and chemical adsorption</p> <p>1.2 Adsorption and its types</p> <p>1.3 Adsorption isotherms</p> <p>1.4 Freundlich adsorption isotherms</p> <p>1.5 Derivation of Langmuir adsorption isotherms</p> <p>1.6 BET equation</p> <p>1.7 Determination of surface area of adsorbents</p> <p>1.8 Catalysis of gaseous reaction by solid surfaces</p> <p>1.9 Adsorption from solution: Types and Gibb's adsorption equation</p>

<ul style="list-style-type: none"> • Explain the structure of crystalline solid • Explain the polymorphism and transition temperature of solids • Describe the heat capacity of solids • Calculate the packing fraction and number of ions in different types of cubic crystals • Write the assumptions and drawbacks of classical free electron theory • Explain the electrical conductivity of solids by utilizing Ohm's law • Calculate the Widemann- Franz ratio in crystalline solids • Discuss the stoichiometric and non-stoichiometric defects in crystals • Describe the Miller indices and interplanar distance in cubic crystals • Derive Bragg's law • Explain the X- ray diffraction phenomenon in determining the structure of solids 	<p>Unit II: Solid State Chemistry (8pds.)</p> <p>2.1 Crystal system and crystal structure</p> <p>2.2 Polymorphism and transition temperature</p> <p>2.3 Heat capacity of solid</p> <p>2.4 Packing fraction and number of ions in Simple cubic, Body centre cubic and Face centre cubic</p> <p>2.5 Classical free electron theory and its drawbacks</p> <p>2.6 Electrical conductivity and Ohm's law</p> <p>2.7 Conduction electrons</p> <p>2.8 Widemann- Franz ratio</p> <p>2.9 Electrical properties of solid</p> <p>2.10 Defects in crystals stoichiometric and non-stoichiometric defects (qualitative idea only)</p> <p>2.11 Miller indices</p> <p>2.12 Interplanar distance in cubic crystal</p> <p>2.13 Bragg's law</p> <p>2.14 X- ray diffraction for determining the structure of solids</p>
<ul style="list-style-type: none"> • Explain Joule and Thomson effect • State and derive relation for second law of thermodynamics • Explain the different steps of Carnot cycle • Define entropy • Describe dependence of entropy on variables of the system • Derive entropy from Carnot cycle • Describe entropy change in isothermal expansion of an ideal gas • Explain entropy change in reversible and irreversible process • Discuss entropy of a mixture of an ideal gas • Discuss the dependence of entropy on variables of a system • Explain the properties and 	<p>Unit III: Thermodynamics (8pds.)</p> <p>3.1 Joule- Thomson effect</p> <p>3.2 Second law of thermodynamics</p> <p>3.3 Carnot Cycle</p> <p>3.4 Entropy</p> <p>3.5 Dependence of entropy on variables of a system</p> <p>3.6 Entropy change in isothermal expansion of an ideal gas</p> <p>3.7 Entropy change in reversible and irreversible process</p> <p>3.8 Entropy of a mixture of an ideal gas</p> <p>3.9 Thermodynamic efficiency</p> <p>3.10 Properties and significance of Gibb's free energy</p> <p>3.11 Helmholtz and Gibb's free energy</p> <p>3.12 Vant Hoff isotherms</p> <p>3.13 Vant Hoff isochore</p> <p>3.14 Thermodynamic properties of</p>

<p>significance of Gibb's free energy</p> <ul style="list-style-type: none"> • Deduce Gibb's Helmholtz free energy change • Derive Vant Hoff isotherm relation • Derive the relation for Vant Hoff isochore • Discuss the thermodynamic properties of solution • Derive Gibb's Duhem equation • Describe the criterion of equilibrium. • Explain the physical equilibrium involving phase transitions • Deduce the Clausius- Clapeyron equation • Discuss the classical concept of distribution of energy • Explain the fugacity and its determination • Describe the chemical equilibrium and thermodynamic treatment of equilibrium law 	<p>solution</p> <p>3.15 Gibb's Duhem Equation</p> <p>3.16 Physical equilibrium involving Phase Transitions (Clapeyron Equation)</p> <p>3.17 The Clausius- Clapeyron Equation</p> <p>3.18 Classical concept of distribution of energy</p> <p>3.19 Fugacity and its determination</p> <p>3.20 Chemical equilibrium and thermodynamic treatment of equilibrium law</p> <p>3.21 Numerical Problems</p>
<ul style="list-style-type: none"> • Define the concept of thermodynamics and emf measurement • Derive the relationship between emf and free energy • Derive the relation between ΔH and ΔS from the emf data • Derive the Nernst equation for determining the emf • Determine equilibrium constants by using standard potentials • Describe the structure and use of amalgam electrodes, oxidation-reduction electrode, quinhydrone electrode and Ag/Ag^+ ion electrode • Explain chemical cell with and without transference • Describe concentration cell with and without transference • Discuss liquid junction potential for chemical cell and concentration cell • Explain the determination of solubility product of sparingly soluble salt by 	<p>Unit IV: Electrochemistry (6pds.)</p> <p>4.1 Thermodynamics and emf</p> <p>4.2 Relation between emf and free energy</p> <p>4.3 Thermodynamics of electrode potential</p> <p>4.4 Nernst Equation</p> <p>4.5 Standard potential and equilibrium constant</p> <p>4.6 Classification of electrodes:</p> <p>4.6.1 Amalgam electrodes</p> <p>4.6.2 Oxidation- reduction electrodes</p> <p>4.6.3 Quinhydrone electrode</p> <p>4.6.4 Ag/Ag^+ ion electrode</p> <p>4.7 Chemical cell with and without transference</p> <p>4.8 Concentration cell with and without transference</p> <p>4.9 Liquid Junction potential</p> <p>4.10 Solubility products and emf</p> <p>4.11 Numerical Problems</p>

emf measurement • Solve numerical problems on the above-mentioned topics	
<ul style="list-style-type: none"> Elaborate the principle, process and uses of paper chromatography, and adsorption (column) chromatography Elaborate the process of determination of pH by use of potentiometer Describe potentiometric titration of acid and base Describe the basic principle of Voltammetry Introduce and explain principle of polarography, apparatus, working, polarographic measurement and application Describe polarographic measurement briefly Describe AC, and pulse polarography Explain the basic principles, uses and limitations of coulometry, and coulometric titration Solve the numerical related to above mentioned topics 	Unit V: Instrumental Analysis (5pds.) 5.1 Chromatography: Introduction, principle, process and uses of paper chromatography, and adsorption (column) chromatography, 5.2 Potentiometric determination of pH 5.3 Potentiometric acid- base titration 5.4 Basic principles of Voltammetry 5.5 Polarography: introduction, principal apparatus, working, polarographic measurement and applications 5.6 A brief account of AC, and pulse polarography. 5.7 Coulometry and coulometric titration: basic principle, use and limitations 5.8 Numerical problems

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Instructional techniques

The instructional techniques for this course are divided into two groups. The first group consists of the general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General instructional techniques:

- Lecture
- Discussion
- Demonstration
- Project work
- Presentation
- Individual laboratory work
- Collaborative work

4.2 Specific Instructional Techniques/Activities

Units	Specific Instructional Techniques
I	Case analysis and review of experimental reports
II	Report writing and presentation followed by discussion

III	Term paper writing
IV	Construction of materials, practical activities and presentation followed by discussion
V	Project work and presentation

- The teachers may decide the project work related to the course work.

5. Evaluation

5.4 Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.4 Internal Evaluation

25 Marks

Internal evaluation will be conducted by the course teacher based on following activities:

1.	Attendance and participation in learning activities	5 Marks
2.	First assignment (written assignment)	5 Marks
3.	Second assignment (report writing and presentation)	5 Marks
4.	Third assignment/ Term exam	10 Marks
Total		25 Marks

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2. External Evaluation (Final Examination)

40 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

9.	Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
10.	Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks
Total		40 Marks

6. Recommended Books and References

Recommended Books

- Bahl, B.S. (2008). *Essential of physical chemistry*, New Delhi: S Chand & Co. **(For all units)**
- Engel, T., & Reid, P. (2013). *Physical chemistry*. India: Dorling Kindersley (India) Ltd. **(For all units)**
- Goel, A. (2006). *Surface chemistry*. New Delhi: Discovery Publishing House. **(For unit I)**
- Madan, R. L. & Tuli, G. D. (2001). *Physical chemistry*. New Delhi: S Chand and Co. Ltd. **(For units I, II, III and IV)**
- Maron, S.H & Prutton, C. F. (1972). *Principles of physical chemistry (4th ed.)*: New Delhi Oxford and IBH Co. pvt. Ltd. **(For units I, II, III and IV)**
- Nagi, S. & Anand, S. C. A. (1991). *A Text book of physical chemistry*. India: New Age International (P) Limited Publishers. **(For units I, II, III and IV)**
- Sharma, B. K. (2013). *Instrumental analysis of chemical analysis (29th ed.)*. Meerut, India: Goel Publishing House. **(For unit V)**

References

- Atkins, P., & Paula, J.de, (2010). *Physical chemistry (9th ed.)*. Oxford University Press.
- Gurtu, J. N. & Gurtu, A. (2006). *Advance physical chemistry*. Meerut, India: Pragati Prakashan
- Kapoor (1992). *Textbook of Physical chemistry*, India: Mc Milla, India Ltd.
- Pillai, S. O. (1994). *Solid state chemistry*. Wiley Eastern Pvt. Ltd.
- Raj, G. (2002). *Problems in physical chemistry*: Meerut, India: Krishna Prakashan Media (P) Ltd.
- Silbey, J., Robert, A. & Barendi, G.M. (2006). *Physical Chemistry*. New Delhi: Wiley India Pvt. Ltd.
- Smart, L. E. & Moore, E. A. (2012). *Solid state chemistry: An introduction*. Boca Raton: CRC Press.
- Vemulapalli, G. K. (1997). *Physical Chemistry*. New Delhi: Prentice Hall of India

Rao, V. S. (2002). Polarography and allied techniques. India: Universities Press (India) Private Limited.

Chem. Ed. 536 P: Advanced Physical Chemistry

Course No: Chem. Ed. 536 P

Nature of the course: Practical

Level: M.Ed. in Chemistry

Credit hours: 1

Semester: Third

Teaching hours: 48*

Period per week: 3pds/day/week/gr *(P)

1. Course Description

This course aims to provide knowledge and skills related to the practical aspects of physical chemistry through lab-based experiments. Students are expected to be competent in applying the knowledge and skills they have learned to real-life teaching and other professional careers. The practical activities include lab-based experiments on the topic's adsorption reactions, potentiometric titration, pH titration, electrochemistry, and thermochemistry.

2. General Objectives

The general objectives of this course are as follows:

- To provide knowledge on the practical aspect of advanced physical chemistry
- To develop hands-on skills through advanced physical lab-based activities
- To familiarize the students with the recent advances in chemistry experiments and their applications in the teaching profession.

3. Specific Objectives and Content

Specific Objectives	Contents
<ul style="list-style-type: none"> • Analyse the adsorption of acetic acid on charcoal and examine the validity of Freundlich and Langmuir's adsorption isotherms • Determine the specific surface area of given activated charcoal by studying the adsorption of acetic acid and also determine the cross-sectional area of oxalic acid by studying its adsorption onto activated charcoal • Verify Nernst equation by determining the standard electrode potential of Ag/ Ag⁺ electrode at different concentrations • Determine the concentration and dissociation constant of acetic acid by 	<p>Unit1: Adsorption reaction (10)</p> <p>1.1. Adsorption of acetic acid on charcoal</p> <p>1.2. Determination of specific surface area of activated charcoal and oxalic acid</p> <p>Unit2: Potentiometric Titration (20)</p> <p>2.1. Acid- base titration</p> <p>2.2. Precipitation titration</p> <p>2.3. Determination of Electrode potential</p>

potentiometric titration with sodium hydroxide using quinhydrone electrode.

- Determine the solubility and solubility product of a sparingly soluble salt (AgCl) in water
- Find out the strength of mixture of halide salt solution potentiometrically
- Determine the strength of the given ferrous ammonium sulphate solution (approx. 0.1N) by titrating it against potassium dichromate solution potentiometrically. Also find the redox potential of the ferrous ferric system
- Determine the strength of acid mixture solution by titrating it against alkali.
- Prepare acidic buffer solution and determine the PH by using glass electrode.
- Prepare basic buffer solution and determine the PH by using quinhydrone electrode.
- Determine the heat of neutralization of HCl using calorimeter
- Determine the transition temperature of Glauber's salt by thermometric method

Unit3:PH Titration (15)

3.1. Acid-base titration

3.2. Buffer solution

Unit4: Thermochemistry (3)

4.1. Heat of neutralization

4.2. Transition temperature

4. Specific Instructional Techniques

- Performing experiments
- Interview
- Report writing

5. Evaluation

35 Marks

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.3 Internal Evaluation

15 Marks

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks

3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation

20 Marks

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note:

Students must pass both in internal as well as external assessment of practical examination

** Practical teaching hours is 3 times more than teaching hours of theory (3x 16 = 48 hours)*

***A group consists of 15 students and one teacher will be assigned for a group.*

****Construction of models, charts, teaching aids, develop concept map etc. Also, the collection of materials / designing science lab, preparation of lesson plan, unit plan, annual plan, preparation of rubrics, developing test items of various levels etc. for teaching learning.*

6. Recommended Books

Ghimire, K. N. & Bohara, K. P. (2008). *University experimental physical chemistry*. Kathmandu: Quest Publication.

Gurtu, J. N. & Gurtu, A. (2014). *Advanced physical chemistry experiments*, (6th ed.), Meerut, India: Pragati Prakashan.

Khadka, D. B. (2009). *Practical physical chemistry*. Kathmandu: Sunlight Publication.

Vishwanathan, B. & Raghavan, P. S. (2005). *Practical Physical Chemistry*. New Delhi: Viva Books Pvt. Ltd.

Chem. Ed. 537 T: Environmental Chemistry

Course No. : Chem. Ed. 537 T

Nature of course: Theoretical

Level : M.Ed. in Chemistry

Credit hours: 2

Semester : Third

Teaching hours: 32

Period per week: 2

1. Course descriptions

This course is designed to provide knowledge and develop skills in environmental chemistry. The course emphasized introducing atmospheric structures and air, water, land, solid waste, trace elements from thermal and radiation pollution, and green chemistry for emerging green technology.

2. General objectives

The objectives of this course are as follows:

- To acquaint the students with the environmental segments: atmospheric composition and structure, chemical species, and particulates present in the atmosphere.
- To enable the students in elaborating the air, water, land, solid, thermal and radiations pollutions.
- To develop awareness among students about the global problems and programs on environmental pollution.
- To familiarize students with the sources, effects of chemical present in atmosphere, and control measures of environmental pollution.
- To develop an understanding of green chemistry and emerging green technologies.

3. Specific objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • Elaborate the scope of environmental chemistry. • Describe the main composition and structure of the atmosphere. • Discuss with chemical hazard and environmental chemistry and their scope. • Elaborate the atmospheric structure such as troposphere, stratosphere mesosphere and ionosphere. • Explain the chemical and photochemical reaction of air in stratosphere. • Identify the different types of pollutants and pollution. • Differentiate contaminate pollutant and synergism and antagonism. • Describe the sink of atmospheric gases on the basis of Oceans, vegetation, and soil micro-organism. 	<p>Unit I: Environmental Chemistry and Pollution (4pds)</p> <p>1.1 Introduction</p> <p>1.2 Scope of environmental chemistry</p> <p>1.3 Chemical and photochemical reaction in Atmosphere</p> <p>1.4 Contaminant and pollutant</p> <p>1.5 Source receptor and sinks of pollutants</p> <p>1.6 Pathway of pollutants</p> <p>1.7 Sinks and concentration of atmospheric gases</p>
<ul style="list-style-type: none"> • Classify air pollutants according to their origin, chemical composition and states of matter. • Explain the characteristics and biochemical effects of air pollutants such as CO, NO_x, hydrocarbon, SO_x, H₂S, and particulate matter. • Discuss photochemical smog, fog formation, mechanism of smog formation, volatile organic 	<p>Unit II: Air pollution (5pds)</p> <p>2.1 Introduction</p> <p>2.2 Characteristics and biochemical effects of CO, NO_x, hydrocarbons, SO_x, H₂S</p> <p>2.3 Photochemical and industrial smog.</p> <p>2.4 Effect of air pollution</p> <p style="padding-left: 20px;">2.4.1 Greenhouse effect and Global warming</p> <p>2.5 Ozone chemistry</p> <p>2.6 Acid rain</p> <p>2.7 Indoor air pollution</p>

<p>compound and their oxidation, formation of PAN and control of photochemical pollutants.</p> <ul style="list-style-type: none"> • Explain the effect of air pollution on human, animals, vegetation, materials and property and environment. • Discuss the physiological role and function of heavy metal (Hg, Pb, Cd, Cr and As). • Describe the monitoring sampling and analysis of air pollution. • Elaborate the preventive and control measures of air pollution. • Explain the policy and strategy of REDD forest in Nepal. 	<p>2.8 Air pollution control and prevention</p> <p>2.8.1 Air quality standards</p> <p>2.8.2 Air monitoring sampling and analysis</p> <p>2.8.3 Role and strategy of REDD forest in Nepal (Reducing emission from deforestation and forest degradation)</p> <p>2.8.4 Air pollution control and prevention.</p>
<ul style="list-style-type: none"> • Describe chemical composition of water bodies on the basis of acid-base chemistry of lakes, River, and Streams, and physical chemistry of sea water. • Classify water pollution on the basis of organic pollutants, Inorganic pollutants suspended solids and sediments, radioactive materials and thermal pollutants and also describe their effect. • Characterize the waste water on the basis of physical and chemical characteristics. • Compare BOD and COD. • Explain Eutrophication on the basis 	<p>Unit III: Water pollution (6pds)</p> <p>3.1 Introduction</p> <p>3.2 Chemical composition of water bodies</p> <p>3.3 Classification of water pollutants</p> <p>3.4 Characteristics of waste water</p> <p>3.5 Eutrophication</p> <p>3.6 Water quality parameter, sampling and preservation and standards</p> <p>3.7 Monitoring techniques and methodology</p> <p>3.8 Water treatment (Drinking and waste water)</p>

<p>of types, effects and controlling steps.</p> <ul style="list-style-type: none"> • Describe the process of sampling and sample. • Tabulated water quality standards and parameters in WHO and Nepal's standards • Describe waste water treatment process: Primary, secondary and tertiary treatments 	
<ul style="list-style-type: none"> • Explain soil pollution and pollutants. • Discuss the composition of soil on the basis of organic and inorganic components. • Describe the importance of soil water and soil air. • Elaborate the acid base ion-exchange reaction in soil. • Describe the importance of micro and macro nutrients in soil. • Discuss the physiological role and function of heavy metal (Hg, Pb, Cd, Cr and As). • Describe main soil pollutants and their influence on health and environment. • Explain the methods of preventing controlling and ways of minimizing pollutants in soil. • Analyzed the nutrients, metals, ions, mineral present in the soil. 	<p>Unit IV: Land Pollution (4pds)</p> <p>4.1 Introduction</p> <p>4.2 Composition of soil</p> <p>4.3 Water and air in soil</p> <p>4.4 Acid base ion exchange reaction in soil</p> <p>4.5 Micro and macro nutrients in soil</p> <p>4.6 Heavy metals and their physiological role</p> <p>4.7 Main soil pollutants and their influences</p> <p>4.8 Prevention of soil pollution</p> <p>4.9 Analysis of soil</p>

<ul style="list-style-type: none"> • Explain human acoustic. • Elaborate the measurement of noise. • Classify noise on the basis of sources. • Describe effect of noise pollution on the basis of their physiological, psychological and other effects. • Discuss Noise pollution criteria on the basis of annoyance, inference with communication and hearing loss criteria. • Explain the preventive and control measures of noise pollution. 	<p>Unit VI: Noise pollution (4pds)</p> <p>6.1 Introduction</p> <p>6.2 Measurement of noise</p> <p>6.3 Sources and classification of noise</p> <p>6.4 Noise control criteria</p> <p>6.5 Effect of noise pollution</p> <p>6.6 Preventive and control measures of noise pollution</p>
<ul style="list-style-type: none"> • Define and explain radiation pollution. • Describe the types of radiation and radiation measuring units. • Elaborate the radiation source of environment on the basis of naturally occurring radioactive element, cosmic radiation, radiation from medical, television and mobile set, from nuclear weapons and explosion and other miscellaneous sources. • Discuss the nuclear disaster in Hiroshima, three-mile Island, Chernobyl world's nuclear disaster and its effects. • Discuss the effect of radiation on the basis of non-ionizing radiation, microwave radiation, biological, laser radiation, X-ray cumulative 	<p>Unit VII: Radiation pollution (4pds)</p> <p>7.1 Introduction</p> <p>7.2 Radiation and measuring units</p> <p>7.3 Radiation sources in the environment</p> <p>7.4 Nuclear disaster</p> <p>7.5 Effects of radiation</p> <p>7.6 Methods of radioactivity measurement and control</p>

<p>effects of high radiation doses.</p> <ul style="list-style-type: none"> • Explain the Non- genetic and genetic effect of radiation. • Elaborate the control of radiation from occupational radiation exposure, minimizing x-ray hazards. • Point out the preventive measures of radiation. • Point of the general methods of radioactivity measurement and control. 	
<ul style="list-style-type: none"> • Define Green chemistry • Describe the principle of green chemistry. • Explain green reagent on the basis of Dimethyl carbonate, polymer supported reagents and other alternative green reagents. • Elaborate the green catalyst on the basis of Acid, basic, oxidation, photo catalyst, polymer supported catalyst phase transfer catalyst and biocatalyst. • Describe green solvent on the basis of super- critical fluid systems, aqueous solvent systems and ionic liquids. • Discuss green organic synthesis in solid state on the basis of solid phase organic synthesis without using any solvent and solid supported organic synthesis. 	<p>Unit VIII: Green Chemistry (5pds)</p> <p>8.1 Introduction</p> <p>8.2 Principles of green chemistry</p> <p>8.3 Green reagents</p> <p>8.4 Green catalyst</p> <p>8.5 Green solvent</p> <p>8.6 Green organic synthesis in solid state</p> <p>8.7 Emerging green technologies</p> <p>8.8 Green synthesis of polycarbonates</p>

<ul style="list-style-type: none"> • Explain emerging green technology such as Microwave chemistry, Sonochemistry Photochemistry, Electrochemistry • Elucidates green synthesis of polycarbonates in different route such as traditional, green synthesis. • Describe the process of green synthesis in Isocyanates and urethanes, ibuprofen, adipic acid, and disodium iminodiacetate and carbonyl pesticides. 	
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Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of the general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General instructional Techniques:

- Discussion
- Demonstration
- Presentation
- Inquiry
- Project work
- Cooperative and collaborative work
- Internet (web) surfing
- Group work
- Field work

4.2 Specific Instructional Techniques/Activities

Units	Specific Instructional Techniques
I	Classroom presentation on Environmental chemistry and pollution.
II	Report writing and presentation followed by discussion. Perform

practical activities on pollutant measurement.

- III** Presentation by studying the handouts provided by the teacher followed by teachers' suggestions.
- IV** Perform collaborative discussion and reflect on it with comments.
- V** Paper writing on solid waste management and presentation followed by discussion.
- VI** Report writing and presentation followed by discussion. Perform field work on noise pollution.
- VII** Group work, report writing, article reviewing.
- VIII** Collaborative work, perform practical activities on green chemistry.

- The teachers may decide the project work related to the course work.

5. Evaluation (Internal Assessment and External Assessment)

5.5 Evaluation (Internal Assessment and External Assessment)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	25 Marks	40 Marks	65 Marks

Note: Students must pass separately in internal assessment and semester examination.

5.1.5 Internal Evaluation

25 Marks

Internal evaluation will be conducted by the course teacher based on the following activities:

1.	Attendance and participation in learning activities	5 Marks
2.	First assignment (written assignment)	5 Marks
3.	Second assignment (report writing and presentation)	5 Marks
4.	Third assignment/ Term exam	10 Marks
Total		25 Marks

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. The second assignment or assessment might be project work, a case study, a seminar, a survey or field study, an individual or group report, a term paper based on secondary data or a review of literature and documents, etc., and the third assignment will be a term exam.

5.1.2. External Evaluation (Final Examination)**40 Marks** Examination Division,

office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

11. Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
12. Subjective short questions (6 questions with 2 'OR' questions x 5 marks)	30 Marks
Total	40 Marks

6. Recommended Books and References**Recommended Books**

- De, A.K. (2007). *Environmental Chemistry*, Delhi: New Age International P. Limited Publishers, Ansari Road, Daryaganj. **(For unit I, III, IV, V and VII)**
- Kaur, H. (2010). *Environmental Chemistry*, India: Pragati Prakashan, Meerut. **(For unit I, VII and VIII)**
- Pandit, C.N. & Subedi, R.R. (2012). *Environmental Chemistry*, Kathmandu: Cambridge publication Pvt. kalimati. **(For unit I, II, III, IV, V, VI and VII)**
- Pani, B. (2007). *Textbook of environmental chemistry*. IK International Pvt Ltd. **(For unit I, II, III, IV, V, VI and VIII)**

References

- Chatwal, G.R. & Bhagi A.K. (2005). *Environmental Chemistry*, New Delhi: Himalaya Publishing House.
- Dara, S. S., & Mishra, D. D. (2006). *A textbook of environmental chemistry and pollution control*. S. Chand Publishing. **(For unit I, II, III, IV, V, VI and VIII)**
- IUCN, (2000). *Environmental Education, Source Book, Nepal: The World Conservation union*, Kathmandu.
- Jadhav, H.V. & Purohit S.H. (2008). *Global Pollution and Environmental Monitoring*, New Delhi: Himalaya Publishing House.
- Katyal, T. & Satake, M. (1989). *Environmental pollution*, India: Anmol Publication Pvt. Ltd. New Delhi.
- Manahan S. (2017). *Environmental Chemistry*, Lewis Publishers.
- Miller G.T. (2005). *Living in the Environment Principles, Connections, and Solutions(13ed.)*, Singapore: Thomson Asia Pvt. Ltd.

Chem. Ed. 537 P: Environmental Chemistry

Course No. : Chem. Ed. 537 P

Nature of course: Practical

Level : M. Ed. in Chemistry

Credit hours: 1

Semester : Second

Teaching hours: 48*

Period per week:3pds/day/week/group**(P)

1. Course Description

The aims of the course are to provide knowledge and skills among the students through the practical activities of Environmental chemistry conducted in lab. Students are expected to be competent in applying the knowledge and skills they have learned to real-life teaching and other professional careers. The practical activities include lab-based experiments in environmental chemistry.

2. General Objectives

The general objectives of this course are given below:

- To develop practical knowledge and skills in environmental chemistry through laboratory experiments and activities.
- To familiarize the students with the recent advances in environmental chemistry experiments and their applications in teaching and any other related field.

3. Specific Objectives and Contents

Specific objectives	Contents
<ul style="list-style-type: none"> • To determine physicochemical parameters of water quality: color, temperature, turbidity and biological for characterizing water quality. • Determine the concentration of total dissolved solids in a given water sample. • Determine the alkalinity in a given water hardness of a given sample. • Determine the concentration of 	<p>Unit I: Analysis of water (6pds)</p> <p>1. Quantitative analysis</p> <p>1.1 Physicochemical parameter</p> <p>1.2 Concentration of dissolved solid</p> <p>Unit II: Quantitative analysis of water (21pds)</p> <p>2.1 Alkalinity</p> <p>2.2 Hardness of water</p> <p>2.3 Estimation of Nitrogen</p> <p>2.4 Ammonia</p>

<p>NO₂ and NO₃ ions in a given water sample.</p> <ul style="list-style-type: none"> • Determine the concentration of ammonia in given water sample. • Determine the dissolved oxygen in a given water sample. • Estimate chloride ion concentration in a given water sample. • Determine COD in a given water sample. • Determine the free carbon dioxide in a given water sample. • Determine the concentration of free chlorine in swimming pool water. • Determine CO₃ and N in a given water sample. 	<p>2.5 Concentration of dissolved oxygen 2.6 Concentration of chloride ion residual chlorine 2.7 COD 2.8 free CO₂ 2.9 Estimation of CO₃ and N</p>
<ul style="list-style-type: none"> • Determine acid rain in a given air sample 	<p>Unit III: Analysis of air (3pds) 3.1 Acid rain 3.2 Visit monitoring stations/ Vehicular emission test sites</p>
<ul style="list-style-type: none"> • Determine the concentration of total organic matter in a given soil sample. • Determine the concentration of Fe (II) and Fe (III) in a given soils sample. • Determine carbonate and bicarbonate in given soil sample. • Determine the pH of a given soil sample. • Determine the moisture content of a given soil sample. • Determine CO₂ release from soil microbial activity. • Determine water soluble salt in a given soil sample. 	<p>Unit IV: Analysis of soil (15pds) 4.1 Qualitative analysis of soil 4.1.1 Organic matter 4.1.2 Soil carbonate and bicarbonate 4.2 Qualitative analysis of soil 4.2.1 Concentration of iron 4.2.2 pH 4.2.3 Moisture content of soil 4.2.4 CO₂ release from soil microbial activity 4.2.5 Water soluble salt</p>
<ul style="list-style-type: none"> • Perform the project work on some burning issues of environment or environmental chemistry. 	<p>Unit V: Project Work (3pds) 5.1 Project work on Environmental Chemistry</p>

Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Specific Instructional Techniques

- Performing experiments
- Interview
- Report writing

5. Evaluation**35 Marks**

Nature of course	Internal Evaluation	External Evaluation	Total Marks
Practical	15 Marks	20 Marks	35 Marks

5.4 Internal Evaluation**15 Marks**

Marks distribution for practical internal evaluation will be as following.

1.	Attendance	5Marks
2.	Students' portfolios (Record book and Books and article review etc.)	5Marks
3.	Participation, collaborative work and construction of teaching learning resources and planning for teaching learning ***	5Marks
	Total	15Marks

5.2 External Evaluation**20 Marks**

Marks distribution for practical external evaluation will be as following.

1.	Experiment / project work report and presentation / study reports	15Marks
2.	Viva-voce	5 Marks
	Total	20Marks

Note: *Students must pass both the internal as well as the external assessment of the practical examination.*

** Practical teaching hours are three times more than theory teaching hours (3 x 16 = 48 hours).*

***A group consists of 15 students, and one teacher will be assigned to the group.*

**** Construction of models, charts, teaching aids, developing concept maps, etc. Also, the collection of materials, designing science labs, preparation of lesson plans, unit plans, annual plans, preparation of rubrics, developing test items of various levels, etc. for teaching and learning.*

6. Recommended Books

Gopalan, R., Anand, A., & Sugumar, R. W. (2013). *A laboratory manual for environmental chemistry*. IK International Pvt Ltd.

Hooda, S., & Kaur, S. (1999). *Laboratory manual for environmental chemistry*. S. Chand and Company Ltd.

Keith, L. (2017). *Environmental sampling and analysis: a practical guide*.

Routledge.

Weiner, E. R. (2010). *Applications of environmental chemistry: a practical guide for environmental professionals*. CRC press.

Chem. Ed. 539: Research and Statistics

Course No.: Chem. Ed. 539

Nature of the Course: Theoretical

Level: M. Ed. in Chemistry

Credit Hours: 3

Semester: Third

Teaching Hours: 48

Period per week: 3

1. Course Description

This course is designed with the aim to provide the students with the knowledge and skills required for conducting research in the field of education. This course helps to widen the horizon of knowledge and understanding in the existing area of research and statistics. It deals with special emphasis on research philosophy, research design and methods, descriptive and inferential statistics, Data management and analysis using soft-wares, and review and reporting of research work.

2. General Objectives

The objectives of this course are as follows:

- To develop the capacity of students to carry out educational research
- To provide the knowledge and develop understanding on the field of research and statistics.
- To assist the students to understand the application of theories and philosophy in research.
- To provide students with an opportunity to understand the different types of research designs, approaches and methods.
- To acquaint the students with various statistical tools so as to apply in their research works
- To calculate the various data by applying statistical techniques.
- To develop the ability to handle data management and analysis soft-wares
- To acquaint the students with approaches and process of Quantitative and qualitative data analysis
- To develop knowledge and skills for proposal and report writing, and book and article reviewing using appropriate methods and procedures.
- To familiarize with APA format for report writing and presentation

3. Specific Objectives, Contents and Activities

Specific Objectives	Contents
<ul style="list-style-type: none"> • Elaborate the concept of general research, scientific research and action research 	<p>Unit I: Research Theories and Philosophies (10pds)</p> <p>3.1 Concept of Research</p> <p>3.2 Types of Research: General research, Scientific Research and</p>

<ul style="list-style-type: none"> • Describe steps of scientific research and its importance • Apply action research for enhancing science teaching learning and solving recurring problems • Elaborate the induction and deduction approach in science education research • Apply the inquiry approach in science education research • Explain the concept and role of theories in science education research • Discuss the epistemology, ontology and axiology as philosophical basis for educational research • Appraise critically the oriental and western philosophy of science research traditions • Critically analyze the positivist, post-positivist, social constructivist and pragmatist research world views • Illustrate the scientific revolution on the basis of Kuhn's revolution theory and relativism in science. • Discuss the idea if falsification in science 	<p>action research</p> <p>3.2.1 Scientific research: Steps and Importance of scientific research</p> <p>3.2.2 Induction and deduction</p> <p>3.2.3 Inquiry approach in science education research</p> <p>3.2.4 Participatory action research for science education</p> <p>3.3 Concepts and role of theories in science research</p> <p>3.4 Philosophical basis for research</p> <p>3.4.1 Epistemology, Ontology, Axiology</p> <p>3.4.2 Oriental and Western research traditions</p> <p>3.4.3 Philosophical world views: Positivist and post-positivist, social constructivist and pragmatist world views</p> <p>3.5 Scientific revolution and Paradigm shift- Kuhn's scientific revolution theory</p> <p>3.6 Relativism and falsification in science</p>
<ul style="list-style-type: none"> • Understand the meaning of research design, research approach, research method and research methodology • Apply various quantitative research designs and methods in science education 	<p>Unit II: Research Designs and Methods (10pds)</p> <p>2.1 Concept of research design, research approach, research method, and methodology in research</p>

<ul style="list-style-type: none"> • Infer experimental research and apply in science education research • Elaborate and use co-relational research in the study • Elaborate the meaning of qualitative research design • Comprehend the process of case study research methodology in science education • Discuss the process of phenomenological research • Discuss narrative approach in science education research • Explain Hermeneutics approach in educational research • Explain use of mixed method and multi-method research designs in science education research • Explain various types of mixed method research design • Discuss the data triangulation process in science education research 	<p>2.2 Quantitative Design</p> <p>2.2.1 Experimental research</p> <p>2.2.2 Correlation research</p> <p>2.2.3 Survey</p> <p>2.3 Qualitative Design</p> <p>2.3.1 Case study</p> <p>2.3.2 Ethnography</p> <p>2.3.3 Phenomenology</p> <p>2.3.4 Narrative</p> <p>2.3.5 Hermeneutics</p> <p>2.4 Mixed method and Multi-method research Design</p> <p>2.5 Data Triangulation</p>
<ul style="list-style-type: none"> • Introduce statistical analysis and its importance in science education research • Describe the nominal, ordinal, interval and ratio scale with examples • Exemplify number and frequency distribution in science research • Present numerical data by using different types of graphs 	<p>Unit III: An Overview of Descriptive Statistics and its Application (6pds)</p> <p>3.1 Introduction</p> <p>3.2 Measurement scales</p> <p>3.3 Frequency distribution and Graphs</p> <p>3.4 Measure of central tendency</p> <p>3.5 Measure of dispersion</p> <p>3.6 Correlation and regression analysis</p> <p>3.7 Skewness and kurtosis</p>

<ul style="list-style-type: none"> • Calculate mean, median, mode, quartile, percentile and deciles with various examples and apply it in science education research • Calculate measure of dispersion on the basis of their range, average and standard deviation in various data and its apply in science education research • Calculate correlation coefficient and simple regression from various data • Apply correlation and regression in science education research • Describe the skewness and kurtosis with various examples • Use SPPS for data entry, displaying data in frequency, cross tabulations and figures 	3.8 SPSS data analysis
<ul style="list-style-type: none"> • Draw and explain normal distribution curve • Develop various research hypothesis and find out their level of significance and decision-making rule • Discuss the concept of sampling distribution • Describe the sampling distribution based on random sample, mean and sample variance, standard error, central limit theorem and law of large number • Draw normal distribution curve in 	<p>Unit IV: Inferential Statistics (10pds)</p> <p>4.1 Normal Distribution</p> <p>4.2 Null hypothesis level of significance, decision rule</p> <p>4.3 Sampling distribution: random sample, sample mean and sample variance, standard error, central limit theorem, standard error and law of large number</p> <p>4.4 Analysis of Variance</p> <p>4.5 Test of hypothesis</p> <p>4.6 Designing and Testing Hypothesis</p> <p>4.7 Test of significance</p> <p>4.8 Parametric and non-parametric</p>

<p>various data and apply hypothesis testing</p> <ul style="list-style-type: none"> • Apply different parametric and non-parametric test in research • Differentiate parametric and non-parametric test • Apply test of significance for various data • Apply t-test, z-test, ANOVA and MANOVA test in research study • Apply chi-square test in research • Explain the steps and techniques of one way and two-way analysis of variance. 	<p>tests</p> <p>4.9 Some Numerical calculation</p> <p>4.10 SPSS analysis</p>
<ul style="list-style-type: none"> • Discuss the sources and nature of qualitative data • Interpret qualitative data analysis process • Describe the steps of qualitative data analysis procedure • Explain different approaches of qualitative analysis as thematic inductive and domain approaches • Demonstrate skills required for qualitative data analysis • Apply qualitative data analysis approaches for a qualitative data • Elaborate the importance of qualitative data analysis in research • Apply and uses qualitative data management and analysis software: Atlas- Ti and NVIVO 	<p>Unit V: Qualitative data analysis (4pds)</p> <p>5.1 Sources and nature of qualitative data</p> <p>5.2 Concept of qualitative data analysis</p> <p>5.3 Steps in qualitative data analysis</p> <p>5.4 Approaches of qualitative data analysis</p> <p>5.5 Importance of qualitative data analysis in research</p> <p>5.6 Qualitative data analysis software: Introduction to Atlas-Ti and NVIVO</p>
	<p>Unit VI: Review and development</p>

<ul style="list-style-type: none"> • Discuss the process of literature review • Discuss the importance of literature review • Describe the components of research proposal and report writing • Outline the format of research proposal • Develop the research proposal in the areas of science education • Develop the format for thesis, report and article writing • Use APA format for text citation, text formatting and final report preparation • Review the selected science book and science related article (at least one) on the basis of available analysis format. 	<p style="text-align: center;">of research work (8pds)</p> <p>6.1 Literature review</p> <p>6.2 Proposal development for science education research</p> <p>6.3 Thesis, report and article writing</p> <p>6.4 Text citation and formatting report- APA Style</p> <p>6.5 Book and article review</p>
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Note: The figures in the parenthesis indicate the appropriate teaching hours for the respective units.

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 Instructional Techniques

- Lecture
- Discussion (Discussion among peers, discussion with teachers and with the experts)
- Demonstration
- power point presentation
- Inquiry method
- Project Work
- Cooperative and collaborative Work

- Report writing
- Power point presentation
- Internet (web) surfing
- Individual laboratory work
- Field work

4.2 Specific Instructional Techniques/Activities

Units	Specific Instructional Techniques
I	Classroom presentation on research theories and philosophy.
II	Report writing and presentation followed by discussion on research design and methods.
III	Presentation by studying the handouts provided by the teacher followed by teachers' suggestions. Perform SPSS Software orientation and analysis of particular data.
IV	PowerPoint display and reflect on it with comments.
V	Paper writing and presentation followed by discussion. Perform N-vivo Software orientation and analysis of particular data.
VI	Classroom presentation and collaborative group discussion orientated to the presentation.

- All the units require library study, project work preparation, cooperative and collaborative methods of learning, problem solving method and power-point presentation.
- The teachers and students may decide the project work related to the course work

7. Evaluation

7.1 Evaluation (Internal Assessment and External Examination)

Nature of course	Internal Assessment	Semester Examination	Total Marks
Theory	40 Marks	60 Marks	100 Marks

Note: Students must pass separately in internal assessment and semester examination.

7.1.1 Internal Evaluation

40 Marks

Internal evaluation will be conducted by course teacher based on following activities:

1. Attendance	5 Marks
2. Participation in learning activities	5 Marks

3.	First assignment (written assignment)	10 Marks
4.	Second assignment (Project work/ report writing and presentation)	10 Marks
5.	Third assignment/ Term exam	10 Marks
Total		40 Marks

Note: First assignment/assessment might be book review /article review, quiz, home assignment etc. according to nature of course. Second assignment/assessment might be project work, case study, seminar, survey/field study and individual/group report writing, term paper based on secondary data or review of literature and documents etc. and third assignment will be term exam.

5.1.2 External Evaluation (Final Examination)

60 Marks

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester. The marks distribution will be

6.	Objective questions (Multiple Choice Questions 10 x 1mark)	10 Marks
7.	Subjective short questions (6 questions with 2 'OR 'questions x 5 marks)	30 Marks
8.	Subjective long questions (2 questions with 1 'OR 'questions x 10 marks)	20 Marks
Total		60 Marks

6. Recommended Books and References

Recommended Books

Best, J. W. & Kahn, J. V. (2012). *Research in Education* (10th ed.). New Delhi:

PHI Learning Private Limited. **(For all units)**

Cohen, L., Manion, L., & Morrison, K. (2011). *Research methods in education* (7th ed.). Oxon: Routledge.

Creswell, J. W. (2012). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research*. Boston: Pearson.

Denzin, N. K. & Lincoln, Y.S. (1998). *Strategies of Qualitative inquire*, Thousand Oaks: Sage Publication. **(For unit I, II and III)**

Guba, E., & Lincoln, Y. S. (1998). *The Landscape of qualitative research: Theories and Issues*, Thousand Oaks: Sage Publication.

(For unit I and II)

Gupta, S. C. (1992). *Fundamentals of statistics* (5th ed.). New Delhi: Himalaya

Publishing House (**For unit III and IV**)

Ladyman, J. (2002). *Understanding Philosophy of Science*. London and New York: Routledge, Taylor and Francis group (**For unit I and II**)

References

American Psychological Association (2010). *Publication Manual of the American Psychological Association* (6th ed.). Washington, DC: Author.

(**For unit VI**)

Bordens, K.S & Abbott, B.B. (2011). *Research Design and Methods: A Process Approach* (8th ed.), Indiana University.

Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approach* (3rd ed.). New Delhi: Sage Publications India Pvt Ltd.

Denzin, N. K., & Lincoln, Y. S. (2011). *The Sage handbook of qualitative research* (4th ed.). Thousand Oaks: Sage Publications Ltd.

Joshi, P. R (2010). *Research Methodology* (4th ed.). Kathmandu, Nepal: Buddha Academic Publishers and Distributors Pvt. Ltd. (**For unit I, II, V**)

Kothari, C. R. (1990). *Quantitative Techniques* (3rd ed.). New Delhi: Vikash Publishing House Pvt. Ltd. (**For unit I, II**)

McMahon, et al. (2006). *Assessment in Science; Practical Experiences and Experiments*. National Association in Research in Science Education, NAST Press. (**For unit III**)

Mertens, D. M. (2015). *Research and evaluation in education and psychology* (4th ed.). New Delhi: Sage Publications India Pvt Ltd.

Oliver, P. (2004). *Writing your thesis*. London: Sage Publications Ltd.

Pandit, C.N & Poudel R.P. (2068). *Modern Research Methodology, Writing and Evaluation*, Kathmandu, Nepal: Pragya publication, (**For unit I, II, III, V and VI**)

Singh, K. (2007). *Quantitative social research methods*. New Delhi: Sage Publications India Pvt Ltd.

Singh, Y. K. (2006). *Research Methodology and Statistics*. New Delhi: New age international (P) limited. (**For unit II and III**)

Health Education

H.Ed. 535: Instructional Technology in Health Education

Course No. : H.Ed. 535

Nature of Course: Theoretical

Level: M.Ed.

Credit hour: 3

Semester: Third

Teaching hours: 48

1. Course Description

This course is designed to equip the students with essential knowledge and skills pertaining to the innovative teaching strategies, communication in teaching and use of technology in health education. It enables the students in designing, selecting and using appropriate teaching materials and media in health education.

2. General Objectives:

The general objectives of this course are as follows:

- To equip the students with general knowledge of innovative instructional strategies in health education.
- To widen the horizon of knowledge and understanding of students with a view to making them able to select appropriate approaches and materials/media for classroom teaching.
- To enable the students to apply the innovative teaching strategies as per the situation of school and community.
- To enable the student to use information communication technology, multimedia and locally available materials for innovative and effective teaching
- To analyse critically the curriculum of health education.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain concepts of teaching and instructional technology in relation to health education • Describe formal, descriptive and normative theories of teaching • Discuss and apply different types of instructional designs in health education. 	<p>Unit 1 : Instructional Designs in Health Education (10)</p> <p>1.1 Concept of teaching and instructional technology</p> <p>1.2 Theories of teaching (formal, descriptive and normative)</p> <p>1.3 Types of instructional design</p> <p>1.3.1 Objective based</p> <p>1.3.2 Skill based</p> <p>1.3.3 Competency based</p> <p>1.3.4 Learning-style based</p> <p>1.3.5 Model based (ADDIE, Dick and Carey Models)</p> <p>1.3.6 Constructivist-Instructional Design model</p>
<ul style="list-style-type: none"> • Describe concept of innovation and innovative teaching strategies in health education • Delineate the need of innovative strategies and participatory approaches • Apply Different types of innovative 	<p>Unit 2: Innovative teaching strategies in Health Education(18)</p> <p>2.1 Concept and need of innovation and innovative teaching strategies in health education and related field</p> <p>2.2 Innovative and participatory strategies</p>

strategies in teaching health education	2.2.1 Workshop and Project method 2.2.2 Micro-teaching and peer teaching-learning 2.2.3 Games, simulation and imagination 2.2.4 Collaborative Learning 2.2.5 Critical Pedagogy 2.2.6 Problem-Based Learning (PBL) 2.2.7 Case study 2.2.8 Dialogical method 2.2.9 Inquiry-based learning 2.2.10 Active Teaching learning 2.2.11 Concept of Digital pedagogy
<ul style="list-style-type: none"> • Explain different model of communication such as Shannon-weaver model, Hargie and colleague's model, McGuire's communication-persuasion model, Northhouse and Northhouse's model of health communication in health instruction • Explain model, strategies and tools of behavior change communication (BCC) • Appraise factors influencing and barriers to communication in classroom and mass media • Use different communication channels and methods in health education. • Plan a communication process in health education. 	Unit 3: Communication in Health Education (10) 3.1 Models of health communication: Shannon-Weaver model, Hargie and Colleague's Model, McGuire's communication-persuasion ,model, Northhouse & Northhouse's model of health communication 3.2 Model, strategies and tools of Behaviour change communication (BCC) 3.3 Factors influencing communication 3.4 Barriers in classroom communication 3.5 Methods of communication: Intrapersonal, interpersonal, group, public and mass communication 3.6 Communication planning process in health education teaching
<ul style="list-style-type: none"> • Describe importance of information and communication technology in health education • Mention goals of multi-media delivery in classroom teaching • Apply multimedia in teaching health education in real setting • Able to use electronic communication devices and strategies in teaching health education • Discuss potential use of web-based instruction/online learning • Design and construct different instructional materials commonly used in health education • Critically analyse existing curriculum of 	Unit 4: Use of Technology and Review of Health Education Curriculum (10) 4.1 Importance of Information and Communication technology in health education 4.2 Goals of multi-media delivery and use of multimedia video, CDROM, slides/power point presentation in classroom 4.3 Use of electronic communication devices and (cell phone, tablet pc) strategies (email, internet, social media) 4.4 Potential use of internet for web-based instruction in health education 4.5 Design and construction different instructional materials in health education. 4.6 Innovative use of teaching board, low cost

basic, secondary and bachelor level.	and locally available materials for effective health instruction 4.7 Analysis of the existing health education curriculum of Basic, Secondary and Bachelor level
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4. Instructional Techniques

The instructional techniques will be applied on the basis of the nature of lesson topics under each unit. In general, following instructional techniques are applicable in most of the contents and units;

4.1 General Techniques

- Lecture
- Discussion
- Brain storming
- Interaction
- Presentation
- Cooperative learning
- Active teaching learning(Peer Approach)

4.2 Specific Instructional Techniques

Units	Activities and Instructional Techniques
1	The students will be asked to review theory of instruction and instructional designs and selected students will make a short presentation in classroom.
2	A panel discussion will be organized to clarify the theories and to determine innovative and participatory approaches of health education. Students will be divided into different groups to practice different teaching strategies and approaches in teaching health education. The teacher will explain and demonstrate the newly introduced teaching strategies.
3	The teacher will describe the theories of communication in teaching health education. The students will be asked to practice communication models in teaching health education in class. The teacher will use active teaching learning approaches to engage to students on different contents. The students will be asked to review of communication models and their use in health education class and make presentation in classroom.
4	The students will be asked to identify different ICT materials which can be applied in teaching population education. Project work on innovative of multi-media, teaching board and locally available materials in classroom teaching. The teacher will ask students to identify the criteria for reviewing curriculum of health education. Students will be asked to collect curriculum of health education of different levels. They will also be asked to review the curriculum in terms of objectives, contents and their relevancy.

5.5 Internal Evaluation 40%

Internal evaluation will be conducted by subject teachers based on following aspects:

SN	Particular	Points
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1	Attendance	5
2	Participation in learning activities	5
3	First assessment: Article review/ book review/ open book test/ unit test etc	10
4	Second assessment: Midterm test	10
5	Third assessment: Project work/case study/field/study/survey/seminar/workshop	10
Total		40

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

SN	Types of question	Marks
1	Objective type question(multiple choice 10 x 1)	10
2	Short answer questions (6 questions x 5 marks with 2 OR questions)	30
3	Long answer questions (2 questions x 10 marks with 1 OR question)	20
Total		60

6 Recommended Books and References

6.1 Recommended Books

Aggrawal, J.C. (1999). *Principles, methods & techniques of teaching*. New Delhi: Vikas Publishing House Pvt. Ltd. (Unit I).

Bradshaw, M.J., and Lowenstein, A.J. (2011). *Innovative teaching strategies in nursing and related health professions*. Boston: Jones and Bartlett Publishers. (For Unit II and IV)

Clurvey, D. (2003). *Inquiry-based learning*. New York: Routledge. (For Unit II)

Corcorn, N. (2007). *Communicating health: strategies for health promotion*. London, New Delhi: Sage Publication (For Unit III)

Gagne, R. (2010). *Instructional technology foundations: (Digital printing)*. Madison Avenue, New York: Routledge (For Unit I and IV)

Lee, M., and Winzenried, A. (2009). *The use of instructional technology in classroom. Lessons to be learnt*. Victoria, Australia: ACER Press. (For Unit IV)

Mangal, S. K. & Mangal, U. (2009). *Essential of educational technology*. New Delhi: PHI Learning Limited. (Unit I and IV)

6.2 References

Corcorn, N. (2013). *Communicating health: strategies for health promotion*. London, New Delhi: Sage Publication

Dahama, O.P & Bhatnagar, O.P (1997). *Education and communication for development*. New Delhi: Oxford and IBHPublishing Co. Pvt Ltd

Dale, E. Audio-Visual Methods in Teaching (3rd Edition), Holt, Rinehart, and Winston (1969).

Gillbert, G.G., Sawyer, R.G., and McNeill, E.B. (2009). *Health Education: Creating strategies for school and community*. Boston: Jones and Bartlett Publisher

- Hubley, John (1993). *Communicating health: An action guide to health education and health promotion*. Malaysia: Macmillan Education Limited.
- Mohan, R. (2011). *Teacher education*. New Delhi: PHI Learning Private Limited.
- Mudwari, N. (2068 B.S.). (Nepali) *Modern approaches in health education*. Kathmandu: Jupiter Publisher and Distributors
- Petty, G Active Learning Works: the evidence, www.geoffpetty.com/downloads/WORD/ActiveLearningWorks.doc
- Ramachandran, L. & Dharmalingham, T. (2004). *Health education: A new approach*. New Delhi: Vikash Publishing House Pvt. Ltd.
- Sampath, K., Panneerselvam, A. & Santhanan, A. (2000). *Introduction to educational technology (4th edit.)* New Delhi: Sterling Publishers Pvt. Ltd.
- Vedanaynyagam, E.G (1989). *Teaching technology for college teachers*. New Delhi: Sterling publishers Pvt. Ltd.
- Vanja, M. (2010) *Educational technology*. Hyderabad: Neelkamal Publicaiton Pvt Ltd.
- <http://www.celt.iastate.edu/teaching-resources/effective-practice/revised-blooms-taxonomy/>
- http://www.utar.edu.my/fegt/file/Revised_Blooms_Info.pdf

H.Ed. 534: Contemporary Issues in Health and Health Education

Course No.: H.Ed. 534

Level: M.Ed.

Semester: Third

Nature of Course: Theory+Practical

Credit hour: 3 (2th+ 1Pr)

Teaching hours: 64(Th: 32, Pr:32)

1. Course Description

This course has been designed to equip the students with in-depth knowledge on issues and challenges of health and health education. It has been developed with a view to enhance their knowledge and skills for identifying issues pertinent to health education, writing seminar papers on health issues and challenges and present in a seminar. It also provides them an opportunity to organize a seminar effectively.

2. General Objectives

The general objectives of the course are as follows:

- To make the students familiar with identification of resource materials in health related issues and challenges.
- To acquaint the students with global health issues and challenges such as health in all policies, social determinants of health, politics of health, health of senior citizens, human sexuality and reproductive health and health education in emergencies.
- To enhance the students knowledge and expertise in reviewing literature and peer review.
- To enable the students in writing seminar papers and present in a seminar.
- To develop among students hands on skills in conducting a seminar.
- To enable the students supply peer review comments on research papers and develop presentation skills.
- To enable the students in editing the seminar paper based on the feedback given

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Discuss the concept and need of seminar. • Describe the types of Seminar • Explain the phases and process of seminar organization. • Develop a seminar proposal in brief. • Prepare a seminar report in brief. 	<p>Unit 1: Seminar in Health Education and Promotion (10)</p> <p>1.1 Concept and need of seminar</p> <p>1.2 Types of Seminar- Theoretical and empirical</p> <p>1.3 Phases and process of seminar organization</p> <p>1.4 Developing a seminar proposal</p> <p>1.5 Presentation skills for seminar</p> <p>1.6 Writing seminar report</p>

<ul style="list-style-type: none"> • Analyze the situation and issues of workplace health policy and its implementation • Highlight the globalization and national policy space for Health in all policies (HiAP) • Analyze health policy based on security situation in terms of human, food, girl child and child labor. • Delineate the National Health Policy • Analyze adolescents health and development strategy of Nepal • Explore the senior citizen policy and act in Nepal • Discuss on the need and importance of health education during disasters and health emergencies • Analyze the issues of Sustainable Development Goals (SDGs) 	<p>Unit 2: Review of Health Policies (10)</p> <ol style="list-style-type: none"> 2.1 Workplace health policy and its implementation 2.2 Globalization and national policy space for Health in All Policies (HiAP) 2.3 Health Security (health and human security, food security, girl child security, child labor) 2.4 National Health Policy 2.5 Adolescents health and development policy and strategy of Nepal 2.6 Senior citizen policy and act in Nepal 2.7 Health education for health services during emergencies (Disasters, epidemic such as Covid-19, Ebola, Swine Flu, armed conflict, Mental health) 2.8 Sustainable Development Goals(SDGs)
<ul style="list-style-type: none"> • Describe the social origin and social determinants of health and illness. • Explain the relationship between education, income, occupation and health status. • Analyze the caste/ethnic and gender variation in health status in Nepal. • Discuss life styles and Non communicable disease. • Explore issues and reducing activities of social exclusion, inequity and social injustice in health care • Discuss the politics and state responsibilities of health and health care in Nepal • Explore issues related to the impact of globalization, privatization and liberalization on health and health care • Discuss the situation of food security and its impact on malnutrition in Nepal 	<p>Unit 3: Social Determinants and Politics of Health (12)</p> <ol style="list-style-type: none"> 3.1 Social origin and social determinants of health and illness 3.2 Relationship between education and income, occupation and health status 3.3 Gender, racial and ethnic/caste disparities in health 3.4 Lifestyles and non-communicable diseases 3.5 Social exclusion, equity and social justice in health 3.6 Politics of health and health care 3.7 State responsibility of health and health care services and it crises 3.8 Impact of globalization, liberalization and privatization on health and health care 3.9 Food security and malnutrition in Nepal.
<ul style="list-style-type: none"> • Selection of the title /area of the topic • Collect the data from reviewing different sources. • Tabulation and analysis of the data • Preparation of seminar paper based on specified format. 	<p>Unit 4: Preparation of seminar paper and presentation on issues of health and health education.</p> <ol style="list-style-type: none"> 4.1. Selection of issues of the seminar paper based on its criteria

<ul style="list-style-type: none"> • Present the paper 	<p>4.2. Area of study can be taken from the following- Maternal and child health, adolescence health, adult health, population growth and Family planning, environmental health and sanitation, nutrition, personal hygiene, school health, disease and illness, health care and treatment, health teaching, health problems, health policies consumer health , occupational health etc.</p>
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4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Discussion
- Brain storming
- Case study
- Focus group discussion
- Interview
- Cooperative Learning
- Independent study
- Presentation

4.2 Specific Instructional Techniques

Unit	Activities and instructional techniques
1	Each student will be asked to read relevant books and articles related to the concept and need of seminar, types of seminar, phases and process of seminar. Some students will present their notes in class and after presentation there will be interaction among students. Teacher will give the model of seminar proposal, and writing a seminar report and take discussion in the class. Likewise teacher will talk about the seminar presentation skills and also give the model presentation and conduct discussion in the class.
2	Class will be divided into several groups comprising 4-6 members in each groups and each group will study books, articles and documents related to issues of working health policy and implementation, globalization and national policy space for Health in All Policies (HiAP), health Security (health and human security, food security, girl child security, child labor) and national health policy, adolescents health and development policy and strategy of Nepal, senior citizen policy and act in Nepal, health education for health services during emergencies (Disasters, epidemic

	such as Covid-19, Ebola, Swine Flu, armed conflict, Mental health), Sustainable Development Goals (SDGs) and prepare notes for presentation on assigned topic. Each group will present their notes in class. After presentation there will be discussion among the students.
3	Class will be divided into several groups and assigned one issue for one group related to social origin and social determinants of health and illness, relationship between education and income, occupation and health status, gender, racial and ethnic/caste disparities in health, lifestyles and non-communicable diseases, social exclusion, equity and social justice in health, politics of health and health care, state responsibility of health and health care services and its crises, impact of globalization, liberalization and privatization on health and health care of food security and malnutrition in Nepal and prepare their notes for presentation on assigned topic. Each group will present their notes in class. After presentation there will be discussion among the students.

4.3 Preparation of seminar paper and Specific Instructional Techniques (Practical 40%, 32hr)

	Class will be divided into several groups comprising 5-6 students in each group. Each group will work on a broad theme of seminar. But each student of the group will prepare an individual seminar paper on sub-theme. Each group will prepare detailed proposal of seminar issues with different themes. After having prepared the proposal, each group will consult the related materials and will collect the required data. After data collection, they will be analyzed and interpreted in group and prepare summary of findings for presentation. The detailed work plan of seminar is as given below.
1 st month	<ul style="list-style-type: none"> • Discussion and clarification of different issues on health education • Discussion about sources of learning materials • Visiting libraries and websites to identify related materials • Reviewing journals, reports and other reference books and collect information
2 nd month	<ul style="list-style-type: none"> • Discussion of concept of seminar and its procedure • Clarification about method of writing seminar papers • Writing papers
3 rd month	<ul style="list-style-type: none"> • Printing papers and distribution to the peers for collecting comments • Division of group and distribution of assignments • Organizing seminar—each group or individual presents papers in different themes or sub themes.(internal) • Collecting feedbacks, editing papers and submission • Viva –voice (external)

5. Evaluation

6.1 Internal Evaluation 40%(25) of 65 theory portion

Internal evaluation will be conducted by subject teachers based on following aspects:

SN	Particular	Points
1	Attendance	2
2	Participation in learning activities	3
3	First assessment /midterm examination	10
4	Second assessment/term paper	10
Total		25

5.2 External Examination (Final Examination) 60% (40) of 65 theory portion

Examination section, Office of the Dean, Faculty of Education will appoint the external examiner at the end of semester. Both internal and external examiners will give the marks as follows

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

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|---|-----------|
| 3) Objective type question (Multiple choice 10 x 1pnts) | 10 Points |
| 4) Short answer questions (6 questions x 5 points with 2 or questions) | 30 Points |

Total	40 points
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6.2 Internal Evaluation 40% (15) of Practical portion(From Internal)

Internal evaluations will be conduct by course teacher based on following activities.

• Attendance	2 marks
• Visiting libraries and websites to identify related materials Reviewing journals, reports and other references books	3 marks
• Reporting Writing	5 marks
• Presentation of draft seminar reports	5 marks
Total	15 marks

5.3 Practical examination (From External)**20**

S.N	Types of question	Points
1	Quality of Seminar paper	10
2	Seminar Presentation	5
3	Viva Voce	5
Total		20

6. Recommended Books and References**6.1. Recommended Books**

- Adhikari, J., & Sedon, D. (2003). *Conflict and food security in Nepal*. Kathmandu: Report submitted to rural construction Nepal (For Unit II)
- Anand, S., Peter, F., & Sen, A. (Eds.). (2004). *Public health, ethics, and equity*. New Delhi: Oxford University Press. (For unit II)
- Charles, C/ (2014) What's the World Health Organization For? *Final Report from the Centre on Global Health Security Working Group on Health Governance*. Chatham House, London (Unit I)
- Devkota, B. (2010), Violent conflict and complex emergencies: Expanding the horizon of Health Education & Promotion in Nepal, *Journal of Health Promotion*, Vol 3 (Unit V).
- GoN, MoHP (1994). *National health policy*. Kathmandu. (Unit I).
- Hansen, G., Venturilli, P., & Fleckenstein, A. E. (2008). *Drugs and society*. London: Jones and Bartlett Publisher. (For unit VI)
- Jones, L. J. (1994). *The social context of health and health work*. New York: Palgrave. (For units III and VIII)
- Lancet*, *Complex Emergencies*, [Volume 364, No. 9447](#), p1741–1742, 13 November 2004, Lancet Special series May 2015 (upcoming) (Unit V)
- Marmot, M. & Wilkinson, R.G. (1999). *Social determinants of health*. Oxford: Oxford University Press. Park, K. (For unit III)
- PMAC (2015). Security Interests in Global and Public Health, [file:///C:/Users/Bhisen/Downloads/PMAC2015_CF_PS1.1_Session%20\(1\).pdf](file:///C:/Users/Bhisen/Downloads/PMAC2015_CF_PS1.1_Session%20(1).pdf) (Unit I, Unit V)
- Onta, S. (2004). State responsibility: public health perspective (In Nepali). In M. Deshan and P.Onta (Eds), *Nepalko Sandarbhamā Samajshāstriya chintan*. Kathmandu, Social Science Baha.
- Pradhan, A. and Strachan (2003). *Adolescent and youth reproductive health in Nepal: status, issues, policies and program*. Kathmandu: Family Health Division, Ministry of Health (Unit IV)
- WHO (2008). *Closing the gap in a generation: Health equity through action on the social determinants of health*. Final Report of WHO Commission on Social Determinants of Health. Geneva: World Health Organization. (For Unit II)

6.2 References

- UN : Synthesis report of the Secretary-General on the post-2015 sustainable development agenda
http://www.who.int/occupational_health/publications/healthy_workplaces_model.pdf (Unit I)

H.Ed. 538: Applied Health Education Research

Course No.: H.Ed. 538

Level: M.Ed.

Semester: Third

Nature of course: Theory

Credit hour: 3

Teaching hours: 48

1. Course Description: This course has two prongs; applied research methods and statistics. Upon completing the course students will understand the basics of health education research methods and statistics. They will develop an understanding of various research methods and statistical tools that are applied in health education research. Students will be able to apply their knowledge and skills in developing research tools both in quantitative and qualitative researches, and collect and analyze qualitative and quantitative data. They will also be able to generate research questions, formulate, and test hypothesis based on the data they generate or given to them and prepare research proposal, report and articles in proper formats.

2. General Objectives

General objectives of this course are as follows:

- To familiarize the students with the basic concepts and steps of health education research.
- To familiarize the students with research designs, types of data, sources and organization of data, tools and methods of qualitative and quantitative research.
- To enable the students to develop research tools, collect data, analyze data and write reports.
- To enable the students to describe sampling designs and determine appropriate sample size using proper power calculations.
- To help the students to identify methodology-specific techniques for sampling; data generation, collection, and preparation; data analysis; interpretation and representation.
- To familiarize the students with SPSS in analyzing quantitative data and introduce NVivo and ATLAS.ti for qualitative data.
- To orient the students with ethics of health education research and biases.
- To provide the students with knowledge and skills required for developing proposal on topic of choice and write a research article.
- To make the students able to apply basic statistics in analyzing data.
- To provide knowledge and skills required for writing thesis, research report and research articles using proper format.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain key steps of health education research process with examples • Search literatures using manual and electronic databases • Review published articles and prepare review report • Identify, analyze and write research problem • Prepare research questions and hypothesis • Identify and operationalize variables in the process of developing research proposal • Describe the types of research designs and select a design in research process • Explain different types of sampling designs and calculate sample size scientifically. 	<p>Unit 1: Health Education Research Process (8)</p> <ol style="list-style-type: none"> 1.1 Key steps in research process 1.2 Literature search (systematic database search) 1.3 Review of published articles and prepare review report 1.4 Identifying, analyzing and writing research problem 1.5 Formulating research questions and hypothesis 1.6 Identification and operationalization of variables 1.7 Types of health education research designs 1.8 Sample size calculation and sampling in quantitative and qualitative research
<ul style="list-style-type: none"> • Select appropriate methods and develop tools for quantitative and qualitative researches • Identify Validity Reliability and trustworthiness of research tools and methods • Identify and use various methods of validation and finalization of research tools • Simulate and mock drill the tool administration process in the classroom and the community. 	<p>Unit 2: Research Methods and Tools in Health Education (14)</p> <ol style="list-style-type: none"> 2.1 Methods and tools of quantitative research – Structured interview, self-administered questionnaire, closed observation (Check list, Rating scales) and attitude study (Likert’s scale) 2.2 Methods and tools of qualitative research: In-depth interview, key informant interview, Focus Group Discussion (FGD), open observation, and case study 2.3 Validity Reliability and trustworthiness of research tools and methods 2.4 Validation and finalization of research tools in quantitative and qualitative research (Trail testing, Pre-testing and Pilot testing) 2.5 Simulations/Mock sessions on using various tools for sample data collection
<ul style="list-style-type: none"> • Identify methods and procedures for quantitative data analysis. • Explain measurement scales and apply them in quantitative data analysis • Apply data management skills such as data checking, coding, recoding, data entry and tabulation in quantitative data analysis • Develop data analysis framework in SPSS including defining variables and coding data • Enter and analyze data using SPSS • Apply basic statistical tests in analyzing data • Identify methods and procedure of qualitative data analysis • Use qualitative data analysis software with proper procedures • Apply mix methods (qualitative and 	<p>Unit 3: Analysis of Quantitative and Qualitative Data in Health Education Research (16)</p> <ol style="list-style-type: none"> 3.1 Methods and procedures for quantitative data analysis <ol style="list-style-type: none"> 3.1.1 Types of measurement scales and their application in quantitative data analysis 3.1.2 Data management skills: Data checking, editing, coding, recoding, data entry and tabulation 3.1.3 Data analysis framework- Dummy tables 3.1.4 Application of quantitative data analysis using SPSS software 3.1.5 Testing hypothesis- t-test, chi-square test, Z-test, correlation and multiple regression using SPSS 3.2 Methods and procedures for qualitative data analysis <ol style="list-style-type: none"> 3.2.1 Thematic method

<p>quantitative) in health education research</p> <ul style="list-style-type: none"> • Identify various types of triangulation and use that in research • Apply techniques of minimizing errors and avoiding biases in health education research process 	<p>3.2.2 Procedures: Recording and transcribing, translating, identifying themes/sub-themes, coding data, categorizing and organizing data by codes/themes, writing memo, reducing and displaying data</p> <p>3.2.3 Introduction to qualitative data analysis using NVivo and ATLAS.ti software</p> <p>3.3 Application of mixed methods in health education research- Concept and types</p> <p>3.4 Triangulation in research: Concept and types</p> <p>3.5 Biases and errors in research process including data analysis and interpretation in health education</p>
<ul style="list-style-type: none"> • Develop a research proposal on health education and promotion related topic • Explain and apply basic steps of scientific report, thesis and article writing • Develop format and template of research report, thesis and article in the process of writing • Apply writing tips while writing abstract, results and discussion of findings, conclusion and implications • Write citation with sources and references using APA styles • Describe concept and important of ethics in research • Explain process of taking informed consent • Adopt measures for avoiding plagiarism in health education research writings 	<p>Unit 4: Writing Research Proposal and Report and Ethics in Health Education Research (10)</p> <p>4.1 Development of a research proposal</p> <p>4.2 Basics of research report and scientific writing</p> <p>4.2.1 Basic steps of scientific report, thesis and article writing</p> <p>4.2.2 Developing format/template of research report, thesis and article</p> <p>4.2.3 Process of writing abstracts, results and discussion of findings, conclusion and implications</p> <p>4.2.4 Techniques of citation and referencing using Latest APA style/format</p> <p>4.2.5 Concept and importance of ethics in health Education research</p> <p>4.2.6 Informed consent and confidentiality</p> <p>4.2.7 Incentives for participation and involving vulnerable participants</p> <p>4.2.8 Ethics in health education research with Ethical Guidelines for health education research in Nepal</p> <p>4.2.9 Plagiarism in health education research</p>

4. Methods/Instructional Techniques

The instructional techniques for this course comprise both general and specific methods

4.1 General Instructional Techniques

- Lecture
- Group discussion and presentation
- Guest speech
- Reviews of research paper
- Library visit
- Peer learning and group work
- Home assignment

4.2 Specific Instructional Techniques

Unit	Activity and instructional techniques
1.	The teacher will pose the class short questions on basic process of health education research and discuss on them one after another. S/He will remind students of the research designs and present them with question-answer approach. The teacher will demonstrate literature search methods using key word search methods and Boolean operators. The students will practice formulating research questions and hypothesis in the class. They will also discuss on methods of testing the hypothesis.
2.	The students will prepare research tools and make a mock drill session in the classroom among peers. They will be later sent to the local community for practical experience. They will inform the class about the field experience after they accomplish sample data collection through the use of the tool.
3.	A guest lecture will be organized to introduce and demonstrate basics of SPSS such as defining variables, data input, output saving and analysis for quantitative data. Similarly, NVivo and ATLAS.ti as the software programs for analysis of qualitative data will also be introduced. Students will be encouraged to bring laptops and practice the dummy data for the data entry and analysis.
4.	Students are asked to either prepare a research proposal or write a scientific research article.

5. Evaluation

5.1 Internal Evaluation - 40%

The course teacher based on following activities will conduct internal evaluation:

1) Attendance	5 points
2) Participation in learning activities	5 points
3) First assignments (Review of research reports/articles)	10 points
4) Second assignment (Preparation of tool and its simulation)	10 points
5) Third assignment (Preparation of proposal or research article)	10 points

Total: 40 points

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

SN	Types of question	Marks
1	Objective type question(multiple choice 10 x 1 mark)	10
2	Short answer questions (6 questions x 5 marks with 2 OR questions)	30
3	Long answer questions (2 questions x 10 marks with 1 OR question))	20
Total		60

6. Recommended Books and References

6.1 Recommended Books

- Abramson, J.H., & Abramson, Z.H. (2008) *Research methods in community medicine: Survey, epidemiologic research, programme evaluation and clinical trial*. West Sussex, England: John Wiley and Sons.
- Argyrous, G. (2000). *Statistics for social and health research*. London: Sage publication (For Unit I and III)
- Carver, R.H., & Nash, J.G. (2012). *Doing data analysis using SPSS version 18*. Boston, MA: Cengage Learnig (For Unit III)
- Marek, P. The basics of scientific writing in APA styles. *Kennesaw State University*.
- Murchison, J.M. (2010). *Ethnography essentials*. San Francisco: John Wiley and Sons.
- Nepal Health Research Council(2011), *National Ethical Guidelines For Health Research in Nepal And Standard Operating Procedures* , Kathmandu, (Unit 4)
- Peat, J. 2002. *Health science research: Handbook of quantitative research*. NSW, Australia: Allen & Unwi. (For Unit I and III)
- PP Simkhada, , E van Teijlingen & V Hundley(2013). Writing an academic paper for publication, *Health Renaissance* 11(1): 1-5 (Unit IV)
- Ulin, P.R., Robinson,E.T. & Tolley, E.E. (2005). *Qualitative methods in public health. A field guide for applied research*. San Francisco: Jossey-Bass. (For I, II and III)
- Salzar, L.F, Crosby. R.A. & Diclemente, R.J. (2015). *Research methods in health promotion*. San Francisco CA: Jossey-Bass (Unit I,II, III & IV)
- Stewart, A. (2002). *Basic statistics and epidemiology. A practical guide*. Abingdon, UK: Radcliffe Medical Press. (For unit I and III)
- WHO (1994). *Teaching Health Statistics Twenty Lessons and Seminar Outlines*, New Delhi: CBS Publishers and Distributors (Unit II and III)

6.2 References

- Andrew, S., and Halcomb, E.J. (2009). *Mixed method research in nursing and the health sciences*. West Sussex, England: Blackwell Publishing.
- Budhathoki, C.B., and Wagle, B.P. (2069 BS). *Community organization and health (in Neplai)*. Kathmandu: Pinnacle Publication.
- Budhathoki, C.B. (2012). *Unheard voices of people on health. Case studies from rural areas of Nepal. A source book of case study research*. Kathmandu, Pinnacle Publication
- CDC, *Principle of epidemiology in public health practice*. Available from www.cdc.gov/training/products/ss1000 (Unit 1)
- Denzin, N. K. & Lincoln, Y. S. (2005). *The Sage handbook of qualitative research* (3rd Ed.). Sage Publications Inc
- Devkota, B. (2068 BS). *Health research methodology*. Kathmandu, Educational Resource and Development Center Nepal
- Green, J., and Thorogood, Nicki (2004). *Qualitative methods for health research*. London: Sage Publication
- Mahajan, BK.(1991).*Methods in Biostatistics-for Medical Students and Research Workers*. New Delhi, India, Jaypee Brothers Medical Publishers (P) Ltd.
- Silverman D.(2001). *Interpreting Qualitative data: methods for analysis talk, text andinteraction*,2nd edition, London, Sage
- Sylvia, W.S. (2004). *Biostatistics and epidemiology. A primer for health and biomedical professional*. New York: Springer.
- Takashakkori, A, & Teddlie ,C.(2002).*Handbook of mixed methods in the social and behavioural research*. Thousan Oaks, CA, Sage Publication.
- WHO.(1992). *Health research methodology: A Guide for Training in Research Methods*
- World Health Organization. (2000). *Operational Guidelines for Ethics Committees That Review Biomedical Research*, Geneva(Unit IV)

H.Ed. 539: Health Education Planning and Management

Course No. : H.Ed. 539

Level: M.Ed.

Semester: Third

Nature of course: Theoretical

Credit hour: 3

Teaching hours: 48

1. Course Description

This course is designed to provide students with the concepts, procedures, theories and experiences of program planning and its management. It emphasizes on enabling the students to plan and manage health education instruction and programs in a systematic way.

2. General Objectives

The general objectives of this course are as follows:

- To make the students familiar with the concept of planning and its models used in health education.
- To provide the students with the knowledge of management functions and theories applicable in health education.
- To acquaint the students with the concept of organizational behavior and leadership approaches needed for a manager.
- To acquaint the students with the process of planning and managing health education instruction and programs.
- To familiarize students with the knowledge of motivation perspectives and classroom management strategies for effective instructional planning.
- To provide the students with the knowledge and skills of strengthening school health programs and management of school health service and healthy school environment.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Describe the need of planning in health education and promotion programs. • Identify the steps of planning in health education and promotion programs. • Conceptualize the types of health needs and the stages of assessing them. • Describe and apply various models of planning health education and promotion programs. 	<p>Unit 1: Planning in Health Education and Promotion (12)</p> <p>1.1 Concept and need of planning in health education and promotion</p> <p>1.2 Steps of planning in health education and promotion</p> <p>1.3 Assessing health needs</p> <p>1.3.1 Concept and types of health needs</p> <p>1.3.2 Stages of assessing health needs</p> <p>1.4 Model of planning health education and promotion program</p> <p>1.4.1 McCarthy's model of rational planning</p> <p>1.4.2 PRECEDE-PROCEED model</p> <p>1.4.3 Dignan and Carr's model</p> <p>1.4.4 Theory of change/Logical framework of planning</p> <p>1.4.5 SWOT analysis</p>
<ul style="list-style-type: none"> • Describe the concept and principles of management used in health education and promotion. • Discuss the functions of management. • Identify managerial roles and skills 	<p>Unit 2: Management in Health Education and Promotion (10)</p> <p>2.1 Concept and principles of management</p> <p>2.2 Functions of management</p> <p>2.3 Managerial roles and skills of a health education and promotion manager in</p>

<p>needed for a health education and promotion manager in educational institution.</p> <ul style="list-style-type: none"> • Mention the qualities of an effective manager. • Describe the theories of management used in managing health education and promotion programs. • Describe the concept and need of organization behavior for managers in health education and promotion. • Explain the concept and theories of leadership. 	<p>educational institution</p> <p>2.4 Qualities of an effective manager</p> <p>2.5 Theories of management</p> <p>2.5.1 Classical theories</p> <p>2.5.2 Neo-classical theories</p> <p>2.5.3 Modern management theories (system theory, total quality management and team management)</p> <p>2.6 Concept and need of organizational behavior for managers</p> <p>2.7 Concept and theories of leadership approaches</p>
<ul style="list-style-type: none"> • Introduce instructional planning in health education. • Identify and use the teacher centered lesson planning, direct instruction and instructional strategies. • Identify and use the student centered principles and instructional strategies. • Describe the concept and need of motivation and motivation perspectives. • Use extrinsic and intrinsic motivation techniques. • Describe the concept and need of classroom management. • Identify and use the principles and styles of classroom arrangement during health instruction. • Analyze the strategies of creating positive environment for learning and dealing with problem behaviors and aggression. 	<p>Unit 3: Planning and Management of Health Education Instruction (14)</p> <p>3.1 Introduction to instructional planning in health education</p> <p>3.2 Teacher centered planning and instruction</p> <p>3.2.1 Teacher centered lesson planning</p> <p>3.2.2 Direct instruction</p> <p>3.2.3 Teacher centered instructional strategies</p> <p>3.3 learner centered planning and instruction</p> <p>3.3.1 Learner centered principles</p> <p>3.3.2 Learner centered instructional strategies</p> <p>3.4 Planning for student motivation for effective learning</p> <p>3.4.1 Concept and need of motivation</p> <p>3.4.2 Motivation perspectives (behavioral, humanistic, cognitive and social)</p> <p>3.4.3 Using extrinsic and intrinsic motivation</p> <p>3.5 Health Education classroom management</p> <p>3.5.1 Concept and need of classroom management</p> <p>3.5.2 Principles and styles of classroom management</p> <p>3.5.3 Strategies of creating positive environment for learning</p> <p>3.5.4 Strategies for dealing with problem behaviors aggression and inclusive teaching.</p>
<ul style="list-style-type: none"> • Describe the process of strategic planning in school health program. • Identify the challenges to achieving the vision of school health program in Nepal. • Analyze various strategies for strengthening school health programs. • Identify the indicators for planning and 	<p>Unit 4: Planning and Management of School Health Program (12)</p> <p>4.1 Concept and process of planning in school health program</p> <p>4.2 Challenges to achieving the vision of school health program in Nepal</p> <p>4.3 Strategies for strengthening school health programs</p> <p>4.3.1 Vision building and strategic planning</p>

<p>managing school health program.</p> <ul style="list-style-type: none"> • Apply the ways to manage school health service in Nepal. • Apply the ways to manage healthy school environment in Nepal. • Review various case studies on cost effective interventions in school health programs. 	<p>4.3.2 Advocacy 4.3.3 Networking and collaboration 4.3.4 Resource mobilization and allocation 4.3.5 Capacity building 4.3.6 Operations research 4.4 Indicators for planning and managing school health program 4.5 Management of school health service (through Nurse, health teacher, outsourcing and collaboration with local health facility) 4.6 Management of healthy school environment (through infrastructural planning, school community mobilization, School health committee, child clubs and generating operations maintenance fund) 4.7 Case studies on cost-effective interventions in school health program</p>
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4. Instructional Techniques

The instructional techniques for this course are divided into two groups. The first group consists of general instructional techniques applicable to most of the units and sub-units, while the second group consists of proposed specific instructional techniques applicable to the specific units and topics.

4.1 General Instructional Techniques

- Lecture
- Group work
- Presentation
- Question-answer
- Discussion
- Case study and field work
- Peer learning

4.2 Specific Instructional Techniques

Unit	Activities and Instructional Techniques
1	Students in groups will self-study the planning models and each group will present it in the class. The presentation will be followed by the discussion to find out the application of these models.
2	Students will visit a nearby school; meet the principal and other fellow teachers and interview with them about the managerial practice of the principal. Student will prepare a case study report including the qualities of the principal as a manager, his/her knowledge on organizational behavior and leadership approaches.
3	Students will be asked to prepare lesson plan following teacher centered or student centered approach. They will demonstrate a lesson of 20 minutes including classroom management skills. It will be discussed in the classroom and given feedback by the peers and teacher.

4	Students will be divided into groups and assigned to visit a nearby school to identify the status of school health program. They will apply a short program on school health service or healthy school environment. They will write a report at the end.
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5. Evaluation

5.1 Internal Evaluation - 40%

Internal evaluation will be conducted by subject teacher based on the following activities:

6) Attendance	5
7) Class participation	5
8) First assignment (Group presentation)	10
9) Second assignment (Case study)	10
10) Third assignment (Observation on SHP and report writing)	10
Total	40

5.2 External Examination (Final Examination) 60%

Examination Division, Office of the Dean, Faculty of Education will conduct final examination at the end of semester.

SN	Types of question	Marks
1	Objective type question(multiple choice 10 x 1)	10
2	Short answer questions (6 questions x 5 marks with 2 OR questions)	30
3	Long answer questions (2 questions x 10 marks with 1 OR question))	20
Total		60

6. Recommended Books and References

6.1 Recommended Books

Glanz, K., Rimer, B.K., & Lewis, F.M. (2002). *Health behavior and health education:*

Theories, research and practice (3rd ed.). San Francisco: John Wiley & Sons, Inc.

Government of Nepal (2006). National school health and nutrition strategy, Nepal, Ministry of Health Population and Ministry of Education and Sport, Kathmandu.

Government of Nepal(2014). Joint action plan 2071/72- 2076/77 school health and nutrition, Ministry of Health and Population and Ministry of Education, Kathmandu

McKenzie, J. F., & Smeltzer, J. L. (2001). *Planning, implementing, and evaluating health promotion program: A miner (3rd ed.)*. London: Allyn and Bacon.

Park, K. (2007). *Park's textbook of social medicine (19th ed.)*. Jabalpur: M/s Banarsidas Bhanot.

Pradhan, H. B. (2003). *A textbook of health education; Philosophy & principles*. Kathmandu: Educational Publishing House.

Robbins, S.P. (2003). *Organizational behavior (10th ed.)*. Delhi: Pearson Education (Singapore) Pte. Ltd.

Rubinson, L., & Alles, W. F. (1984). *Health education foundation for the future*. Mosby USA: Times Mirror.

Santrock, J.W. (2006). *Educational psychology: Classroom update: preparing for praxis and practice* (2nd ed.). New Delhi: Tata McGraw-Hill. Pp. 374-485.

Thomas, R.K. (2002). *Health service planning* (2nd ed.). New York: Kluwer Academic Publishers

Zuckerman, A.M. (2006). *Healthcare strategic planning* (2nd ed.). New Delhi: Prentice-Hall of India Pvt.

6.2 References

Green A. (1999). *An introduction to health planning in developing countries* (2nd ed.). New York: Oxford University Press

Baidhya, P. C. et al. (2068 BS). *Foundation and principle of health education*. Kathmandu: Pinnacle Publication.

Budhathoki, C.B., & Wagle, B.P. (2068). *School health programme management*. Kathmandu: Pinnacle Publication.

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Jones, R.A.P (2007). *Nursing leadership and management: Theory, process and practices*. Philadelphia: F.A. Davis Company.

Meeks, L. et al. (2003). *Comprehensive school health education: totally awesome strategies for teaching health*. New York: Mc. Graw–Hill.

Neupane, D., & Khanal, V. (2010). *A textbook of health service management in Nepal*. Kathmandu: Vidyarthi Pustak Bhandar.

SCHP (2062 BS). *School health program implementing guidelines (In Nepali)*. School and Community Health Project (SCHP), Teku, Kathmandu.

Sallis, E. (2005). *Total management in education* (3rd ed.). London: Kogan Page Ltd.

Tomkins, J. R. (2005). *Organization theory and public management*. Belmont, CA: Thomson Learning Inc.

UNESCO (2007). *Reforming school supervision for quality improvement: Module 7- Alternative model in reforming school supervision*. Paris: IIEP/UNESCO available from www.unesco.org/iiep

Nepali Language Education

नेपा.शि .५३५: नेपाली भाषाशिक्षण

क्र.आ. : ३

पाठ्यांश संख्या : नेपा.शि. ५३५

पाठ्यांश प्रकृति : सैद्धान्तिक

तह : एम.एड.

प्रतिहप्ता पाठघन्टी : ३

सेमेस्टर : तेस्रो

जम्मा पाठघन्टी : ४८

१. पाठ्यांश परिचय

यो पाठ्यांश शिक्षाशास्त्र सङ्कायअन्तर्गत सेमेस्टर प्रणालीमा आधारित नेपाली शिक्षा विषयमा स्नातकोत्तर (एम.एड.) विशिष्टीकरण गर्न चाहने विद्यार्थीहरूको लागि तयार गरिएको हो । यस पाठ्यांशमा भाषा शिक्षणका सिद्धान्त र नेपाली शिक्षणका विविध स्वरूप, भाषिक सिप, शिक्षण प्रविधि, शब्दार्थ, शब्दभण्डार, वाक्य रचना तथा व्याकरण शिक्षण, कक्षा व्यवस्था र निराकरणात्मक शिक्षण, शिक्षण सामग्री र विविध शिक्षण प्रविधिहरू र अध्यापन योजनाआदि पाठ्यसामग्रीहरू रहेका छन् ।

२. साधारण उद्देश्य

यस पाठ्यांशको अध्ययनपछि विद्यार्थीहरू निम्नलिखित साधारण उद्देश्यहरू हासिल गर्न सक्षम हुनेछन् :

- भाषा शिक्षणका सिद्धान्त, नेपाली शिक्षणका विविध स्वरूप, परम्परा र वर्तमान स्थितिको आकलन गर्न
- नेपाली भाषाका श्रवण कला, वक्तृत्व कला, पठन कला, लेखन कला, उच्चारण, वर्णविन्यास र सहकार्यकलाप शिक्षणका प्रविधिहरूको प्रासङ्गिक वर्णन गर्न
- नेपाली भाषाका शब्दार्थ, शब्दभण्डार, वाक्यरचना र व्याकरण शिक्षणका विधि, प्रविधिहरू प्रयोग गर्न
- नेपाली शिक्षणका सन्दर्भमा कक्षाव्यवस्था र निराकरणात्मक शिक्षणका उपायहरू सुझाउन
- नेपाली भाषा शिक्षणका सन्दर्भमा शिक्षण सामग्री र विविध शिक्षण प्रविधिहरूको उपयोग सन्दर्भ पहिल्याउन
- नेपाली भाषा शिक्षणमा अध्यापन योजनाका प्रयोजन, प्रकार र ढाँचा पहिल्याई तिनको निर्माण र प्रयोग अभ्यास गर्न ।

३. विशिष्ट उद्देश्य र पाठ्यविषय

विशिष्ट उद्देश्य	पाठ्यविषय
<ul style="list-style-type: none"> ■ भाषा शिक्षणको परिचय दिन ■ भाषा शिक्षणका आधारभूत सिद्धान्तहरूको व्याख्या गर्न ■ शास्त्रीय भाषा, स्थानीय वा राष्ट्रभाषा र विदेशी भाषाका सापेक्षतामा नेपाली शिक्षणको भूमिका स्पष्ट पार्न ■ पहिलो, दोस्रो र विदेशी भाषाका रूपमा नेपाली शिक्षणको आवश्यकता र स्वरूप वा रूपरेखा बताउन ■ ऐतिहासिक दृष्टिले नेपाली शिक्षण गतिविधिको सर्वेक्षण गरी वर्तमान स्थितिको आकलन गर्न । 	<p>एकाइ एक : भाषा शिक्षणका सिद्धान्त र नेपाली शिक्षणका विविध स्वरूप (१०)</p> <p>१.१ भाषा शिक्षणको परिचय</p> <p>१.२ भाषा शिक्षणका आधारभूत सिद्धान्त</p> <p>१.३ शास्त्रीय भाषा, स्थानीय भाषा, राष्ट्रभाषा र विदेशी भाषाका सापेक्षतामा नेपाली शिक्षण</p> <p>१.४ पहिलो, दोस्रो र विदेशी भाषाका रूपमा नेपाली शिक्षणको आवश्यकता र स्वरूप</p> <p>१.५ नेपाली शिक्षण परम्परा र वर्तमान स्थिति</p> <ul style="list-style-type: none"> ■ वि.सं. २०२८ अगि र पछिका विविध गतिविधि एवम् प्रयासहरू ■ नेपाली शिक्षणको वर्तमान अवस्था

<ul style="list-style-type: none"> ■ शिक्षण प्रयोजन, श्रवण प्रकार र शिक्षण कार्यकलापहरूको रूपरेखा सहित श्रवण कला शिक्षणको परिचय दिन ■ परिचय र प्रयोजन सहित वक्तृत्व कला शिक्षणका कार्यकलापहरूको रूपरेखा बताउन ■ पठन कलाका सन्दर्भमा यसका प्रकार, वाचन कला, मौन पठन कला र द्रुत पठन कला शिक्षणका आवश्यक तत्त्व एवम् प्रक्रियागत पक्षहरू उजागर गर्न ■ उच्चारण शिक्षणको परिचय दिई यसका शिक्षण तरिका र शिक्षण क्रम उल्लेख गर्न ■ लेखन कला शिक्षणका प्रकार, प्रयोजन, सामान्य कार्यकलाप तथा सम्बद्ध सिप विकासका प्रारम्भिक र उत्तरवर्ती कार्यकलापहरूको वर्णन गर्न ■ परिचय, प्रयोजन, प्रमुख त्रुटिक्षेत्र र कार्यकलाप सहित वर्णविन्यास शिक्षणको परिचय दिन ■ नेपाली भाषिक सिप प्रवर्धनमा सहयोग पुऱ्याउने प्रमुख सहकार्यकलापहरूको प्रक्रियागत परिचय दिन । 	<p>एकाइ दुई : भाषिक सिप शिक्षण प्रविधि (द)</p> <p>२.१ श्रवण कला शिक्षण : परिचय, प्रयोजन, प्रकार र शिक्षण कार्यकलाप</p> <p>२.२ वक्तृत्व कला शिक्षण : परिचय, प्रयोजन र शिक्षण कार्यकलाप</p> <p>२.३ पठन कला शिक्षण : परिचय, सस्वर पठन र मौन पठन</p> <p>२.३.१ वाचन कला शिक्षण</p> <ul style="list-style-type: none"> ■ वाचन कलाका आवश्यक तत्त्व ■ वाचनका सीमा, दोष र कमजोरीहरू ■ वाचनका कमजोरी सुधारका उपायहरू <p>२.३.२ मौन पठन कला शिक्षण</p> <ul style="list-style-type: none"> ■ परिचय ■ पाठकमा हुनुपर्ने गुण ■ फाइदा ■ शिक्षण कार्यकलाप <p>२.३.३ पठनबोध शिक्षण</p> <ul style="list-style-type: none"> ■ प्रयोजन ■ मौन पठनको उपयोग ■ सामग्री छनोट ■ शिक्षण कार्यकलाप ■ शिक्षणक्रम ■ बोधप्रश्नका विशेषता <p>२.३.४ द्रुतपठन कला शिक्षण : परिचय, सामग्री छनोट र कार्यकलाप</p> <p>२.४ उच्चारण शिक्षण : परिचय र तरिका</p> <p>२.५ लेखन कला शिक्षण</p> <ul style="list-style-type: none"> ■ परिचय र प्रकार ■ शिक्षण प्रयोजन ■ प्रकार : यान्त्रिक, निर्देशित तथा स्वतन्त्र वा सिर्जनात्मक ■ लेखन कला विकासका प्रारम्भिक कार्यकलाप ■ लेखन कला विकासका उच्चवर्ती कार्यकलाप <p>२.६ वर्णविन्यास शिक्षण : परिचय, प्रयोजन, प्रमुख त्रुटिक्षेत्र र कार्यकलाप</p> <p>२.७ नेपाली शिक्षणका सहकार्यकलाप</p> <ul style="list-style-type: none"> ■ हिज्जे प्रतियोगिता ■ वाद विवाद प्रतियोगिता ■ अभिनयात्मक कार्यकलाप ■ साहित्यिक प्रतियोगिता ■ विद्यालय पत्रिका प्रकाशन ■ साहित्यिक गोष्ठी तथा समारोह
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<ul style="list-style-type: none"> ■ शब्दार्थ र शब्दभण्डार शिक्षणका प्रयोजन, शब्दार्थ शिक्षण विधि र शब्दभण्डार विकासका उपायहरू सुझाउन ■ उखान टुक्का शिक्षणका महत्त्व र प्रयोजन तथा प्रमुख कार्यकलापहरूको चिनारी गराउन ■ वाक्यरचना शिक्षणका प्रयोजन र प्रमुख कार्यकलापहरूको रूपरेखा बताउन ■ तहगत दृष्टिले व्याकरण शिक्षणको औचित्य निर्धारण गरी नेपाली व्याकरण शिक्षणका समस्या र समाधान तथा व्याकरण शिक्षणका प्रचलित विधिहरूको उपयोगिता औल्याउन 	<p>एकाइ तिन : शब्दार्थ, शब्दभण्डार, वाक्यरचना तथा व्याकरण शिक्षण (८)</p> <p>३.१ शब्दार्थ तथा शब्दभण्डार शिक्षण</p> <ul style="list-style-type: none"> ■ शब्दार्थ तथा शब्दभण्डार प्रयोजन ■ शब्दार्थ शिक्षणका विधिहरू ■ शब्दभण्डार विकासका उपायहरू <p>३.२ उखानटुक्का शिक्षण</p> <ul style="list-style-type: none"> ■ महत्त्व र प्रयोजन ■ प्रमुख कार्यकलापहरू <p>३.३ वाक्यरचना शिक्षण</p> <ul style="list-style-type: none"> ■ वाक्यरचना शिक्षणको परिचय र प्रयोजन ■ वाक्यरचना शिक्षणका प्रमुख कार्यकलापहरू <p>३.४ व्याकरण शिक्षण</p> <p>३.४.१ व्याकरण शिक्षणको औचित्य</p> <p>३.४.२ नेपाली व्याकरण शिक्षणका समस्या र समाधानका उपाय</p> <p>३.४.३ व्याकरण शिक्षणका प्रचलित विधि र तिनका उपयोगिता</p> <ul style="list-style-type: none"> ■ निगमन विधि ■ आगमन विधि ■ भाषा संसर्ग वा प्रत्यक्ष भाषा विधि ■ भाषा पाठ्यपुस्तक विधि ■ कार्यमूलक विधि
<ul style="list-style-type: none"> ■ नेपाली शिक्षणका सन्दर्भमा कक्षा व्यवस्थाको महत्त्व, कक्षा कोठाको सजावट, लघु वा सम र बृहत् वा विषम कक्षामा नेपाली शिक्षणका समस्या र सुविधा तथा तिनको कक्षा व्यवस्था, भाषिक पछ्यौटे समूहको पहिचान र सम्बद्ध भाषा शिक्षण कार्यकलापहरूको रूपरेखा बताउन ■ निराकरणात्मक शिक्षणको परिचय सहित यसका शिक्षण प्रयोजन, त्रुटिपहिचान प्रक्रिया, शिक्षण प्रक्रिया र शिक्षणक्रम निर्धारण गर्न । 	<p>एकाइ चार : कक्षाव्यवस्था र निराकरणात्मक शिक्षण (६)</p> <p>४.१ नेपाली शिक्षण र कक्षा व्यवस्था</p> <p>४.१.१ भाषा शिक्षणमा कक्षाव्यवस्थाको महत्त्व</p> <p>४.१.२ भाषा कक्षाकोठाको सजावट</p> <p>४.१.३ लघु वा सम कक्षाको परिचय</p> <p>४.१.४ लघु वा सम कक्षाका विशेषता</p> <p>४.१.५ लघु वा सम कक्षामा नेपाली शिक्षण गर्दा आइपर्ने समस्याहरू</p> <p>४.२ बृहत् वा विषम कक्षा</p> <p>४.२.१ बृहत् वा विषम कक्षाको परिचय</p> <p>४.२.२ बृहत् वा विषम कक्षाका विशेषता</p> <p>४.२.३ बृहत् वा विषम कक्षामा नेपाली शिक्षण गर्दा आइपर्ने समस्याहरू</p> <p>४.२.४ बृहत् वा विषम कक्षा वर्गीकरणका आधारहरू</p> <p>४.३ भाषिक पछ्यौटे समूहको पहिचान र भाषा शिक्षण कार्यकलाप</p> <p>४.४ निराकरणात्मक शिक्षण</p> <ul style="list-style-type: none"> ■ निराकरणात्मक शिक्षणको परिचय ■ निराकरणात्मक शिक्षणको प्रयोजन ■ निराकरणात्मक शिक्षणका उपायहरू

<ul style="list-style-type: none"> ■ नेपाली भाषा शिक्षणका सन्दर्भमा प्रयोग गर्न सकिने विविध शिक्षण सामग्रीहरूको प्रकारगत परिचय दिन ■ नेपाली शिक्षणमा उपयोग गर्न सकिने विविध भाषिक खेल, भाषा प्रयोग शाला, कार्यक्रमबद्ध सिकाइ र कम्प्युटर जस्ता नवीन शिक्षण प्रविधिहरूको उपयोग सन्दर्भ, सम्भाव्यता र उपयोगिताको लेखाजोखा गर्न । 	<p>एकाइ पाँच : शिक्षण सामग्री र विविध शिक्षण प्रविधिहरू (१०)</p> <p>५.१ नेपाली शिक्षणमा प्रयोग गर्न सकिने शिक्षण सामग्रीका सामान्य प्रकार</p> <ul style="list-style-type: none"> ■ मौखिक सामग्री ■ दृश्य सामग्री ■ श्रव्य सामग्री ■ श्रव्यदृश्य सामग्री ■ स्पर्श सामग्री <p>५.२ नेपाली शिक्षणमा उपयोग गर्न सकिने नवीन शिक्षण प्रविधिको परिचय</p> <p>५.२.१ कम्प्युटर प्रविधिको परिचय र प्रयोग</p> <p>५.२.२ मोबाइलको सकारात्मक उपयोग</p> <p>५.२.३ टिम्स ,जुम र गुगल मिटको प्रयोग</p> <p>५.२.४ विविध भाषिक खेल</p> <ul style="list-style-type: none"> ■ ड्रिल ■ शब्दजाल ■ कोठे पद ■ अन्ताक्षरी ■ चिट्ठा <p>५.२.५ भाषा प्रयोगशाला</p> <ul style="list-style-type: none"> ■ भाषा प्रयोगशालाको परिचय ■ भाषा प्रयोगशालाका प्रकार ■ भाषा प्रयोगशालाको उपयोगिता <p>५.२.६ कार्यक्रमबद्ध सिकाइ</p> <ul style="list-style-type: none"> ■ परिचय र प्रकार ■ कार्यक्रम निर्माणका तरिका ■ पाठ्यपुस्तक ■ उपयोगिता र सीमा <p>५.२.७ कम्प्युटर (सुसाङ्ख्य) प्रविधि : परिचय र उपयोगिता</p>
<ul style="list-style-type: none"> ■ अध्यापन योजनाको परिचय र प्रयोजन बताउन ■ अध्यापन योजनाका प्रकार र ढाँचा उल्लेख गर्न ■ विभिन्न शिक्षणीय प्रयोजनले कार्य योजना, एकाइ योजना, दैनिक पाठ योजना, लघु पाठ योजना, दैनिक अध्यापन योजना र लघु दैनिक अध्यापन योजना निर्माण गर्न ■ लघु दैनिक अध्यापन योजना निर्माण गरी लघु अध्यापन अभ्यासमा सरिक हुन । 	<p>एकाइ छ : अध्यापन योजना (६)</p> <p>६.१ अध्यापन योजनाको परिचय र प्रयोजन</p> <p>६.२ अध्यापन योजनाका प्रकार र ढाँचा</p> <ul style="list-style-type: none"> ■ कार्ययोजना ■ एकाइ योजना ■ दैनिक अध्यापन योजना र लघु दैनिक अध्यापन योजना <p>६.३ विभिन्न प्रयोजनले कार्य योजना, एकाइ योजना, दैनिक पाठ योजना, लघु पाठयोजना र दैनिक अध्यापन योजना निर्माण अभ्यास र प्रयोग</p>

४. शिक्षण प्रविधि

यस पाठ्यांशको अध्ययन अध्यापनका क्रममा प्रयोग हुने शिक्षण प्रविधिलाई दुई भागमा वर्गीकरण गरिएको छ । अधिकांश पाठ्यवस्तुहरू अध्यापन गर्न प्रयोग गरिने शिक्षण प्रविधि साधारण शिक्षण प्रविधिमा राखिएका छन् भने कुनै निश्चित एकाइअन्तर्गतका पाठ्यवस्तु अध्यापन गर्न प्रयोग गरिने शिक्षण प्रविधिलाई विशिष्ट शिक्षण प्रविधिअन्तर्गत राखिएको छ ।

४.१ साधारण शिक्षण प्रविधि

प्रत्येक एकाइमा आवश्यकताअनुसार व्याख्यान, प्रश्नोत्तर, छलफल तथा प्रस्तुतीकरण विधिको उपयोग गरिने छ । एकाइको प्रकृतिअनुरूप पाठ्यपुस्तक, सहायक पुस्तक, सन्दर्भ पुस्तक, पाठपत्र, तालिका र आरेखहरूको उपयोग गरिनेछ ।

४.२ विशिष्ट शिक्षण प्रविधि

- एकाइ एकमा सैद्धान्तिक सामग्रीको विश्लेषणका लागि व्याख्यान र छलफल विधिको उपयोग गरिनेछ ।
- एकाइ दुईमा व्याख्यान, छलफल र प्रस्तुतीकरण विधिको उपयोग गरिनेछ ।
- एकाइ तिनमा व्याख्यान, छलफल र प्रस्तुतीकरण विधि अवलम्बन गरिनेछ ।
- एकाइ चारमा व्यक्तिगत र सामूहिक रूपमा कार्यपत्र लेखन र कक्षा प्रस्तुति गर्न लगाइनेछ ।
- एकाइ पाँचमा व्याख्यानका अतिरिक्त सामूहिक कार्यपत्र लेखन र प्रस्तुति गर्न लगाइनेछ ।
- एकाइ छमा कार्ययोजना, एकाइ योजना र पाठयोजना निर्माण गर्न लगाई कक्षामा प्रस्तुत गर्न लगाइनेछ ।

५. मूल्याङ्कन प्रक्रिया

यस पाठ्यांशको मूल्याङ्कन प्रक्रिया दुई प्रकृतिको हुनेछ :

(१) आन्तरिक मूल्याङ्कन

(२) बाह्य मूल्याङ्कन

(१) आन्तरिक मूल्याङ्कन

आन्तरिक मूल्याङ्कनका लागि ४०% अङ्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि निर्दिष्ट प्रायोगिक कार्यअन्तर्गत रही विषय शिक्षकले निम्न आधारहरू अवलम्बन गर्नुपर्ने छ :

- (क) उपस्थिति - ५ अङ्क
- (ख) शिक्षण सिकाइमा सहभागिता - ५ अङ्क
- (ग) पहिलो आन्तरिक परीक्षा - १० अङ्क
- (घ) दोस्रो आन्तरिक परीक्षा - १० अङ्क
- (ङ) तेस्रो आन्तरिक परीक्षा - १० अङ्क

पहिलो आन्तरिक परीक्षाका लागि विषय शिक्षकले निम्नलिखित कार्यहरू गर्न लगाउने छन्:

अध्ययनपत्र लेखन, पुस्तक समीक्षा, लेख पुनरावलोकन, कुनै विषय शीर्षक केन्द्रित अध्ययन पत्र तयारी, आन्तरिक परीक्षा, एकाइ परीक्षा, ज्ञान/प्रतिभा परीक्षण आदि ।

दोस्रो आन्तरिक परीक्षाका लागि विषय शिक्षकले निम्नलिखित कार्यहरू गर्न लगाउने छन् :

परियोजना कार्य, अवस्था/घटना अध्ययन, गोष्ठी, क्षेत्रकार्य, व्यक्तिगत वा समूहगत प्रतिवेदन लेखन, द्वितीय स्रोत सामग्रीमा आधारित अध्ययनपत्र लेखन, पूर्वाध्ययन, पुनरावलोकन र अभिलेखीकरण आदि ।

तेस्रो आन्तरिक परीक्षाका लागि आन्तरिक सुधार परीक्षाका रूपमा ६० पूर्णाङ्कको परीक्षा लिई त्यसलाई १० अङ्कमा रूपान्तर गरिनेछ ।

उपर्युक्त पहिलो, दोस्रो, तेस्रो आन्तरिक परीक्षा मध्ये दुईवटा लिखित परीक्षामा विद्यार्थीहरू अनिवार्य रूपमा समावेश हुनुपर्नेछ ।

२. बाह्य मूल्याङ्कन

बाह्य मूल्याङ्कनका लागि ६०% अङ्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि त्रि.वि. शिक्षाशास्त्र सङ्काय, डीनको कार्यालयद्वारा सत्रान्तमा परीक्षा लिइनेछ । सो परीक्षामा सोधिने प्रश्नको प्रकृति, ढाँचा र त्यसको अङ्कभार निम्नानुसार हुनेछ :

प्रश्नको प्रकृति	सोधिने प्रश्न सङ्ख्या	उत्तर दिनुपर्ने प्रश्न सङ्ख्या	प्रतिप्रश्न छुट्याइएको अङ्क	पूर्णाङ्क
समूह 'क' : बहुवैकल्पिक प्रश्न	१०	१०	१	१०
समूह 'ख' : छोटो उत्तर आउने प्रश्न	६ (कुनै दुईवटा प्रश्नमा अथवा)	६	५	३०
समूह 'ग' : लामो उत्तर आउने प्रश्न	२ (कुनै एउटा प्रश्नमा अथवा)	२	१०	२०

उपस्थिति र कक्षा सहभागिता

- (क) सेमेस्टर प्रणालीमा ८० प्रतिशत उपस्थिति अनिवार्य हुनेछ । ९० प्रतिशतसम्म उपस्थिति हुने विद्यार्थीलाई ४ अङ्क र ९० भन्दा माथि उपस्थित हुने विद्यार्थीलाई ५ अङ्क प्रदान गरिनेछ ।
- (ख) कक्षा सहभागिताको ५ अङ्क मध्ये सम्बन्धित विषय शिक्षकले विद्यार्थीको कक्षा कार्यकलापको मूल्याङ्कन गरी अङ्क प्रदान गर्नेछन् ।

६. सिफारिस गरिएका पाठ्यपुस्तक तथा सन्दर्भ सामग्रीहरू

अधिकारी, हेमाङ्गराज (२०६७), नेपाली भाषाशिक्षण, काठमाडौं : विद्यार्थी पुस्तक भण्डार

अधिकारी, हेमाङ्गराज (२०६७), भाषाशिक्षण : केही परिप्रेक्ष्य तथा पद्धति, काठमाडौं : विार्थी पुस्तक भण्डार ।

अधिकारी, हेमाङ्गराज र केदारप्रसाद शर्मा (२०५६), प्रारम्भिक नेपाली शिक्षण, काठमाडौं : विद्यार्थी पुस्तक भण्डार

एलेन, जे.बी. र एस. पिट कर्डर (सन् १९७८), एडिनबरा कोर्स इन अप्लाइड लिङ्ग्विस्टिक्स भोल्युम ३-४, लन्डन : अक्सफोर्ड युनिभर्सिटी प्रेस ।

एल्स, थियो भान र अन्य (सन् १९८४), अप्लाइड लिङ्ग्विस्टिक्स एन्ड लर्निङ एन्ड टिचिङ फरेन ल्याङ्ग्वेज, लन्डन : एडवार्ड आर्नोल्ड

डुले, बर्ट क्र्यासन (सन् १९८२), ल्याङ्ग्वेज, न्युयोर्क : अक्सफोर्ड युनिभर्सिटी प्रेस ।

ढकाल, शान्ति प्रसाद (२०६२), नेपाली भाषा शिक्षण : परिचय र प्रयोग, काठमाडौं : मनकामना बुक्स एन्ड स्टेसनरी ।

ढुङ्गेल, भोजराज र दुर्गाप्रसाद दाहाल (२०६७), नेपाली भाषाशिक्षण, काठमाडौं : एम.के. पब्लिसर्स एन्ड डिस्ट्रिब्युटर्स

नुनन, डेभिड (सन् १९९८), ल्याङ्ग्वेज टिचिङ मेथोडोलोजी, न्युयोर्क : प्रेन्टिस हल

नेपाल राष्ट्रिय शिक्षा आयोग (सन् १९५५), *नेपालमा शिक्षा*, काठमाडौं : कलेज अफ एजुकेसन ।

पाण्डेय, राम शकल (सन् १९७६), *हिन्दी शिक्षण*, आगरा : विनोद पुस्तक भण्डार ।

पेनी, आर. (सन् १९९६), *अ कोर्स इन ल्याङ्ग्वेज टिचिङ*, क्याम्ब्रिज : क्याम्ब्रिज युनिभर्सिटी प्रेस ।

पौडेल, माधवप्रसाद (२०७०), *भाषा पाठ्यक्रम, पाठ्यपुस्तक तथा शिक्षण पद्धति*, काठमाडौं : विद्यार्थी पुस्तक भण्डार

भट्टराई, रामप्रसाद (२०५५), नेपाली भाषाशिक्षणमा भाषिक सिपको मूल्याङ्कन , भक्तपुर : विश्वविद्यालय अनुदान आयोग

भट्टराई, रामप्रसाद (२०७०), *'निम्न माध्यमिक तह पूरा गरेका विद्यार्थीहरूको आधारभूत नेपाली शब्दावलीको अध्ययन'*, विद्यावारिधि शोधप्रबन्ध, त्रिभुवन विश्वविद्यालय, शिक्षाशास्त्र सङ्काय, डिनको कार्यालय, कीर्तिपुर ।

भट्टराई, रामप्रसाद र अन्य (२०७४), *नेपाली भाषाशिक्षण*, काठमाडौं : शुभकामना प्रकाशन ।

भट्टराई , रामप्रसाद (२०७९) , *सान्दर्भिक नेपाली भाषाशिक्षण* , कीर्तिपुर : इन्टेलेक्चुअल बुक प्यालेस

मङ्गल, (श्रीमती) उमा (सन् २००३), *हिन्दी शिक्षण*, नई दिल्ली : आर्क बुक डिपो ।

रबर्ट, ल्याडो (सन् १९६४), *ल्याङ्ग्वेज टिचिङ : अ साइन्टिफिक एप्रोच*, न्युयोर्क : म्याग्रहिल ।

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शर्मा, गोपीनाथ (सन् १९८०), *स्कुल करिकुलम इन नेपाल*, काठमाडौं : हेम कुमारी शर्मा ।

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स्टर्न, एच.एच. (सन् १९८३), *फन्डामेन्टल कन्सेप्ट अफ ल्याङ्ग्वेज टिचिङ*, अक्सफोर्ड : अक्सफोर्ड युनिभर्सिटी प्रेस ।

स्टर्न, एच.एच. (सन् १९९२), *इस्युज एन्ड अप्सन्स इन ल्याङ्ग्वेज टिचिङ*, अक्सफोर्ड : अक्सफोर्ड युनिभर्सिटी प्रेस ।

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ह्युजेज, अर्थर (सन् १९८९), *टेस्टिङ फर ल्याङ्ग्वेज टिचर*, न्युयोर्क : क्याम्ब्रिज युनिभर्सिटी प्रेस ।

नेपा.शि. ५३७: भाषिक अनुसन्धान विधि

क्र.आ. : ३

पाठ्यांश सङ्ख्या : नेपा.शि. ५३७

प्रतिहप्ता पाठघन्टी : ३

पाठ्यांश प्रकृति : सैद्धान्तिक

जम्मा पाठघन्टी : ४८

तह : एम. एड.

सेमेस्टर : तेस्रो

१. पाठ्यांश परिचय

यो पाठ्यांश शिक्षाशास्त्र स्नातकोत्तर (एम. एड) कार्यक्रमअन्तर्गत सेमेस्टर प्रणालीमा आधारित नेपाली शिक्षा विषयमा विशिष्टीकरण गर्न चाहने विद्यार्थीहरूका लागि तयार पारिएको हो । यस पाठ्यांशमा भाषिक अनुसन्धान सम्बद्ध सैद्धान्तिक र व्यावहारिक पक्षको अध्ययन गराउने अपेक्षा राखिएको छ ।

२. साधारण उद्देश्य

यस पाठ्यांशका साधारण उद्देश्य निम्नानुसार रहेका छन् :

- भाषिक अनुसन्धानको परिचय दिन ,
- भाषिक अनुसन्धानसँग सम्बद्ध विविध पक्षसँग परिचित तुल्याउन,
- भाषिक अनुसन्धानका बहुपक्षीय विषयक्षेत्रहरू पहिल्याउन सक्ने सिपको विकास गराउन ,
- भाषिक अनुसन्धानका सामान्य तथा विशिष्ट विधिहरूको परिचय दिई अनुसन्धानमा तिनको प्रयोग क्षमताको विकास गर्न सक्षम बनाउन ,
- तथ्य सङ्कलनका लागि नमुना छनोट, उपकरण निर्माण र तिनको मानकीकरण गर्ने सिप अभिवृद्धि गर्न
- अनुसन्धानका लागि सामान्यतः साङ्ख्यिकीको प्रयोगको ज्ञान र क्षमता अभिवृद्धि गराउन ,
- भाषिक अनुसन्धानको प्रयोजनका लागि अनुसन्धान प्रस्ताव तथा प्रतिवेदनलेखन कार्यमा सक्षम तुल्याउन

३. विशिष्ट उद्देश्य तथा पाठ्यविषय

विशिष्ट उद्देश्य	पाठ्यविषय
<ul style="list-style-type: none"> • भाषिक अनुसन्धानको परिचय दिन • भाषिक अनुसन्धानको स्वरूप र प्रकृति प्रस्ट्याउन • भाषिक अनुसन्धानको परिभाषा बताउन • भाषिक अनुसन्धानका प्रयोजन र उद्देश्य बताउन • भाषिक अनुसन्धानका प्रकारहरू बताउन, • भाषिक अनुसन्धानको विशेषताहरू उल्लेख गर्न 	<p>एकाइ एक : भाषिक अनुसन्धानको परिचय (५)</p> <p>१.१ भाषिक अनुसन्धानको परिचय</p> <p>१.२ भाषिक अनुसन्धानको परिभाषा</p> <p>१.३. भाषिक अनुसन्धानका विशेषताहरू</p> <p>१.४ भाषिक अनुसन्धानका प्रकारहरू</p>
<ul style="list-style-type: none"> • नेपाली भाषा अनुसन्धानको परिचय दिन • नेपाली भाषा सम्बन्धी अनुसन्धानको स्थिति पहिल्याउन र मूल्याङ्कन गर्न • नेपाली भाषा शिक्षणसँग सम्बद्ध अनुसन्धानको स्थिति पहिचान गर्न • नेपाली भाषा शिक्षण सम्बन्धी अनुसन्धानको स्थिति पहिल्याउन र मूल्याङ्कन गर्न • अनुसन्धेय समस्या पहिचानका लागि नेपाली भाषा, राष्ट्रिय भाषा तथा भाषा शिक्षणसँग सम्बन्ध क्षेत्रको पहिचान गर्न, • नेपाली भाषा पाठ्यक्रम सम्बन्धी अनुसन्धानको स्थिति पहिल्याउन • नेपाली भाषापाठ्यपुस्तक सम्बन्धी अनुसन्धानसम्बन्धी स्थिति पहिल्याउन • नेपाली भाषापाठ्यपुस्तक सम्बन्धी विविध पक्षको अनुसन्धान गर्न 	<p>एकाइ दुई : नेपाली भाषा र भाषाशिक्षणसम्बन्धी अनुसन्धानको स्थिति (५)</p> <p>२.१ नेपालमा भाषासम्बन्धी अनुसन्धान र त्यसको स्थिति</p> <p>२.१.१ नेपाली भाषा अनुसन्धानको परिचय</p> <p>२.१.२ नेपाली भाषासम्बन्धी अनुसन्धानको स्थिति</p> <p>२.२ नेपाली भाषाशिक्षणसम्बन्धी अनुसन्धान र त्यसको स्थिति</p> <p>२.२.१ नेपाली भाषाशिक्षणसम्बन्धी अनुसन्धानको परिचय</p> <p>२.२.२ नेपाली भाषाशिक्षण सम्बन्धी अनुसन्धानको स्थिति र मूल्याङ्कन</p> <p>२.३ अनुसन्धेय समस्या पहिचानका लागि नेपाली भाषा, राष्ट्र भाषा तथा भाषाशिक्षणसँग सम्बद्ध क्षेत्रहरूको पहिचान</p> <p>२.३.१ नेपाली भाषा र नेपालका भाषाहरूको अध्ययन (परिचय, स्वरूप र व्यतिरेकी विश्लेषण)</p> <p>२.३.२ नेपाली भाषा र स्थानीय भेदहरूको अध्ययन</p> <p>२.३.३ नेपालका विभिन्न भाषाभाषीहरूमा पाइने त्रुटिहरूको पहिचान</p> <p>२.४ नेपाली भाषा पाठ्यक्रम सम्बन्धी अनुसन्धान र त्यसको स्थिति</p>

	<p>२.५ नेपाली भाषा पाठ्यपुस्तकसम्बन्धी अनुसन्धान र त्यसको स्थिति</p> <p>२.६ शब्दभण्डारको अध्ययन</p> <p>२.७ व्याकरण तथा साहित्य शिक्षणको अध्ययन</p> <p>२.८ भाषिक क्षमता</p> <p>२.९ भाषिक उपलब्धि तथा मूल्याङ्कन</p> <p>२.१० शिक्षण विधि र क्रियाकलाप</p> <p>२.११ मातृभाषाका पाठ्यपुस्तक तथा पाठ्यसामग्रीको अध्ययन</p> <p>२.१२ समस्या पहिचानका लागि सहयोगी सामग्री</p>
<ul style="list-style-type: none"> • वर्णनात्मक विधिको परिचय दिई त्यसमा आधारित अनुसन्धान कार्य गर्न • सर्वेक्षण विधि र क्षेत्रीय अध्ययन विधिको परिचय, तिनका प्रकार, गुण / विशेषता र चरण बताई अनुसन्धान कार्य गर्न • भाषा प्रयोगशाला, तुलनात्मक र क्रियात्मक अनुसन्धानको परिचय, विशेषता र चरण पहिचान गरी अनुसन्धानमा उपयोग गर्न । 	<p>एकाइ तिन : भाषिक अनुसन्धानका सामान्य विधिहरू (६)</p> <p>३.१ वर्णनात्मक विधि</p> <p>३.१.१ परिचय</p> <p>३.१.२ विशेषता</p> <p>३.१.३ चरणहरू</p> <p>३.२ सर्वेक्षण विधि</p> <p>३.२.१ परिचय</p> <p>३.२.२ प्रकार</p> <p>३.२.३ विशेषता</p> <p>३.२.४ चरणहरू</p> <p>३.३ क्षेत्रीय अध्ययन विधि</p> <p>३.३.१ परिचय</p> <p>३.३.२ प्रकार</p> <p>३.३.३ विशेषता</p> <p>३.३.४ चरणहरू</p> <p>३.४ प्रयोगात्मक विधि</p> <p>३.४.१ परिचय</p> <p>३.४.२ विशेषता</p> <p>३.४.३ चरणहरू</p> <p>३.५ भाषा प्रयोगशाला विधि</p> <p>३.५.१ परिचय</p> <p>३.५.२ चरणहरू</p> <p>३.५.३ विशेषता</p> <p>३.६ तुलनात्मक विधि</p> <p>३.६.१ परिचय</p> <p>३.६.२ चरणहरू</p> <p>३.६.३ विशेषता</p> <p>३.७ क्रियात्मक अनुसन्धान विधि</p> <p>३.७.१ परिचय</p> <p>३.७.२ विशेषता</p> <p>३.७.३ चरणहरू</p>
<ul style="list-style-type: none"> • अन्तः प्रेक्षात्मक विधिको परिचय दिई स्वरूप बताउन 	<p>एकाइ चार : भाषिक अनुसन्धानका विशेष विधिहरू (५)</p>

<ul style="list-style-type: none"> जातिभाषिक अध्ययन विधिको परिचय दिई त्यसको उपयोग गर्न 	<p>४.१ अन्तः प्रेक्षात्मक विधिको परिचय</p> <ul style="list-style-type: none"> ४.१.१ साहचर्य ४.१.२ दैनिकी अध्ययन ४.१.३ पश्चावलोकन <p>४.२ जातिभाषिक अध्ययन विधि</p> <ul style="list-style-type: none"> ४.२.१ जातिभाषिक अध्ययन विधिको परिचय ४.२.२ जातिभाषिक अध्ययन विधिका विशेषताहरू ४.२.३ जातिभाषिक अध्ययनका प्रयुक्त अध्ययन विधिहरू <ul style="list-style-type: none"> वर्णनात्मक ऐतिहासिक तुलनात्मक ४.२.४ विद्यालयका कक्षामा जातिभाषिक अवस्था
<ul style="list-style-type: none"> अनुसन्धानमा तथ्याङ्कको महत्त्व बताउन तथ्याङ्क सङ्कलनमा स्रोतहरूको पहिचान गर्न जनसङ्ख्या र नमुना छनोटको परिचय दिई तिनको आवश्यकता बताउन नमुना छनोटको प्रकार बताउन परिमाणात्मक तथा गुणात्मक अनुसन्धानका सन्दर्भमा नमुना तथ्याङ्क सङ्कलनका लागि प्रश्नावली, अन्तर्वार्ता, मतावली, रुजूसूचीको परिचय दिई तिनको ढाँचा तयार गर्न तथ्याङ्क सङ्कलनका उपकरण/साधनहरूको परिचय दिन, तथ्याङ्क सङ्कलनमा आवश्यक उपकरणको मानकीकरण गर्न । 	<p>एकाइ पाँच : तथ्याङ्क सङ्कलन र उपकरण (५)</p> <p>५.१ अनुसन्धान तथ्य र तथ्याङ्क</p> <p>५.२ तथ्याङ्क सङ्कलनका स्रोतहरू</p> <ul style="list-style-type: none"> ५.२.१ प्राथमिक स्रोत ५.२.२ द्वितीय स्रोत <p>५.३ जनसङ्ख्या तथा नमुना छनोट</p> <ul style="list-style-type: none"> ५.३.१ जनसङ्ख्या ५.३.२ नमुना छनोट ५.३.३ नमुना छनोटको आवश्यकता ५.३.४ गुणात्मक अनुसन्धानमा नमुना छनोट ५.३.५ परिमाणात्मक अनुसन्धानमा नमुना छनोट ५.३.६ नमुना छनोटको प्रकार <ul style="list-style-type: none"> सम्भावना नमुना छनोट र यसका प्रकारहरू असम्भावना नमुना छनोट र यसका प्रकारहरू <p>५.४ तथ्याङ्क सङ्कलनका उपकरण/साधन</p> <ul style="list-style-type: none"> ५.४.१ अन्तर्वार्ता ५.४.२ प्रश्नावली ५.४.३ मतावली ५.४.४ रुजूसूची ५.४.५ अवलोकन ५.४.६ घटनावृत्त अभिलेख ५.४.७ रेटिड स्केल ५.४.८ उपकरणको मानकीकरण
<ul style="list-style-type: none"> भाषिक अनुसन्धानमा साङ्ख्यिकीको परिचय दिन तथ्य/तथ्याङ्कको प्रस्तुतीकरणमा तालिकीकरणको परिचय दिई 	<p>एकाइ छ : भाषिक अनुसन्धानमा साङ्ख्यिकीको प्रयोग (८)</p>

<p>प्रयोग गर्न</p> <ul style="list-style-type: none"> • तथ्याङ्कको रेखाचित्रात्मक प्रस्तुतीकरणमा आरेख, आलेखको प्रयोग गर्न • चलको परिचय दिई त्यसका प्रकार बताउन • तथ्य/तथ्याङ्कको विश्लेषणका लागि आवश्यकताअनुसार प्रतिशत, औसत, मध्यमान मानक विचलन र टी-टेस्टको उपयोग गरी तथ्याङ्क विश्लेषण गर्न 	<p>६.१ साङ्ख्यिकीको परिचय</p> <p>६.२ साङ्ख्यिकीका कार्यहरू *</p> <p>६.३ भाषिक अनुसन्धानमा साङ्ख्यिकीको महत्त्व*</p> <p>६.४ तथ्य/तथ्याङ्कको प्रस्तुतीकरण</p> <p>६.४.१ तालिकीकरण</p> <p>६.४.२ तथ्याङ्कको रेखाचित्रात्मक प्रस्तुतीकरण</p> <ul style="list-style-type: none"> • आरेख र आलेख <p>६.५ चल</p> <p>६.६ प्रतिशत गणना</p> <p>६.७ औसत निर्धारण</p> <p>६.८ मध्यमान</p> <p>६.९ मानक विचलन</p> <p>६.१० टी-परीक्षण</p>
<ul style="list-style-type: none"> • अनुसन्धान/शोध प्रस्तावको परिचय दिन • अनुसन्धान प्रस्तावको आवश्यकता बताउन • अनुसन्धान/शोध प्रस्तावका ढाँचा तथा अङ्गहरूको परिचय दिन • नमुना अनुसन्धान प्रस्ताव तयार पार्न • कुनै समस्यामा शोधप्रस्ताव तयार गरी प्रस्तुत गर्न, 	<p>एकाइ सात : शोधप्रस्तावको ढाँचा (५)</p> <p>७.१ अनुसन्धान प्रस्ताव / शोधप्रस्ताव</p> <p>७.१.१ शैक्षिक अनुसन्धान कार्यको मौलिक उद्देश्य</p> <p>७.१.२ शोधको क्षेत्र र समस्या पहिचान</p> <p>७.२ शोधप्रस्तावका अङ्गहरू</p> <p>पृष्ठभूमि/परिचय, समस्या, उद्देश्य, प्राक्कल्पना, पूर्वकार्यको समीक्षा, अनुसन्धान अन्तराल, अध्ययनको औचित्य, अनुसन्धान विधि, अध्ययनको परिसीमा, अध्ययनको रूपरेखा, सन्दर्भकृति सूची</p> <p>७.३ शोधप्रस्ताव लेखन र प्रस्तुति</p>
<ul style="list-style-type: none"> • अनुसन्धान प्रतिवेदनका अङ्गहरूको परिचय दिई स्वरूप बताउन • अनुसन्धानको आदि, मध्य र अन्त्यभागमा अन्तर्निहित कुराहरू पहिचान गरी अनुसन्धान प्रतिवेदन तयार पार्न 	<p>एकाइ आठ : शोधप्रतिवेदनका अङ्गहरू (५)</p> <p>८.१ अनुसन्धान / शोध प्रतिवेदन लेखनका चरणहरू</p> <p>८.२ अनुसन्धान / शोध प्रतिवेदनका अङ्गहरू</p> <p>८.२.१ आदिभाग / पूर्वभाग</p> <ul style="list-style-type: none"> • मुखपृष्ठ • प्रतिबद्धता • शोधनिर्देशकको सिफारिस • स्वीकृतिपत्र • कृतज्ञताज्ञापन • शोधसार • विषयसूची • तालिका, चित्र, नक्सासूची • चिह्न सूची • सङ्क्षिप्त रूपको सूची • पारिभाषिक तथा प्राविधिक पदावली

	<p>८.२.२ मध्यभाग / मूलभाग</p> <ul style="list-style-type: none"> ● अध्याय र शीर्षकको ढाँचा ● अनुच्छेद विभाजन र विन्यास ● उद्धरणका प्रकार र प्रयोग ● सन्दर्भाङ्कन / सन्दर्भ सङ्केत <ul style="list-style-type: none"> - लेखक पृष्ठ पद्धतिमा सन्दर्भ सङ्केत - लेखक मिति पद्धतिमा सन्दर्भ सङ्केत ● पादटिप्पणीका प्रकार र प्रयोग ● सन्दर्भसूची <ul style="list-style-type: none"> - सन्दर्भसूचीमा समावेश गर्नुपर्ने कुराहरू - सन्दर्भसूचीको अनुक्रममा ध्यान दिनुपर्ने कुराहरू - पादटिप्पणी र सन्दर्भसूचीमा फरक - सन्दर्भसूची तयार पार्ने मुख्य पद्धतिहरू <p>८.२.३ अन्त्य भाग / उत्तर भाग</p> <ul style="list-style-type: none"> ● परिशिष्ट ● अनुक्रमणिका ● पारिभाषिक तथा अन्य शब्दावली ● व्यक्तिवृत्त
<ul style="list-style-type: none"> ● अनुसन्धानमा प्रयुक्त भाषा प्रयोगसम्बन्धी ज्ञान र दक्षता प्राप्त गर्न ● प्रतिवेदन टङ्कनमा ध्यान दिनुपर्ने नियमहरूको पालना गर्दै टङ्कित प्रतिवेदन तयार पार्न ● उपयुक्त तथा निर्धारित प्रावधानका आधारमा आवरण पृष्ठ र गाताबन्दी निर्माण गर्न । 	<p>एकाइ नौ : अनुसन्धानमा प्रयुक्त भाषा र प्रतिवेदन टङ्कन (४)</p> <p>९.१ अनुसन्धानमा प्रयुक्त भाषा</p> <p>९.१.१ वाक्यविन्यास</p> <p>९.१.२ आदरार्थी प्रयोग</p> <p>९.१.३ वर्णविन्यास</p> <p>९.१.४ सङ्क्षिप्त रूप</p> <p>९.१.५ परिमार्जन र संशोधन</p> <p>९.२ प्रतिवेदन टङ्कन र तयारी</p> <p>९.२.१ शब्दविभाजन</p> <p>९.२.२ अन्तरालन</p> <p>९.२.३ पृष्ठाङ्कन</p> <p>९.२.४ टङ्कित प्रतिवेदन संशोधन</p> <p>९.२.६ गाताबन्दी</p>

४. शिक्षण प्रविधि

यस पाठ्यांशको अध्ययन अध्यापनका क्रममा प्रयोग हुने शिक्षण प्रविधिलाई दुई भागमा वर्गीकरण गरिएको छ । अधिकांश पाठ्यवस्तुहरू अध्यापन गर्न प्रयोग गरिने शिक्षण प्रविधि साधारण शिक्षण प्रविधिमा राखिएका छन् भने कुनै निश्चित एकाइअन्तर्गतका पाठ्यवस्तु अध्यापन गर्न प्रयोग गरिने शिक्षण प्रविधिलाई विशिष्ट शिक्षण प्रविधि अन्तर्गत राखिएको छ ।

४.१ साधारण शिक्षणप्रविधि

प्रत्येक एकाइमा आवश्यकताअनुसार व्याख्यान, प्रश्नोत्तर, छलफल तथा प्रस्तुतीकरण विधिको उपयोग गरिने छ । एकाइको प्रकृतिअनुरूप पाठ्यपुस्तक, सहायक पुस्तक, सन्दर्भ पुस्तक, पाठपत्र, तालिका र आरेखहरूको उपयोग गरिने छ ।

४.२ विशिष्ट शिक्षणप्रविधि

- एकाइ एकमा सैद्धान्तिक सामग्रीको विश्लेषणका लागि व्याख्यान र छलफल विधिको उपयोग गरिनेछ ।
- एकाइ दुईमा व्याख्यान, छलफल र प्रस्तुतीकरण विधिको उपयोग गरिनेछ ।
- एकाइ तिन, चार, पाँच र छमा व्याख्यान, छलफल र प्रस्तुतीकरण विधि अवलम्बन गरिने छ साथै आवश्यकताअनुसार आरेख तथा तालिकाको उपयोग गरिनेछ ।
- एकाइ सातमा व्यक्तिगत र सामूहिक रूपमा शोधप्रस्ताव लेखन र प्रस्तुति गर्न लगाइनेछ ।
- एकाइ आठ र नौमा नमुना शोधप्रतिवेदन तयार गर्न लगाई प्रस्तुत गर्न लगाइनेछ ।

५. मूल्याङ्कन प्रक्रिया

यस पाठ्यांशको मूल्याङ्कन प्रक्रिया दुई प्रकृतिको हुनेछ :

(१) आन्तरिक मूल्याङ्कन

(२) बाह्य मूल्याङ्कन

(१) आन्तरिक मूल्याङ्कन

आन्तरिक मूल्याङ्कनका लागि ४०% अङ्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि निर्दिष्ट प्रायोगिक कार्यअन्तर्गत रही विषय शिक्षकले निम्न आधारहरू अवलम्बन गर्नुपर्नेछ :

(क)उपस्थिति - ५ अङ्क

(ख) शिक्षण सिकाइमा सहभागिता - ५ अङ्क

(ग) पहिलो आन्तरिक परीक्षा - १० अङ्क

(घ) दोस्रो आन्तरिक परीक्षा - १० अङ्क

(ङ) तेस्रो आन्तरिक परीक्षा - १० अङ्क

- पहिलो आन्तरिक परीक्षाका लागि विषय शिक्षकले निम्नलिखित कार्यहरू गर्न लगाउने छन्:
- अध्ययनपत्र लेखन, पुस्तक समीक्षा, लेख पुनरावलोकन, कुनै विषय शीर्षक केन्द्रित अध्ययन पत्र तयारी, आन्तरिक परीक्षा, एकाइ परीक्षा, ज्ञान/प्रतिभा परीक्षण आदि ।
- दोस्रो आन्तरिक परीक्षाका लागि विषय शिक्षकले निम्नलिखित कार्यहरू गर्न लगाउनेछन् :
- परियोजना कार्य, अवस्था/घटना अध्ययन, गोष्ठी, क्षेत्रकार्य, व्यक्तिगत वा समूहगत प्रतिवेदन लेखन, द्वितीय स्रोत सामग्रीमा आधारित अध्ययनपत्र लेखन, पूर्वाध्ययन, पुनरावलोकन र अभिलेखीकरण आदि ।
- तेस्रो आन्तरिक परीक्षाका लागि आन्तरिक सुधार परीक्षाका रूपमा ६० पूर्णाङ्कको परीक्षा लिई त्यसलाई १० अङ्कमा रुपान्तर गरिनेछ ।
- उपर्युक्त पहिलो, दोस्रो, तेस्रो आन्तरिक परीक्षा मध्ये दुईवटा लिखित परीक्षामा विद्यार्थीहरू अनिवार्य रूपमा समावेश हुनुपर्नेछ ।

२ बाहे मूल्याङ्कन

बाह्य मूल्याङ्कनका लागि ६०% अङ्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि त्रि.वि. शिक्षाशास्त्र सङ्काय, डीनको कार्यालयद्वारा सत्रान्तमा परीक्षा लिइने छ । सो परीक्षामा सोधिने प्रश्नको प्रकृति, ढाँचा र त्यसको अङ्कभार निम्नानुसार हुनेछ :

प्रश्नको प्रकृति	सोधिने प्रश्न सङ्ख्या	उत्तर दिनुपर्ने प्रश्न सङ्ख्या	प्रतिप्रश्न छुट्याइएको अङ्क	पूर्णाङ्क
समूह 'क' : बहुवैकल्पिक प्रश्न	१०	१०	१	१०
समूह 'ख' : छोटो उत्तर आउने प्रश्न	६ (कुनै दुईवटा प्रश्नमा अथवा)	६	५	३०
समूह 'ग' : लामो उत्तर आउने प्रश्न	२ (कुनै एउटा प्रश्नमा अथवा)	२	१०	२०

उपस्थिति र कक्षा सहभागिता

- (क) सेमेस्टर प्रणालीमा ८० प्रतिशत उपस्थिति अनिवार्य हुनेछ । १० प्रतिशतसम्म उपस्थिति हुने विद्यार्थीलाई ४ अङ्क र १० भन्दा माथि उपस्थित हुने विद्यार्थीलाई ५ अङ्क प्रदान गरिनेछ ।
- (ख) कक्षा सहभागिताको ५ अङ्क मध्ये सम्बन्धित विषय शिक्षकले विद्यार्थीको कक्षा कार्यकलापको मूल्याङ्कन गरी अङ्क प्रदान गर्नेछन् ।

सिफारिस गरिएका पाठ्यपुस्तक तथा सन्दर्भ सामग्री

पौडेल, राजेन्द्र प्रसाद, सिएन पण्डित (२०६८), आधुनिक अनुसन्धान पद्धति, काठमाडौं : हिमशिखर प्रकाशन ।

पौडेल, राजेन्द्रप्रसाद (२०६८), नेपाली शिक्षा : समसामयिक सन्दर्भ, काठमाडौं : हिमशिखर प्रकाशन ।

बन्धु, चूडामणि (२०६५), अनुसन्धान तथा प्रतिवेदन लेखन, काठमाडौं : रत्नपुस्तक भण्डार ।

भट्टराई, रामप्रसाद (२०७६), भाषिक अनुसन्धान विधि : परिचय र प्रयोग, काठमाडौं : शुभकामना प्रकाशन

भण्डारी, पारसमणि र रामनाथ ओझा (२०६८), भाषिक अनुसन्धान विधि, काठमाडौं : पिनाकल पब्लिकेसन ।

नेपा.शि .५३८: भाषाविज्ञानका प्रमुख सिद्धान्त

क्रे.आ. : ३

पाठ्यांश सङ्ख्या : नेपा.शि. ५३८

प्रतिहप्ता पाठघन्टी : ३

पाठ्यांश प्रकृति : सैद्धान्तिक

जम्मा पाठघन्टी : ४८

तह : एम. एड.

सेमेस्टर : तेस्रो

१. पाठ्यांश परिचय

प्रस्तुत पाठ्यांश त्रिभुवन विश्वविद्यालय, शिक्षाशास्त्र सङ्कायअन्तर्गत सेमेस्टर प्रणालीमा आधारित स्नातकोत्तर (एम. एड.) तहमा अध्ययन गर्ने विद्यार्थीहरूका लागि तयार पारिएको हो । यस पाठ्यांशबाट पूर्व र पश्चिमका प्रमुख भाषिक चिन्तन र त्यसका उपलब्धि, संरचनात्मक भाषाविज्ञान, रूपार्थपरक व्याकरण, व्यवस्थापक व्याकरण, रूपान्तरण व्याकरण र कारक व्याकरणको पृष्ठभूमि, आधारभूत मान्यता, भाषिक विश्लेषणका प्रक्रिया र पद्धति एवम् तिनका उपलब्धिसँग विद्यार्थीहरूलाई परिचित गराउने अपेक्षा गरिएको छ ।

२. साधारण उद्देश्य

यस पाठ्यांशका साधारण उद्देश्य निम्नलिखित छन् :

- भाषिक चिन्तनको पूर्वीय तथा पाश्चात्य परम्पराको जानकारी प्रदान गर्ने,
- संरचनावादी व्याकरणका विभिन्न मोड, मूलभूत अवधारणा र भाषिक विश्लेषणसँग अवगत गराउने
- रूपार्थपरक व्याकरणको पृष्ठभूमि, आधारभूत मान्यता र भाषिक विश्लेषणसँग परिचित गराउने,
- व्यवस्थापक व्याकरणको पृष्ठभूमि, मूलभूत धारणा एवम् भाषिक विश्लेषण प्रक्रियाबारे जानकारी दिने
- रूपान्तरण व्याकरणको पृष्ठभूमि, चरणविभाजन, आधारभूत मान्यता, भाषिक विश्लेषणका प्रकार र प्रक्रिया एवम् तिनका उपलब्धिको चर्चा गर्ने र
- कारक व्याकरणको पृष्ठभूमि, आधारभूत अवधारणा, भाषिक विश्लेषण प्रक्रिया र उपलब्धि प्रस्तुत गर्ने ।

३. विशिष्ट उद्देश्य तथा पाठ्यविषय

विशिष्ट उद्देश्य	पाठ्यविषय
<ul style="list-style-type: none"> • भाषिक चिन्तको पूर्वीय परम्पराको चर्चा गर्न • पूर्वीय परम्परामा वैदिक र लौकिक भाषिक चिन्तनको रूपरेखा प्रस्तुत गर्न • पाणिनि युग एवम् त्यसका पूर्ववर्ती र उत्तरवर्ती परम्पराको बयान गर्न • भाषिक चिन्तनको पाश्चात्य परम्पराको वर्णन गर्न • पाश्चात्य परम्परामा ग्रीसेली, रोमली एवम् परम्परागत अङ्ग्रेजी व्याकरणको भाषिक चिन्तन प्रस्तुत गर्न • ऐतिहासिक र तुलनात्मक भाषिक अध्ययनको उपलब्धि वर्णन गर्न • परम्परागत भाषिक चिन्तनका उपलब्धि र सीमा निर्धारण गर्न 	<p>एकाइ एक : भाषिक चिन्तनको पूर्वीय र पाश्चात्य परम्परा (८)</p> <p>१.१ भाषिक चिन्तनको पूर्वीय परम्परा</p> <p>१.१.१ भाषिक चिन्तनको पूर्वीय परम्परा</p> <ul style="list-style-type: none"> • पाणिनि पूर्वयुग • पाणिनि युग • पाणिनि उत्तर युग <p>१.१.२ पाणिनीय व्याकरणमा पद र पदार्थ</p> <p>१.२ भाषिक चिन्तनको पाश्चात्य परम्परा</p> <p>१.२.१ भाषिक चिन्तनको ग्रीसेली परम्परा</p> <p>१.२.२ भाषिक चिन्तनको रोमली परम्परा</p> <p>१.२.३ अङ्ग्रेजीको परम्परागत भाषिक चिन्तन</p>

	१.३ परम्परागत पूर्विय र पाश्चात्य भाषिक चिन्तनका उपलब्धि र सीमा
<ul style="list-style-type: none"> • संरचनात्मक भाषाविज्ञानको परिचय दिन • संरचनात्मक भाषाविज्ञानको विकास , प्रमुख मोड र तिनका उपलब्धिहरूको चर्चा गर्न • युरोपेली संरचनावादका निर्दिष्ट सम्प्रदाय र तिनका उपलब्धिको वर्णन गर्न • अमेरिकाली संरचनावादको परिचय दिई विकासक्रम बताउन • संरचनावादका आधारभूत मान्यताको वर्णन गर्न • वर्ण, रूप र वाक्य विश्लेषणका संरचनावादी पद्धति उल्लेख गर्न • संरचनावाद र भाषाशिक्षणको सम्बन्ध औल्याउन • संरचनावादका उपलब्धि र सीमा निर्धारण गर्न 	<p>एकाइ दुई : संरचनात्मक भाषाविज्ञान (८)</p> <p>२.१ संरचनात्मक भाषाविज्ञानको परिचय</p> <p>२.२ संरचनात्मक भाषाविज्ञानको विकास र मोड</p> <p>२.३ युरोपेली संरचनावादको परिचय</p> <p>२.३.१ जेनेभा सम्प्रदाय र यसका उपलब्धि</p> <p>२.३.२ प्राग सम्प्रदाय र यसका उपलब्धि</p> <p>२.३.३ कोपेनहेगन सम्प्रदाय र यसका उपलब्धि</p> <p>२.४ अमेरिकाली संरचनावादको परिचय र विकास</p> <p>२.५ संरचनावादका आधारभूत मान्यता</p> <p>२.६ भाषिक विश्लेषणको संरचनावादी पद्धति</p> <p>२.६.१ वर्ण</p> <p>२.६.२ रूप</p> <p>२.६.३ वाक्य</p> <p>२.७ संरचनावाद र भाषाशिक्षण</p> <p>२.८ संरचनावादका उपलब्धि र सीमा</p>
<ul style="list-style-type: none"> • रूपार्थपरक व्याकरणको परिचय दिन • रूपार्थपरक व्याकरणका आधारभूत मान्यता बताउन • रूपार्थमको परिचय र परिभाषा उल्लेख गर्न • रूपार्थमलाई व्याकरणिक सोपानक्रममा चिनाउन • रूपार्थपरक पद्धतिमा आधारित भई भाषिक विश्लेषण गर्न • रूपार्थपरक व्याकरण र भाषाशिक्षणको सम्बन्ध स्पष्ट पार्न • रूपार्थपरक व्याकरणका उपलब्धि र सीमा निर्धारण गर्न 	<p>एकाइ तिन : रूपार्थपरक व्याकरण (८)</p> <p>३.१ रूपार्थपरक व्याकरणको परिचय</p> <p>३.२ रूपार्थपरक व्याकरणका आधारभूत मान्यता</p> <p>३.३ रूपार्थमको परिचय र परिभाषा</p> <p>३.४ व्याकरणिक सोपानक्रम र रूपार्थम</p> <p>३.५ रूपार्थपरक पद्धतिमा भाषिक विश्लेषण</p> <p>३.६ रूपार्थपरक व्याकरण र भाषाशिक्षण</p> <p>३.७ रूपार्थपरक व्याकरणका उपलब्धि र सीमा</p>
<ul style="list-style-type: none"> • व्यवस्थापरक व्याकरणको परिचय दिन • व्यवस्थापरक व्याकरणका प्रमुख मान्यताहरूको वर्णन गर्न • व्यवस्थापरक व्याकरण र अर्थको सम्बन्ध औल्याउन • व्यवस्थापरक पद्धतिमा भाषिक विश्लेषण गर्न • व्यवस्थापरक व्याकरण र भाषाशिक्षणको सम्बन्ध प्रस्ट पार्न • व्यवस्थापरक व्याकरणका उपलब्धि र सीमा 	<p>एकाइ चार : व्यवस्थापरक व्याकरण (८)</p> <p>४.१ व्यवस्थापरक व्याकरणको परिचय</p> <p>४.२ व्यवस्थापरक व्याकरणका प्रमुख मान्यता</p> <p>४.२.१ भाषाका प्राथमिक कार्यमूलक तह</p> <p>४.२.२ भाषाका माप तथा कोटिहरू</p> <p>४.२.३ भाषाका मानहरू</p> <p>४.२.३ भाषाका कार्यमूलक घटकहरू</p>

निर्धारण गर्न	<p>४.३ व्यवस्थापरक व्याकरण र अर्थ</p> <p>४.४ व्यवस्थापरक पद्धतिमा भाषिक विश्लेषण</p> <p>४.५ व्यवस्थापरक व्याकरण र भाषाशिक्षण</p> <p>४.६ व्यवस्थापरक व्याकरणका उपलब्धि र सीमा</p>
<ul style="list-style-type: none"> • रूपान्तरण व्याकरणको पृष्ठभूमि र परिचय दिन • रूपान्तरण व्याकरणको विकासक्रमको चर्चा गर्न • रूपान्तरण व्याकरणका आधारभूत मान्यताको वर्णन गर्न • रूपान्तरणका प्रकार र प्रक्रियालाई चिनाउन • रूपान्तरण व्याकरण र भाषाशिक्षणको सम्बन्ध औल्याउन • रूपान्तरण व्याकरणका शक्ति र सीमा निर्धारण गर्न 	<p>एकाइ पाँच : रूपान्तरण व्याकरण (८)</p> <p>५.१ रूपान्तरण व्याकरणको पृष्ठभूमि र परिचय</p> <p>५.२ रूपान्तरण व्याकरणको विकासक्रम</p> <p> ५.२.१ क्लासिकल सिद्धान्त</p> <p> ५.२.२ मानक सिद्धान्त</p> <p> ५.२.३ उत्तरवर्ती सिद्धान्त</p> <p>५.३ रूपान्तरण व्याकरणका आधारभूत मान्यता</p> <p>५.४ रूपान्तरणका प्रकार र प्रक्रिया</p> <p>५.५ रूपान्तरण व्याकरण र भाषाशिक्षण</p> <p>५.६ रूपान्तरण व्याकरणका उपलब्धि र सीमा</p>
<ul style="list-style-type: none"> • कारक व्याकरणको परिचय दिन • कारक व्याकरणका प्रमुख मान्यता औल्याउन • कारकको निर्धारण गर्न • पाणिनि र फिल्मोरका कारकीय दृष्टिकोणको तुलना गर्न • चम्स्की र फिल्मोरका कारकीय मान्यता उल्लेख गर्न • कारक व्याकरणको भाषिक विश्लेषण पद्धति औल्याउन • कारक व्याकरणका उपलब्धि र सीमा ठम्याउन 	<p>एकाइ छ : कारक व्याकरण (८)</p> <p>६.१ कारक व्याकरणको परिचय</p> <p>६.२ कारक व्याकरणका प्रमुख मान्यता</p> <p>६.३ कारकको निर्धारण</p> <p>६.४ पाणिनि र फिल्मोरका कारकीय दृष्टिकोणको तुलना</p> <p>६.५ चम्स्की र फिल्मोरका कारकीय मान्यता</p> <p>६.६ कारक व्याकरणको भाषिक विश्लेषण पद्धति</p> <p>६.७ कारक व्याकरण र भाषाशिक्षण</p> <p>६.८ कारक व्याकरणका उपलब्धि र सीमा</p>

४. शिक्षण विधि : प्रत्येक एकाइमा आवश्यकताअनुसार साधारण र विशिष्ट शिक्षण प्रविधि उपयोगमा ल्याइनेछ ।

४.१ साधारण शिक्षण प्रविधि : एकाइको प्रकृतिअनुरूप पाठ्यपुस्तक, सहायक पुस्तक, सन्दर्भ पुस्तक, पाठपत्र, तालिम र आरेखका आधारमा व्याख्यान, प्रश्नोत्तर, छलफल र शिक्षक प्रस्तुतीकरण विधि अँगालिनेछ ।

४.२ विशिष्ट शिक्षण प्रविधि : प्रत्येक एकाइमा एकाइको प्रकृतिअनुरूप गृहकार्य, समूहकार्य, आवधिक कार्य, गोष्ठीपत्र तयार गरी प्रस्तुतीकरण गर्ने विधि उपयोग गरिनेछ ।

५. मूल्याङ्कन प्रक्रिया

यस पाठ्यांशको मूल्याङ्कन प्रक्रिया दुई प्रकृतिको हुनेछ :

(१) आन्तरिक मूल्याङ्कन

(२) बाह्य मूल्याङ्कन

(१) आन्तरिक मूल्याङ्कन

आन्तरिक मूल्याङ्कनका लागि ४०% अङ्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि निर्दिष्ट प्रायोगिक कार्यअन्तर्गत रही विषय शिक्षकले निम्न आधारहरू अवलम्बन गर्नुपर्ने छ :

- (क) उपस्थिति - ५ अङ्क
- (ख) शिक्षण सिकाइमा सहभागिता - ५ अङ्क
- (ग) पहिलो आन्तरिक परीक्षा - १० अङ्क
- (घ) दोस्रो आन्तरिक परीक्षा - १० अङ्क
- (ङ) तेस्रो आन्तरिक परीक्षा - १० अङ्क

पहिलो आन्तरिक परीक्षाका लागि विषय शिक्षकले निम्नलिखित कार्यहरू गर्न लगाउने छन्:

अध्ययनपत्र लेखन, पुस्तक समीक्षा, लेख पुनरावलोकन, कुनै विषय शीर्षक केन्द्रित अध्ययन पत्र तयारी, आन्तरिक परीक्षा, एकाइ परीक्षा, ज्ञानप्रतिभा परीक्षण आदि ।

दोस्रो आन्तरिक परीक्षाका लागि विषय शिक्षकले निम्नलिखित कार्यहरू गर्न लगाउने छन् :

परियोजना कार्य, अवस्था तथा घटना अध्ययन, गोष्ठी, क्षेत्रकार्य, व्यक्तिगत वा समूहगत प्रतिवेदन लेखन, द्वितीय स्रोत सामग्रीमा आधारित अध्ययनपत्र लेखन, पूर्वाध्ययन, पुनरावलोकन र अभिलेखीकरण आदि ।

तेस्रो आन्तरिक परीक्षाका लागि आन्तरिक सुधार परीक्षाका रूपमा ६० पूर्णाङ्कको परीक्षा लिई त्यसलाई १० अङ्कमा रूपान्तर गरिनेछ ।

उपर्युक्त पहिलो, दोस्रो, तेस्रो आन्तरिक परीक्षा मध्ये दुईवटा लिखित परीक्षामा विद्यार्थीहरू अनिवार्य रूपमा समावेश हुनुपर्नेछ ।

२. बाह्य मूल्याङ्कन

बाह्य मूल्याङ्कनका लागि ६०% अङ्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि त्रि.वि. शिक्षाशास्त्र सङ्काय, डीनको कार्यालयद्वारा सत्रान्तमा परीक्षा लिइनेछ । सो परीक्षामा सोधिने प्रश्नको प्रकृति, ढाँचा र त्यसको अङ्कभार निम्नानुसार हुनेछ :

प्रश्नको प्रकृति	सोधिने प्रश्न सङ्ख्या	उत्तर दिनुपर्ने प्रश्न सङ्ख्या	प्रतिप्रश्न छुट्याइएको अङ्क	पूर्णाङ्क
समूह 'क' : बहुवैकल्पिक प्रश्न	१०	१०	१	१०
समूह 'ख' : छोटो उत्तर आउने प्रश्न	६ (कुनै दुईवटा प्रश्नमा अथवा)	६	५	३०
समूह 'ग' : लामो उत्तर आउने प्रश्न	२ (कुनै एउटा प्रश्नमा अथवा)	२	१०	२०

-) सेमेस्टर प्रणालीमा ८० प्रतिशत उपस्थिति अनिवार्य हुनेछ । ९० प्रतिशतसम्म उपस्थिति हुने विद्यार्थीलाई ४ अङ्क र ९० भन्दा माथि उपस्थित हुने विद्यार्थीलाई ५ अङ्क प्रदान गरिनेछ ।
- (ख) कक्षा सहभागिताको ५ अङ्क मध्ये सम्बन्धित विषय शिक्षकले विद्यार्थीको कक्षा कार्यकलापको मूल्याङ्कन गरी अङ्क प्रदान गर्नेछन् ।

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क्रे.आ. : ३

पाठ्यांश प्रकृति : सैद्धान्तिक

तह : एम.एड.

प्रतिहप्ता पाठघन्टी : ३

सेमेस्टर : तेस्रो

जम्मा पाठघन्टी : ४८

१. पाठ्यांश परिचय

प्रस्तुत पाठ्यांश शिक्षाशास्त्र सङ्कायअन्तर्गत सेमेस्टर प्रणालीमा आधारित 'नेपाली शिक्षा' विषय लिई स्नातकोत्तर (एम.एड.) तहमा विशिष्टीकरण गर्न चाहने विद्यार्थीहरूका लागि तयार गरिएको हो । यस पाठ्यांशमा नेपाली भाषा शिक्षणका सन्दर्भमा भाषिक सिप विकासका दृष्टिले विधा शिक्षण तथा आस्वादनका दृष्टिले साहित्यिक विधा शिक्षण प्रविधिसम्बन्धी विविध पक्षहरूको सैद्धान्तिक र प्रायोगिक सुझाव विकास गर्ने खालका भाषिक विधा र साहित्यिक विधा शिक्षणसँग सम्बन्धित सामग्रीहरू राखिएको छ ।

२. साधारण उद्देश्य

यस पाठ्यांशको अध्ययनपछि विद्यार्थीहरू निम्नलिखित उद्देश्यहरू हासिल गर्न सक्षम हुनेछन् :

- भाषिक सिप विकासका दृष्टिले भाषिक विधा शिक्षणका सामान्य र विशिष्ट प्रयोजन तथा प्रक्रियाहरू बताउन
- भाषिक सिप विकासका दृष्टिले विविध भाषिक विधा शिक्षणका विशिष्ट प्रयोजन र प्रक्रियाहरूको वर्णन गर्न
- भाषा शिक्षण र साहित्यिक विधा शिक्षणमा रहेका भिन्नताहरूको तुलनासहित आस्वादनका दृष्टिले साहित्यिक विधा शिक्षणको आवश्यकता, महत्त्व र प्रयोजन बताउन
- आस्वादनीय दृष्टिले विविध साहित्यिक विधा शिक्षणका प्रयोजन र प्रक्रियाहरूको विवेचना गर्न .

३. विशिष्ट उद्देश्य र पाठ्यविषय

विशिष्ट उद्देश्य	पाठ्यविषय
<ul style="list-style-type: none"> • भाषिक सिप शिक्षणमा विधा शिक्षणको सम्बन्ध देखाउन • भाषिक सिप विकासका दृष्टिले विधा शिक्षणका सामान्य प्रयोजनहरू बताउन • भाषिक सिप विकासका दृष्टिले विधा शिक्षणका विशिष्ट प्रयोजनहरू औल्याउन • भाषिक सिप विकासका दृष्टिले विधा शिक्षणका सामान्य प्रक्रियाहरू निर्धारण गर्न • भाषिक सिप विकासका दृष्टिले विधा शिक्षणका विशिष्ट प्रक्रियाहरू इङ्गित गर्न । 	<p>एकाइ एक : भाषा शिक्षण र विधा शिक्षण (१०)</p> <p>१.१ भाषिक सिप शिक्षण र विधा शिक्षणको सम्बन्ध</p> <p>१.२ भाषिक सिप विकासका दृष्टिले विधा शिक्षणका सामान्य प्रयोजन</p> <p>१.३ भाषिक सिप विकासका दृष्टिले विधा शिक्षणका विशिष्ट प्रयोजन</p> <p>१.४ भाषिक सिप विकासका दृष्टिले विधा शिक्षणका सामान्य प्रक्रिया</p> <p>१.५ भाषिक सिप विकासका दृष्टिले विधा शिक्षणका विशिष्ट प्रक्रिया</p>
	<p>एकाइ दुई : भाषिक सिप विकासका दृष्टिले विविध साहित्यिक र साहित्येतर विधा शिक्षणका विशिष्ट प्रयोजन र प्रक्रिया (५)</p>

<ul style="list-style-type: none"> ● भाषिक सिप विकासका दृष्टिले कथा शिक्षणका प्रयोजन र प्रक्रियाहरू औँल्याउन ● भाषिक सिप विकासका दृष्टिले कविता शिक्षणका प्रयोजन र प्रक्रियाहरू निर्धारण गर्न ● भाषिक सिप विकासका दृष्टिले निबन्ध शिक्षणका प्रयोजन र प्रक्रियाहरू आकलन गर्न ● भाषिक सिप विकासका दृष्टिले रूपक विधाका विभिन्न उपविधा शिक्षणका प्रयोजन र प्रक्रियाहरू प्रस्तुत गर्न ● भाषिक सिप विकासका दृष्टिले जीवनी शिक्षणका प्रयोजन र प्रक्रियाहरू स्पष्ट पार्न ● भाषिक सिप विकासका दृष्टिले चिठी/निवेदन शिक्षणका प्रयोजन र प्रक्रियाहरू उल्लेख गर्न ● भाषिक सिप विकासका दृष्टिले दैनिकी शिक्षणका प्रयोजन र प्रक्रियाहरूको सूची तयार गर्न ● भाषिक सिप विकासका दृष्टिले विविध भाषातत्त्व शिक्षणका प्रयोजन र प्रक्रियाहरू निकर्गोल गर्न । 	<p>२.१ कथा शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.२ कविता शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.३ निबन्ध शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.४ रूपक शिक्षण</p> <p>२.४.१ संवाद शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.४.२ वादविवाद शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.४.३ मनोवाद शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.४.४ एकाङ्की शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.४.५ वक्तृता शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.५ जीवनी शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.६ चिठी/निवेदन शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.७ दैनिकी शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.८ भाषातत्त्व शिक्षण</p> <p>२.८.१ वर्णविन्यास र लेख्य चिो शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.८.२ व्याकरण शिक्षण : प्रयोजन र प्रक्रिया</p> <p>२.८.३ शब्दभण्डार शिक्षण : प्रयोजन र प्रक्रिया</p>
<p>खण्ड 'ख' साहित्यिक आस्वादनका रूपमा विधाशिक्षण</p>	
<ul style="list-style-type: none"> ● भाषा शिक्षणका सन्दर्भमा साहित्यिक विधा शिक्षणको परिचय दिन ● भाषिक सिप शिक्षण र साहित्यिक विधा शिक्षणमा भिन्नता देखाउन ● भाषिक सिप शिक्षणमा साहित्यिक विधा शिक्षणको आवश्यकता र महत्त्व औँल्याउन ● आस्वादनका दृष्टिले साहित्यिक विधा शिक्षणका प्रयोजन स्पष्ट पार्न । 	<p>एकाइ तिन : भाषाशिक्षण र साहित्यिक विधा शिक्षण (१०)</p> <p>३.१ साहित्य शिक्षणका रूपमा विधा शिक्षणको परिचय</p> <p>३.२ भाषिक सिप शिक्षण र साहित्यिक विधा शिक्षणमा भिन्नता</p> <p>३.३ भाषिक सिप शिक्षणमा साहित्यिक विधा शिक्षणको आवश्यकता र महत्त्व</p> <p>३.४ साहित्यिक आस्वादनका दृष्टिले विधा शिक्षणको प्रयोजन</p>
<ul style="list-style-type: none"> ● साहित्यिक विधाका रूपमा कविताकाव्यको 	<p>एकाइ चार : आस्वादनीय दृष्टिले विविध साहित्यिक विधा शिक्षणका प्रयोजन र प्रक्रिया (१३)</p> <p>४.१ कविताकाव्य विधा शिक्षण</p>

<p>परिचय, शिक्षण आवश्यकता र प्रयोजन, शिक्षण विधि, शिक्षण क्रम तथा सहकार्यकलाप स्पष्ट पार्न</p> <ul style="list-style-type: none"> नाटक/एकाङ्की विधाको परिचय सहित शिक्षण आवश्यकता, प्रयोजन, शिक्षण विधि र शिक्षण क्रमको वर्णन गर्न 	<p>४.१.१ कविताकाव्यको परिचय</p> <p>४.१.२ भाषा पाठ्यक्रममा कविताकाव्यको स्थान</p> <p>४.१.३ कविता काव्य शिक्षणको आवश्यकता र प्रयोजन</p> <p>४.१.४ कविताकाव्य शिक्षणका विभिन्न विधि र प्रक्रिया</p> <p>४.१.५ कविताकाव्य शिक्षणको क्रम</p> <p>४.१.६ कविताकाव्यप्रति रुचि उत्पन्न गर्ने सहकार्यकलापहरू</p> <p>४.२ नाटक/एकाङ्की विधा शिक्षण</p> <p>४.२.१ नाटक/एकाङ्कीको परिचय</p> <p>४.२.२ नाटक/एकाङ्की शिक्षणको आवश्यकता र प्रयोजन</p> <p>४.२.३ नाटक/एकाङ्की शिक्षणका विधि र प्रक्रिया</p> <p>४.२.४ नाटक/एकाङ्की शिक्षणको क्रम</p>
<ul style="list-style-type: none"> निबन्ध विधाको परिचय, शिक्षण आवश्यकता, प्रयोजन, शिक्षण विधि र शिक्षण क्रमको बयान गर्न कथा/उपन्यास विधाको शिक्षण आवश्यकता र प्रयोजन, शिक्षण विधि एवम् शिक्षण क्रमको रूपरेखा बताउन साहित्य शास्त्र विधाको परिचय, शिक्षण आवश्यकता र प्रयोजन तथा शिक्षण विधिहरूको वस्तुगत व्याख्या गर्न । 	<p>एकाइ पाँच : निबन्ध, कथा/उपन्यास र साहित्य शास्त्र विधा शिक्षण : प्रयोजन र प्रक्रिया (१०)</p> <p>५.१ निबन्ध विधा शिक्षण</p> <p>५.१.१ निबन्धको परिचय</p> <p>५.१.२ निबन्ध शिक्षणको आवश्यकता र प्रयोजन</p> <p>५.१.३ निबन्ध शिक्षणका विधि र प्रक्रिया</p> <p>५.१.४ निबन्ध शिक्षणको क्रम</p> <p>५.२ कथा र उपन्यास विधा शिक्षण</p> <p>५.२.१ कथा र उपन्यासको परिचय</p> <p>५.२.२ कथा र उपन्यास शिक्षणको प्रयोजन</p> <p>५.२.३ कथा र उपन्यास शिक्षणका विधि र प्रक्रिया</p> <p>५.२.४ कथा र उपन्यास शिक्षणको क्रम</p>

	<p>५.३ साहित्यशास्त्र विद्या शिक्षण</p> <p>५.३.१ साहित्यशास्त्रको परिचय</p> <p>५.३.२ साहित्यशास्त्र शिक्षणको आवश्यकता र प्रयोजन</p> <p>५.३.३ साहित्यशास्त्र शिक्षणका विधि र प्रक्रिया</p>
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४. शिक्षण विधि : प्रत्येक एकाइमा आवश्यकताअनुसार साधारण र विशिष्ट शिक्षण प्रविधि उपयोगमा ल्याइनेछ ।

४.१ साधारण शिक्षण प्रविधि : एकाइको प्रकृतिअनुरूप पाठ्यपुस्तक, सहायक पुस्तक, सन्दर्भ पुस्तक, पाठपत्र, तालिम र आरेखका आधारमा व्याख्यान, प्रश्नोत्तर, छलफल र शिक्षक प्रस्तुतीकरण विधि अँगालिनेछ ।

४.२ विशिष्ट शिक्षण प्रविधि : प्रत्येक एकाइमा एकाइको प्रकृतिअनुरूप गृहकार्य, समूहकार्य, आवधिक कार्य, गोष्ठीपत्र तयार गरी प्रस्तुतीकरण गर्ने विधि उपयोग गरिनेछ ।

५. मूल्याङ्कन प्रक्रिया

यस पाठ्यांशको मूल्याङ्कन प्रक्रिया दुई प्रकृतिको हुनेछ :

(१) आन्तरिक मूल्याङ्कन

(२) बाह्य मूल्याङ्कन

(१) आन्तरिक मूल्याङ्कन

आन्तरिक मूल्याङ्कनका लागि ४०% अङ्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि निर्दिष्ट प्रायोगिक कार्यअन्तर्गत रही विषय शिक्षकले निम्न आधारहरू अवलम्बन गर्नुपर्ने छ :

(क) उपस्थिति - ५ अङ्क

(ख) शिक्षण सिकाइमा सहभागिता - ५ अङ्क

(ग) पहिलो आन्तरिक परीक्षा - १० अङ्क

(घ) दोस्रो आन्तरिक परीक्षा - १० अङ्क

(ङ) तेस्रो आन्तरिक परीक्षा - १० अङ्क

पहिलो आन्तरिक परीक्षाका लागि विषय शिक्षकले निम्नलिखित कार्यहरू गर्न लगाउनेछन्:

अध्ययनपत्र लेखन, पुस्तक समीक्षा, लेख पुनरावलोकन, कुनै विषय शीर्षक केन्द्रित अध्ययन पत्र तयारी, आन्तरिक परीक्षा, एकाइ परीक्षा, ज्ञान/प्रतिभा परीक्षण आदि ।

दोस्रो आन्तरिक परीक्षाका लागि विषय शिक्षकले निम्नलिखित कार्यहरू गर्न लगाउनेछन् :

परियोजना कार्य, अवस्था/घटना अध्ययन, गोष्ठी, क्षेत्रकार्य, व्यक्तिगत वा समूहगत प्रतिवेदन लेखन, द्वितीय स्रोत सामग्रीमा आधारित अध्ययनपत्र लेखन, पूर्वाध्ययन, पुनरावलोकन र अभिलेखीकरण आदि ।

तेस्रो आन्तरिक परीक्षाका लागि आन्तरिक सुधार परीक्षाका रूपमा ६० पूर्णाङ्कको परीक्षा लिई त्यसलाई १० अङ्कमा रूपान्तर गरिनेछ ।

उपर्युक्त पहिलो, दोस्रो, तेस्रो आन्तरिक परीक्षा मध्ये दुईवटा लिखित परीक्षामा विद्यार्थीहरू अनिवार्य रूपमा समावेश हुनुपर्ने छ ।

२. बाह्यमूल्याङ्कन

बाह्य मूल्याङ्कनका लागि ६०% अङ्कभार छुट्याइएको छ । उक्त मूल्याङ्कनका लागि त्रि.वि. शिक्षाशास्त्र सङ्काय, डीनको कार्यालयद्वारा सत्रान्तमा परीक्षा लिइने छ । सो परीक्षामा सोधिने प्रश्नको प्रकृति, ढाँचा र त्यसको अङ्कभार निम्नानुसार हुनेछ :

प्रश्नको प्रकृति	सोधिने प्रश्न सङ्ख्या	उत्तर दिनुपर्ने प्रश्न सङ्ख्या	प्रतिप्रश्न छुट्याइएको अङ्क	पूर्णाङ्क
समूह 'क' : बहुवैकल्पिक प्रश्न	१०	१०	१	१०
समूह 'ख' : छोटो उत्तर आउने प्रश्न	६ (कुनै दुईवटा प्रश्नमा अथवा)	६	५	३०
समूह 'ग' : लामो उत्तर आउने प्रश्न	२ (कुनै एउटा प्रश्नमा अथवा)	२	१०	२०

उपस्थिति र कक्षा सहभागिता

- (क) सेमेस्टर प्रणालीमा ८० प्रतिशत उपस्थिति अनिवार्य हुनेछ । ९० प्रतिशतसम्म उपस्थिति हुने विद्यार्थीलाई ४ अङ्क र ९० भन्दा माथि उपस्थित हुने विद्यार्थीलाई ५ अङ्क प्रदान गरिनेछ ।
- (ख) कक्षा सहभागिताको ५ अङ्क मध्ये सम्बन्धित विषय शिक्षकले विद्यार्थीको कक्षाकार्यकलापको मूल्याङ्कन गरी अङ्क प्रदान गर्नेछन् ।

६. सिफारिस गरिएका सन्दर्भ सामग्रीहरू

- अधिकारी, हेमाङ्गराज (२०६७), *नेपाली भाषा शिक्षण*, काठमाडौं : विद्यार्थी पुस्तक भण्डार ।
- अधिकारी, हेमाङ्गराज र केदारप्रसाद शर्मा (२०५६), *प्रारम्भिक नेपाली शिक्षण*, काठमाडौं : विद्यार्थी पुस्तक भण्डार
- ढकाल, शान्तिप्रसाद (२०६२), *नेपाली भाषाशिक्षण : परिचय र प्रयोग*, काठमाडौं : मनकामना बुक्स एन्ड स्टेसनरी ।
- ढुङ्गेल, भोजराज र दुर्गाप्रसाद दाहाल (२०६७), *नेपाली भाषाशिक्षण*, काठमाडौं : एम.के. पब्लिसर्स एन्ड डिस्ट्रिब्युटर्स ।
- नुनन, डेभिड (सन् १९९८), *ल्याङ्ग्वेज टिचिङ मेथोडोलोजी*, न्युयोर्क : प्रेन्टिस हल ।
- पाण्डेय, राम शकल (सन् १९७६), *हिन्दी शिक्षण*, आगरा : विनोद पुस्तक भण्डार ।
- भट्टराई, रामप्रसाद (२०७९), *सान्दर्भिक नेपाली भाषाशिक्षण*, कीर्तिपुर : इन्टेलेक्च्युअल बुक प्यालेस
- राष्ट्रिय भाषा नीति सुभाष आयोग (२०५०), *राष्ट्रिय भाषा नीति सुभाष आयोगको प्रतिवेदन*, काठमाडौं : प्रज्ञा भवन ।
- रिचर्ड्स, जे. एन्ड टी. रोजर्स (सन् १९८५), *एप्रोचेज एन्ड मेथड्स इन ल्याङ्ग्वेज टिचिङ*, क्याम्ब्रिज : क्याम्ब्रिज युनिभर्सिटी प्रेस ।
- रिचर्ड्स, जे. एन्ड टी. रोजर्स (सन् १९९०), *दि ल्याङ्ग्वेज टिचिङ म्याट्रिक्स*, क्याम्ब्रिज : क्याम्ब्रिज युनिभर्सिटी प्रेस ।
- रबर्ट, ल्याडो (सन् १९६४), *ल्याङ्ग्वेज टिचिङ : अ साइन्टिफिक एप्रोच*, न्युयोर्क : म्याग्रहिल ।
- लाजर, गिलियन (सन् १९९३), *लिटरेचर एन्ड ल्याङ्ग्वेज टिचिङ*, क्याम्ब्रिज : क्याम्ब्रिज युनिभर्सिटी प्रेस ।
- श्रीवास्तव, रवीन्द्र नाथ (सन् १९९६), *भाषा शिक्षण*, नई दिल्ली : दि मैकमिलन कम्पनी अफ इन्डिया लिमिटेड ।
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- शर्मा, केदारप्रसाद र माधव प्रसाद पौडेल (२०६७), *नेपाली भाषा र साहित्य शिक्षण*, काठमाडौं : विद्यार्थी पुस्तक भण्डार ।

Special Needs Education

SN.Ed.535: Instructional Techniques for Special Needs and Inclusive Education

Course No: SN.Ed.535

Nature of Course: Theoretical

Level: M.Ed.

Credit Hours: 3

Semester: Third

Teaching Hours: 48

1. Course Description

This course is designed to provide general understanding on common instructional techniques used in both special needs and inclusive educational settings. Specific instructional techniques necessary to address learning difficulties due to particular disabilities. It helps students enrich their understanding on how effective learning for diverse groups of students can take place through the use of meaningful, participatory and useful techniques in the integrated as well as inclusive classroom settings. The instructional techniques are of course not prescriptive but inclusive of other student-centered delivery methods.

2. General Objectives

The general objectives of this course are as follows:

- To make the students knowledgeable about the basic concepts of learning and instructional techniques for all learners including children with special needs.
- To provide the students with a deeper understanding of Universal Design for Learning.
- To prepare the students to have wider knowledge of planning and process of instruction for all learners focusing children with special needs.
- To develop deeper knowledge of the students about fundamental instructional techniques to address specific needs of children.
- To enable the students to do assessment for the appropriate educational placement and referral for all learners.
- To familiarize the students with bases planning instruction for all learners including children with special needs.
- To provide the students with an introductory knowledge about support services for children with special needs
- To help the students develop classroom management techniques to facilitate the implementation of flexible learning strategies.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Clarify the concept and principles of universal design for learning. • Explain the essential qualities of universal design for learning. • Relate universal design for learning with differentiated instruction. • Prepare a UDL model lesson along with differentiated instruction. • Draw major implications of UDL for 	<p>Unit I: Universal Design for Learning (UDL) (6 hrs.)</p> <p>1.1 Concept and principles of Universal Design</p> <p>1.2 Essential qualities of UDL</p> <p>1.1 Development of UDL</p> <p>1.2 UDL and differentiated instruction</p>

<p>classroom instruction.</p> <ul style="list-style-type: none"> • State procedures of identification and assessment of individual differences for instructional planning purpose. • Prepare instructional programming and placement techniques. • Define individualized education plan along with its elements. • Identify related services to support learners with special needs. 	<p>1.3 Preparation of a UDL model lesson and differentiated instruction 1.6. Implications for classroom</p>
<ul style="list-style-type: none"> • Explain the bases of planning instruction for all learners. • State the characteristics of collaboration and collaborative consultation. • Identify the qualities of co- operative teaching. • Describe how assessment of learner’s progress can be made. • Explain positive behavior intervention and support. 	<p>Unit II: Process of Special Needs and Inclusive Education (7 hrs.) 2.1 Identification and assessment of individual differences. 2.2 Assessment and referral process 2.3 Accommodating all learners 2.4 Instruction: Programming and placement 2.5 Individualized Education Plan (IEP) 2.6 Support services</p>
<ul style="list-style-type: none"> • State the characteristics of collaboration and collaborative consultation. • Identify the qualities of co- operative teaching. • Describe how assessment of learner’s progress can be made. • Explain positive behavior intervention and support. 	<p>Unit III: Bases of Planning Instruction for All Learners (12 hrs.) 3.1 Collaboration: General and special needs educators, professionals, parents and families. 3.2 Collaborative Consultation 3.3 Teaming model 3.4 Multidisciplinary, interdisciplinary and trans- disciplinary team. 3.5 Cooperative teaching: co-teaching, Peer tutoring, team teaching 3.6 Assessment of learner’s progress 3.7 Large scale, alternative and ongoing assessment. 3.8 Formal and informal assessment 3.9 Positive behavior intervention and support.</p>
<ul style="list-style-type: none"> • Describe assistive technologies along with innovative learning tools. • Describe the use of different types of aids and services. • Relate differentiated instruction with assistive technology. • Identify possible barriers and solutions to literacy achievement. 	<p>Unit IV: Implementation of Effective Instructional Techniques (15 hrs.) 4.1 Communication aid, Daily living aids and ergonomic aids 4.2 Use of Aids/Services: <ul style="list-style-type: none"> • Environmental aids • Sensory aids • Mobility aids </p>

<ul style="list-style-type: none"> List out methods that can be used to promote mathematics, science and social studies to all learners. 	<ul style="list-style-type: none"> Seating and positioning aids Sports, recreation and leisure service Computer access aids, and Education and learning aids. <p>4.3 Differentiated instruction and use of assistive technology</p> <p>4.4 Barriers and solutions to literacy achievement</p> <p>4.5 Methods to promote mathematics for all learners</p> <p>4.6 Methods, tools, materials and resources for Science and social studies instruction</p>
<ul style="list-style-type: none"> Describe physical set up of the classroom to promote learning of diverse students. Identify the techniques to be used to group students in the classroom. List out ways and techniques of managing collaborative learning in the classroom. Explore techniques to address conflicts and problem behavior in the classroom. Explain how flexible learning strategies can be used to manage the classroom. 	<p>Unit V: Classroom Management (8 hrs.)</p> <p>5.1 Physical set up of the classroom:</p> <p>5.1.1 Seating arrangement</p> <p>5.1.2 Learning materials</p> <p>5.2 Grouping of students</p> <p>5.3 Pro-active, reactive and interactive techniques</p> <p>5.4 Management of co-operation, collaboration, consultation and co-work</p> <p>5.5 Addressing conflicts and problem behavior</p> <p>5.6 Use of flexible learning strategies</p>
<ul style="list-style-type: none"> 	

Note: The figures in the parenthesis indicate the approximate teaching hours allocated to respective units.

4. Instructional techniques

Instructional techniques can be of varied nature depending on the nature of the classroom as well as the courses to be delivered. The course can be delivered through the application of techniques ranging from peer- moderated to differentiated teaching techniques. The teachers are therefore advised to use their imagination, ingenuity, and knowledge to respond to the diverse learning needs of the students. Individual differences of the learners should be the bases for making a choice over the different techniques to deliver instruction in the classroom.

4.1 General instructional techniques

Depending on the nature of the class, subject to be taught, individual differences of the students, and type of evaluation to be used to assess the achievements of the students, the following instructional techniques will be applied solely or combined.

- lecture,
- discussion,
- question-answer,
- brain storming

- Group work and group presentation

4.2 Specific instructional techniques

Specific instructional techniques such as group preparation and presentation by the students, guided individual study, independent study/work, tutorial support on different contents and project works are suggested. To this course, following specific instructional techniques are suggested for selected units to ensure students' active participation in teaching-learning process and make the teaching-learning meaningful.

Unit I	All students will visit the nearby model inclusive school to assess the use of UDL principals in classroom instruction.
Unit II	All students are required to prepare at least three IEPs of different nature of students in groups and share them in the class as a practical learning experience. Students will be divided into groups and will be assigned to prepare three different types of IEPs based on the selection of needs of children with special needs. Each group will prepare a brief plan and present it in the class using preferably multimedia projector. The presentation will be supplemented by teacher's feedback and comments.
Unit III	Students will visit the Inclusive schools to observe the collaboration model adopted for the students with special needs. They will prepare a brief report regarding the different collaborative teaching model applied in the class room effectively.
Unit IV	Students will be individually assigned to identify effective instructional technique for children with special needs after doing a literature survey and a brief visit to a neighboring integrated school in groups. They will then prepare a frame work (outline) of the intended instructional technique to use in the classroom. The frame work will be presented in the classroom for all for their feedback and comments. The presenter will incorporate the comments into the frame work and then prepare it as an assignment for his evaluation.
Unit V	While visiting the nearby integrated schools, students will observe the class room management practice used by the school while responding the students with special needs.

5. Evaluation

Two types of assessment techniques, namely internal and external, will be carried out to appraise the academic achievement of students under this course. Internal and external assessment procedures will carry 40 and 60 percent weight correspondingly. Detail description of assessment procedures will be as follows:

5.1 Internal Assessment 40%

The concerned teacher will carry out the internal assessment of the students based on the distribution of marks as stated below:

- | | |
|--|----------|
| • Attendance | 05 marks |
| • Participation in learning | 05 marks |
| • First assessment (Literature review and presentation) | 10 marks |
| • Second assessment (School visit and report submission) | 10 marks |
| • Third assessment (Written examination) | 10 marks |

Total

40 mark

5.1 Semester/Final Examination 60 %

Examination Division, Dean's Office, Faculty of Education will conduct semester/final examination at the end of each semester. The distribution of marks for the types of questions to be asked in final examination is as follows:

• Objective type questions (10 Multiple choice items x 1 marks)	10 marks
• Short answer questions (6 questions with 2 "or" questions x 5 marks)	30 marks
• Long answer questions (2 questions with 1 or question x 10 marks)	20 marks
Total	60 marks

6 Recommended Books and Reference Materials

6.1 Recommended Books

Garguilo, R. M., & Metcalf, D. (2000). *Teaching in today's inclusive classroom*, (2nd ed). USA: Wards worth Cengage Learning. (For all Units).

6.2 Reference Materials

Heward, W. L. (2013). *Exceptional children: An introduction to special education* (10th ed.). New York: Pearson Education, Inc.

Kirk, S., Gal lager, J., Anastasiow, N., & Coleman, M. R. (2015). *Educating Exceptional Children* (14th Ed.). USA: Wards worth Cengage Learning

SN.Ed. 536: Education for Children with Multiple Disabilities

Course No: SN.Ed.536

Nature of course: Theoretical

Level: M.Ed.

Credit Hours: 3

Semester: Third

Teaching Hours: 48

1. Course Description

This course describes educational accommodations for individuals with multiple disabilities affected by neuro-motor impairments, developmental delays and health impairments with an emphasis on prevalence, characteristics and causes. It entails models of disability and explores critical issues in the lives of persons with multiple disabilities. Furthermore, the course deals with the curriculum options and avenues for performance improvement, adaptations for personal independence in a variety of self-care areas and physical education. Leisure education and recreation for individuals with multiple disabilities form the other components of the course.

2. General Objectives

The general objectives of the course are as follows:

- To enable the students to identify individuals with multiple disabilities and manage their educational accommodations
- To help the students analyze multiple disabilities in relation to prevalence, characteristics and causes with implications for educational and personal autonomy
- To prepare the students to design instructional planning for persons with multiple disabilities.
- To develop the skills of the students to assess individuals with multiple disabilities
- To prepare the student to apply adaptation skills for personal independence of individuals with multiple disabilities
- To enable students to develop ways to adapt physical education, leisure education, recreation and sports for individuals with multiple disabilities

3. Specific objectives and contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Describe concept and prevalence of multiple disabilities • Explain the models of disability • Explore critical issues in the lives of individuals with multiple disabilities 	<p>Unit 1: Understanding Children with Multiple Disabilities (9 hrs.)</p> <p>1.1 Concept and Prevalence of Multiple Disabilities and Physical Disabilities</p> <p>1.2 Models of Disability:</p> <p>1.2.1 Medical</p> <p>1.2.2 Socio-cultural</p> <p>1.2.3 Educational</p> <p>1.2.4 Charity- vs rights-based</p>

	<p>1.2.5 Community-based rehabilitation (CBR)</p> <p>1.3 Critical Issues of Multiple Disabilities:</p> <p>1.3.1 Attitudinal: rejection vs acceptance</p> <p>1.3.2 Educational: educable vs uneducable</p> <p>1.3.3 Employability: independence vs dependence</p> <p>1.3.4 Service Delivery: general vs intensive</p>
<ul style="list-style-type: none"> • Discuss multiple disabilities like neuro-motor impairments, developmental delays and health impairments • Identify the prevalence, characteristics, causes, and medical as well as therapeutic treatments of individuals with multiple disabilities • Distinguish the potential impact on motor, physical, cognitive and psychological developments of individuals with multiple disabilities • Discuss the implications for education and personal autonomy of individuals 	<p>Unit 2: Multiple Disabilities: Prevalence, Causes and Characteristics (9)</p> <p>2.1 Neuro-motor Impairments: Cerebral Palsy</p> <p>2.1.1 Prevalence, characteristics and Causes</p> <p>2.1.2 Medical and therapeutic treatments</p> <p>2.1.3 Impact on motor, cognitive, and psychological development</p> <p>2.1.4 Implications for education and personal autonomy</p> <p>2.2 Developmental Delays: Autism</p> <p>2.2.1 Prevalence, characteristics and causes</p> <p>2.2.2 Medical and therapeutic treatments</p> <p>2.2.3 Impact on motor, cognitive, and psychological development</p> <p>2.2.4 Implications for education and personal autonomy</p> <p>2.3 Health Impairments: Congenital and Acquired Impairments</p> <p>2.3.1 Prevalence, characteristics and causes</p> <p>2.3.2 Medical and therapeutic treatments</p> <p>2.3.3 Impact on motor, cognitive, and psychological development</p> <p>2.3.4 Implications for education and personal autonomy</p>
<ul style="list-style-type: none"> • Explain the alignment of general curriculum • Discuss curriculum modification process • Determine the process of unique curriculum • Develop annual IEP goals 	<p>3: Instructional Planning for Children with Multiple Disabilities (11)</p> <p>3.1 Alignment of General Curriculum</p> <p>3.1.1 Accommodations</p> <p>3.1.2 Modifications</p> <p>3.1.3 Augmentation</p> <p>3.2 Curriculum Modification Process</p> <p>3.2.1 The educator team problem-solving approach</p> <p>3.2.2 The objective evaluation approach</p> <p>3.3 Determining Unique Curriculum</p> <p>3.3.1 Identification of the need</p> <p>3.3.2 Narrowing the focus</p> <p>3.3.3 Accommodating the learning conditions</p> <p>3.4 Developing Annual IEP Goals</p>

	3.4.1 Assessment of present level of performance 3.4.2 Preparing measurable IEP goals 3.5 Suggesting special educational services as per the goals
<ul style="list-style-type: none"> • Assess daily living and personal hygiene management skills for children with multiple disabilities • Teach daily living and personal hygiene management skills for children with multiple disabilities • Delineate basic self-help skills • Discuss home-care and • Explain technology and support services for children with multiple disabilities 	Unit 4: Activities of Daily Living Skills (ASDLs) (10) 4.1 Assessing the Daily Living Skills for Children with Multiple Disabilities 4.2 Personal Hygiene Management Skills 4.3 Basic Self-help Skills 4.4 Home Care and Management 4.5 Technology and Support Services: Home and School
<ul style="list-style-type: none"> • Outline ways of adapting physical education activities • Adapt leisure time and recreational activities to the needs of children with multiple disabilities • Identify appropriate physical and recreational activities sports for individuals with physical or multiple disabilities • management for children with multiple disabilities 	Unit V: Adaptation: Physical Education and Recreational Activities (11) 5.3 Adapting Physical Education Activities 5.3.1 Collaboration with physical education specialist 5.3.2 Assessment of students' needs, abilities and interests 5.3.3 Planning for instructional program and strategies 5.3.4 Strategies for inclusion 5.4 Leisure Time and Recreational Activities 5.4.1 Program Domains: recreational, creative, as well as science and technology domains 5.4.2 Program Development 5.4.3 Special Interests

Note: The figures in the parentheses indicate the approximate teaching hours for the respective units.

4. **Instructional techniques:** Two types of instructional techniques are suggested: general and specific to deliver the contents in the classroom. A brief account of these techniques follows:

4.1 General instructional techniques

The following techniques can be applied as general instruction:

- Lecture/illustrated talk with the use of multi-media
- Discussion
- Question-answer
- Independent study
- Value clarification

4.2 Specific instructional techniques

The following specific instructional techniques are suggested for selected units to ensure students' active participation in teaching-learning process and make the teaching-learning research-oriented.

Unit I	<p style="text-align: center;">Peer-tutoring</p> <p>Students will prepare presentation on assigned topic and discuss in the class with feedback to each other.</p>
Unit II	<p style="text-align: center;">Case Study</p> <p>Cases of selected students from special/integrated schools will be presented with a reference to any neuro-motor impairments/developmental delays/health impairments. Students in groups will be asked to develop cases of children who have suffered from such disabilities by making a quick visit to special/integrated schools. Their presentation will be supplied with feedback.</p>
Unit III	<p style="text-align: center;">Individual Activity</p> <p>Students will visit and observe teaching-learning activities in inclusive/integrated/special school and explore answers to following questions:</p> <ul style="list-style-type: none"> • What accommodations have the teachers made to include students with multiple disabilities in content and assessments in general curriculum. The observed grade? • What is your evaluation of the effectiveness of the accommodations or special conditions? What suggestions do you have?
Unit IV	<p>Visit either a special or an integrated school where children with multiples disabilities have been receiving educational services and then collect information regarding their daily living activities. Prepare a brief report based on the information and share it among your peers inside your classroom.</p>
Unit V	<p style="text-align: center;">Group Activity</p> <p>What sports activities would you recommend for someone with cerebral palsy? Autism? What sports would you not recommend for these individuals, and why? Discuss and prepare a report.</p>

5. Evaluation

Two types of assessment techniques, namely internal and external, will be carried out to appraise the academic achievement of students under this course. Internal and external assessment procedures will carry 40 and 60 percent weight correspondingly. Detail description of assessment procedures will be as follows:

5.1 Internal Assessment 40%

The concerned teacher will carry out the internal assessment of the students based on the distribution of marks as stated below:

• Attendance	05 marks
• Participation in learning	05 marks
• First assessment (Literature review and presentation)	10 marks
• Second assessment (School visit and report submission)	10 marks
• Third assessment (Written examination)	10 marks
Total	40 marks

5.2 Semester/Final Examination 60%

Examination Division, Dean's Office, Faculty of Education will conduct semester/final examination at the end of each semester. The distribution of marks for the types of questions to be asked in final examination is as follows:

• Objective type questions (10 Multiple choice items x 1 marks)	10 marks
• Short answer questions (6 questions with 2 "or" x 5 marks)	30 marks
• Long answer questions (2 questions with 1 "or" x 10 marks)	20 marks
Total	60 marks

6. Recommended Books and Reference Materials

6.1 Recommended Books

Best, S. J., Heller, K. W., & Bigge, J. L. (2010). *Teaching individuals with physical or multiple disabilities* (6th ed.). USA: Pearson Education, Inc.

6.2 Reference Materials

Tom E. C., Smith, E. A., Polloway, J., Patton, R. P., & Carol, A. D. (2011). *Teaching Students with Special Needs in Inclusive Settings* (6th ed.). New Delhi: Pearson Education, Inc.

Heward, W. L. (2013). *Exceptional children: An introduction to special education* (10th ed.). USA: Pearson Education, Inc.

SN. Ed. 537: Assistive Technology in Special Needs Education

Course No: SN. Ed. 537

Nature of course: Theoretical

Level: M.Ed.

Credit Hours: 3

Semester: Third

Teaching Hours: 48

1. Course Description

This course emphasizes the integration of Assistive Technology (AT) into the curriculum and instruction focusing on the use of assistive technology in schools to enhance learning of students with special needs. The linkage between technology and teaching-learning drives the organization of the course into school-related tasks that students must perform on a daily basis to be successful. It presents description of technology-based solutions to the obstacles of students especially with disabilities.

2. General Objectives

The general objectives of the course are as follows:

- To introduce the students with different instructional aspects of assistive technologies
- To familiarize the students with AT and its linkages with language teaching, Augmentative and Alternative Communication (AAC), Information and Communication Technology (ICT), and rehabilitation
- To distinguish between assistive technology and other educational technologies
- To develop skills among the students in use of ATs in teaching CWDs
- To provide knowledge about selected learning tools and help to use them

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Describe the types of assistive technology and its use in school. • Clarify the purposes of HAAT model in teaching Students with Disabilities • Explain guiding principles to select appropriate technologies • Explain the role of AT in promoting IT literacy. • Use AT for instructional activities • Explain the use of low, mid and high tech devices 	<p>Unit - I Assistive Technology (AT) in Instruction (15)</p> <p>1.1 Concept and Types of Assistive Technology with its use in school</p> <p>1.2 Purposes of Human Activity Assistive Technology (HAAT) Model</p> <p>1.3 Guiding principles in selecting appropriate technologies</p> <p>1.4 Assistive technology and IT literacy</p> <p>1.5 Assistive technology in instructional activities</p> <p>1.6 Assistive Technology</p> <p>1.6.1 Communication Aids</p> <p>1.6.2 Daily Living Aids</p> <p>1.6.3 Ergonomic Aids</p>

<ul style="list-style-type: none"> • Illustrate the Communication Aids, Daily Living Aids, and Ergonomic Aids. 	
<ul style="list-style-type: none"> • Identify key precautions measures in the use of assistive technology devices (ATDs) • Analyze the issues and challenges of AT use in promoting inclusive education in Nepal • Mention the concept and uses of ATs and AAC tools with examples 	<p>Unit II: Application of Assistive Technologies and Learning Tools (12 hrs.)</p> <p>2.1 Assistive Technologies 2.2 Sensory Aids 2.3 Mobility and Transportation Aids 2.4 Seating and Positioning Aids 2.5 Sports, Recreation and Leisure Ai 2.6 Computer Access Aids 2.7 Education and Learning Aids 2.8 Augmentative and Alternative Communication (AAC) Tools</p>
<ul style="list-style-type: none"> • Relate AT with Instructional Technology. • Differentiate AT with adaptive technology. • Explain how ATs promote to social rehabilitation for students with disabilities • Explain the key roles of AT in designing IEP. • Mention the role of ICT in teaching the SWD. • Assess the use of AT in school environment. • Relate AT with DI. • Issues and challenges of AT use in promoting inclusive education in Nepal 	<p>Unit III: Relation of AT with Other Technologies (11)</p> <p>3.1 Relation between Assistive Technology (AT) and Instructional Technology (IT) 3.2 Difference between Assistive Technology (AT) and Adaptive Technology 3.3 Assistive Technology and Rehabilitation 3.4 Assistive devices in developing Individualized Educational Plan (IEP) 3.5 Information and Communication Technology (ICT) for students with disabilities 3.6 Assessment of AT in school environment 3.7 AT and Digital Inclusion (DI)</p>
<ul style="list-style-type: none"> • Discuss the use of ATs while teaching CWDs. • Give brief introduction to reading and writing technologies. • Explain listening, math, and memory enhancing technologies. 	<p>Unit IV: Use of ATs in Teaching Children with Disabilities (CWDs) (10)</p> <p>4.1 Reading technology 4.2 Written language technology 4.3 Listening technologies 4.4 Math technology 4.5 Memory technology</p>

Note: Figures within parentheses indicate approximate teaching hours allocated to respective units.

4. Instructional Techniques

General and specific instructional are recommended to deliver the contents in the classroom.

Brief accounts of these techniques are as follows:

4.1 General Instructional Techniques

- Lecture with Discussion
- Group and Individual work
- Presentation
- Field study
- Report writing
- Home assignment and self-study

4.2 Specific Instructional Techniques

Specific instructional techniques such as classroom presentation by the students, guided individual study, tutorial support on different contents and project works are suggested. To this course, following specific instructional techniques are suggested for selected units to ensure students' active participation in teaching-learning process and make the teaching-learning research-oriented.

Unit	Specific Instructional Techniques Library Visit
Unit I	Consult E-/library and explore the possible reading materials from the available resources. Let students prepare and present the report of library task.
Unit II	Fundamental Exhibition Display the video to demonstrate AAC using AT
Unit III	Students' Presentation Let every student prepare and present a given topic using power point text.
Unit IV	School-based Activities Make students work in different groups (representing reading technology, written language technology, listening technologies, memory technology, and math technology) to identify assistive devices being used in schools and prepare and present the use of ADs.
Unit V	Visit a special school and observe different types of assistive technologies that have been using for children with special learning needs and share it among your peers.

5. Evaluation

Two types of assessment techniques, namely internal and external, will be carried out to appraise the academic achievement of students under this course. Internal and external assessment procedures will carry 40 and 60 percent weight correspondingly. Detail description of assessment procedures will be as follows:

5.1 Internal Assessment 40%

The concerned teacher will carry out the internal assessment of the students based on the

distribution of marks as stated below:

• Attendance	05 marks
• Participation in learning	05 marks
• First assessment (Literature review and presentation)	10 marks
• Second assessment (School visit and report submission)	10 marks
• Third assessment (Written examination)	10 marks
Total	40 marks

5.2 Semester/Final Examination 60 %

Examination Division, Dean's Office, Faculty of Education will conduct semester/final examination at the end of each semester. The distribution of marks for the types of questions to be asked in final examination is as follows:

• Objective type questions (10 Multiple choice items x 1 marks)	10 marks
• Short answer questions (6 questions with 2 "or" questions x 5 marks)	30 marks
• Long answer questions (2 questions with 1 or question x 10 marks)	20 marks
Total	60 marks

6. Recommended Books and Reference Materials

6.1 Recommended Books

Albert, M., Cook P. E., Janice, M. P. (2015). *Assistive technologies: Principles and practice* (4th Ed.). New York: Pearson Education, Inc.

6.2 Reference Materials

Amy, G. D., Deborah, N., & Jerry, G. P. (2011). *Assistive technology in the classroom: Enhancing the school experiences of students with disabilities*. USA: Pearson Education, Inc.

Diane P. B., & Brian. R. B. (2011). *Assistive technology for people with disabilities* (2nd). Pearson Education, Inc.

Kathleen, S., Nancy, R., (2010). *Assistive technology for young children: Creating inclusive learning environments*. Sydney: Brookes Publishing.

SN. Ed. 538: Emotional, Behavioral and Autism Spectrum Disorders

Course No: SN. Ed. 538

Nature of course: Theoretical

Level: M. Ed.

Credit Hours: 3

Semester: Third

Teaching Hours: 48

1. Course Description

This course focuses on emotional, behavioral disorders (EBD) and autistic spectrum disorders (ASD) of diverse learners with specific attention to social learning as practiced through classroom dynamics. It will provide the students with the knowledge and skills to effectively work with learners with EBD and ASD in school. It also provides a range of skills for assessment, diagnosis and Positive Behavior Support (PBS) to such students in different educational settings.

2. General Objectives

The general objectives of the course are as follows:

- To introduce students with the concepts of EBD and ASD
- To familiarize students with assessment and diagnosis process of EBD and ASD
- To develop skills in managing behavioral problems in the classroom
- To provide knowledge about selected learning tools with their use
- To develop classroom organization skills for children with EBD and ASD
- To enable students to apply appropriate teaching approaches for children with EBD and ASD
- To enhance students' knowledge to relate multicultural considerations with communication and languages of children with EBD and ASD
- To acquaint the students with domains of risk and protective factors for EBD and ASD

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> ● Present the causes and characteristics of EBD and ASD with respect to prevalence and challenges ● Identify the characteristics of external behavioral disorders ● Explain the characteristics of mood disorders ● Discuss the salient features of ASD 	<p>Unit I: Introduction to EBD and ASD (14 hrs.)</p> <p>1.1 Concept of Children with EBD and ASD</p> <p>1.1.1 Definition, prevalence and challenges</p> <p>1.1.2 Causes of EBD and ASD: Biological, congenital and birth complexity, home/family malfunctioning, social- cultural factors</p> <p>1.2 Parameters of Emotional and Behavioral Disorders</p> <p>1.2.1 Externalized behaviors</p> <ul style="list-style-type: none"> ● Attention Deficit Hyperactivity Disorder (ADHD) ● Conduct disorder ● Oppositional defiant disorder ● Tics and Tourette's Syndrome (TTS) <p>1.2.2 Mood disorders</p>

	<p>1.2.3 Autism Spectrum Disorder</p> <ul style="list-style-type: none"> • Autism • Asperger's Syndrome
<ul style="list-style-type: none"> • Present the concept of assessment and diagnosis regarding EBD and ASD • State the role of RTI and PBS in making assessment and diagnosis of EBD and ASD • Discuss different tests and techniques to assess and diagnose of EBD and ASD • Identify the issues of diagnosing children with EBD and ASD in the present context of Nepal 	<p>Unit II: Assessment and Diagnosis of EBD and ASD (14 hrs.)</p> <p>2.1 Differences between assessment and diagnosis</p> <p>2.2 Clinical diagnosis</p> <p>2.3 Response to Intervention (RTI)</p> <p>2.3 Positive Behavior Support (PBS)</p> <p>2.4 Specific tests and techniques for assessment of EBD and ASD</p> <p>2.4.1 Developmental history</p> <p>2.4.2 Behavioral observations</p> <p>2.4.3 Behavioral checklists and rating scales</p> <p>2.4.4 Child interview</p> <p>2.4.5 Projective techniques</p> <p>2.4.6 Academic assessment and determination of educational needs</p> <p>2.4.7 The multidisciplinary approach</p> <p>2.5 Steps/process of assessment</p> <p>2.6 Issues of diagnosis and assessment of children with EBD and ASD in the present context of Nepal</p>
<ul style="list-style-type: none"> • Assess the effect of multicultural background in language style of children with EBD and ASD. • Link the triads of impairments with focus on ASD. • Identify protective measures in order to reduce risks by children with EBD and ASD 	<p>Unit III: The Inter-linkages between EBD and ASD (8 hrs.)</p> <p>3.1 Domains of inter-linkages between EBD and ASD</p> <p>3.1.1 Cultural considerations and issues</p> <ul style="list-style-type: none"> • Disciplinary and behavioral issues <p>3.1.2 The triad/areas of impairments</p> <ul style="list-style-type: none"> • Problem in social interaction • Language and communication impairments • Rigidity of thoughts and imagination <p>3.1.3 Protective measures to reduce risks by children with EBD and ASD</p> <p>3.3.1 Individual level</p> <p>3.3.2 Home and family level</p> <p>3.3.3 In school</p> <p>3.3.4 Peer group and community</p>
<ul style="list-style-type: none"> • Identify factors for creating effective school and classroom environment to manage behavioral problems of children with EBD and ASD • Discuss instructional approaches and classroom management 	<p>Unit IV: Managing Behavior Problems in School and Classroom (8 hrs.)</p> <p>4.1 Establishing effective classroom environment</p> <ul style="list-style-type: none"> • Physical environment of the classroom • Effective teachers

<ul style="list-style-type: none"> ● Explore the role of speech and language therapist in language development of children with ASD 	<ul style="list-style-type: none"> ● Differentiated instruction, ● Communication and conflicts in the classroom ● Peer mediation <p>4.2 Instructional approaches</p> <ul style="list-style-type: none"> ● Classroom organization ● Use of teaching aids ● Use of language, communication and social skills ● Inclusive approach to classroom <p>4.3 The role of speech and language therapist</p>
<ul style="list-style-type: none"> ● Discuss the characteristics of children with Down Syndrome ● Identify measures managing behaviours of children with Down Syndrome ● Explore the role of speech and language therapist in developing speech-language skills 	<p>Unit V: Language and behavioral issues in children with Down Syndrome (4 hrs.)</p> <p>5.1 Characteristics of children with Down Syndrome</p> <ul style="list-style-type: none"> ● Cause, prevalence and challenges ● Delayed speech-language development <p>5.2 Managing challenging behaviors of children with Down Syndrome</p> <p>5.2.1 Things to try at home</p> <ul style="list-style-type: none"> ● Give simple, clear directions, ● Establish a routine and stick to it, ● Use visual schedules, plan for difficult Situation, Make time for the fun stuff <p>5.2.2 Reward good behavior</p> <ul style="list-style-type: none"> ● Making a good-behavior chart ● Control and ignore strategies (Pick your battles) ● Manage power struggle ● Make hard tasks more fun ● Apply “disarm and distract” principle ● Correcting: Model a better way ● Use time-outs wisely ● Take away privileges <p>5.3 Role of speech and language therapist in developing speech and language skills</p>

Note: The figures in the parenthesis indicate the approximate teaching hours for the respective units

4. Instructional Techniques

General and specific instructional are recommended to deliver the contents in the classroom. Brief accounts of these techniques are as follows:

4.1 General instructional techniques

Depending on the nature of the class, subject to be taught, individual differences of the students, and type of evaluation to be used to assess the achievements of the students, the following instructional techniques will be applied solely or combined.

- Lecture
- Discussion
- Question-answer
- Brain storming
- Group work and group presentation

4.2 Specific Instructional Techniques

Specific instructional techniques such as classroom presentation by the students, guided individual study, tutorial support on different contents and project works are suggested. To this course, following specific instructional techniques are suggested for selected units to ensure students' active participation in teaching-learning process and make the teaching-learning research-oriented.

Units	Specific Instructional Techniques
Unit I	<p style="text-align: center;">Home Visit</p> <p>Organize a short visit to parents and teachers and let students interact on the given topic according to the course. Prepare and present the report after visit.</p>
Unit II	<p style="text-align: center;">Presentation by Resource Persons</p> <p>Invite professionals or paraprofessionals as resource person: Experts, child and parents of the child with EBD and ASD.</p>
Unit III	<p style="text-align: center;">Round Table Discussion</p> <p>Organize a round table discussion in the class and let every student participate in the discussion on multicultural consideration in the language development, triads of impairments and risk and protective factors of children with EBD and ASD. Help students draw conclusions from the discussion.</p>
Unit IV	<p style="text-align: center;">Group Discussions</p> <p>Divide students into three groups and let them discuss on the appropriate ways of effective classroom environment, instructional approaches and the role of speech therapist in the development of language of the children with ASD. Let students present their conclusion in group.</p>
Unit V	<p style="text-align: center;">Presentation by the students</p> <p>All students will prepare at least one lesson and perform a presentation using power point.</p>

5. Evaluation

Two types of assessment techniques, namely internal and external, will be carried out to appraise the academic achievement of students under this course. Internal and external assessment procedures will carry 40 and 60 percent weight correspondingly. Detail description of assessment procedures will be as follows:

5.1 Internal Assessment 40%

The concerned teacher will carry out the internal assessment of the students based on the distribution of marks as stated below:

• Attendance	05 marks
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• Third assessment (Written examination)	10 marks
Total	40 marks

5.2 Semester/Final Examination 60%

Examination Division, Dean's Office, Faculty of Education will conduct semester/final examination at the end of each semester. The distribution of marks for the types of questions to be asked in final examination is as follows:

• Objective type questions (10 Multiple choice items x 1 marks)	10 marks
• Short answer questions (6 questions with 2 "or" questions x 5 marks)	30 marks
• Long answer questions (2 questions with 1 or question x 10 marks)	20 marks
Total	60 marks

6. Recommended Books and References

6.1 Recommended Books

Flick G.L., (2011). *Understanding and Managing Emotional and Behavioral Disorders in the Classroom*. New Jersey: Pearson Education, Inc. Upper Saddle River.

Kauffman, J.M. & Landrum, T. J. (2013). *Characteristics of Emotional and Behavioral Disorders of Children and Youth*. New Jersey: Pearson Education, Inc. Upper Saddle River.

Worth, S. (2005). *Autism Spectrum Disorder*. London, New York: Continuum International Publishing Group.

References

Bakken, J.P., Obiakor, F.E., & Rotatori, A.F. (2012). *Behavioral disorders: Identification, assessment, and Instruction of Students with EBD*. UK: Emerald Group Publishing Limited, UK.

Davis, M.R., Culotta, V.P., Levine, E.A., & Rice E.H., (2011). *School success for kids with emotional and behavioral disorders*. USA: Prufrock Press Inc.

Political Science

Pol. Sc. Ed. 535: Teaching Political Science

Course No: Pol. Sc. Ed. 535

Level: M.Ed.

Semester: Third

Nature, of course: Theoretical

Credit hours: 3

Teaching hours: 48

1. Course Description

This course is designed to provide students theoretical understanding of pedagogical components and various skills of teaching strategies. It is divided into six units. The unit 1 deals with the introduction, unit 2 with objective, while unit 3 with Curriculum. Unit 4 & 7 includes instructional strategies and evaluation techniques, respectively the last unit gives emphasis on instructional planning in political science education.

2. General Objectives

The general objectives of this course are as follows:

- To acquaint the students with the pedagogical concept of Political Science Education
- To enable the students in writing different types of instructional objectives
- To Prepare the students in designing the model curriculum in Political Science Education
- To Provide the students with the techniques of book reviews
- To familiarize the students with importance of educational technology and the use of different teaching aids in classroom
- To expose the students to the teaching strategies for Political Science Education
- To make the students familiar with the importance and use of various teaching methods, techniques and materials.
- To help the students in preparing subjective and objective test items.
- To familiarize the students with the preparation and use various types of instructional planning.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the concept of a discipline • Define the changing concept of Political Science • State the scope of Political Science • Explain the Relation of Political Science with other social science (History, Economics, Geography, Population, Sociology, Anthropology, and Psychology) • Discuss the meaning and propose of political science education, political education, and politics of education 	<p>Unit 1: Introduction (8)</p> <p>1.1 Political Science as a discipline</p> <p>1.2 Changing concept of Political Science</p> <p>1.3 Scope of Political Science</p> <p>1.4 Relation of Political Science with other social science (History, Economics, Geography, Population, Sociology, Anthropology, and Psychology)</p> <p>1.5 Political Science Education</p> <p>1.6 Political of Education</p> <p>1.7 Politics of Education</p>
<ul style="list-style-type: none"> • Analyze the taxonomy of educational objectives 	<p>Unit 2: Objective in Political Science Education (4)</p>

<ul style="list-style-type: none"> • Clarify the concept of curricular objectives • Explain the features of instructional objectives • Construct instructional objectives from giving political science course 	<p>2.1 Educational Objectives 2.2 Curricular Objectives 2.3 Instructional Objectives 2.4 Construction of Instructional Objectives</p>
<ul style="list-style-type: none"> • Explain the concept and elements of curriculum • Explain the foundations and principles of selection of political science curriculum • To analyze the existing curriculum of Higher Secondary and B.Ed. level courses in the context of Nepal • Design a model curriculum of higher secondary and B.Ed. level in the context of Nepal • Explain the techniques of book reviews • Review any one book of political science or political science education 	<p>Unit 3: Curriculum in Political Science Education (10)</p> <p>3.1. Concept and elements of curriculum 3.2. Foundation of curriculum 3.3. Principles of selection of political science curriculum 3.4. Analytical study of higher secondary and B. Ed. level courses in Nepal 3.5. Designing a model curriculum in political science 3.6. Techniques of book reviews 3.7. Book review Book of political science or political science education (at least one)</p>
<ul style="list-style-type: none"> • Explain the concept of instructional strategies • Critically analyze and evaluate various methods and techniques of teaching political science • Discuss the concepts, features and major strategies of critical thinking approach • Describe the importance and use of various reading materials, maps, charts and diagrams 	<p>Unit 4: Instructional strategies in Political Science Education (12)</p> <p>4.1 Concept of instructional strategies 4.2 Critical analysis of teaching methods and Techniques 4.2.1 Lecture 4.2.2 Discussion 4.2.3 Inquiry 4.2.4 Problem-solving 4.2.5 Project 4.2.6 Observation 4.3 Critical thinking strategies 4.3.1 Concepts 4.3.2 Features 4.3.3 Strategies 4.4 Instructional material 4.4.1 Reading materials 4.4.2 Maps 4.4.3 Charts 4.4.4 Diagrams</p>
<ul style="list-style-type: none"> • Explain the concept and definition of evaluation 	<p>Unit 5: Evaluation in Political Science Education (8)</p>

<ul style="list-style-type: none"> • Discuss the importance and purpose of evaluation • Critically analyze the subjective and objective tests • Describe the importance and use of specification chart • Prepare a model specification chart. • Construct long-answer and short answer questions as well as objective items 	5.1. Concept and definition of evaluation 5.2. Importance and purposes of evaluation. 5.3. Critical analysis of subjective and objective tests 5.4. Specification chart 5.3.1 Impotence 5.3.2 Use 5.3.3 A model specification chart 5.5. Construction of Questions
<ul style="list-style-type: none"> • Explain the importance and purpose of different instructional plans • Prepare work plan, unit plan and lesson plan 	Unit 6: Instructional Planning in Political Science Education (6) 6.1. Work plan 6.2. Unit plan 6.3. Lesson plan

4. Instructional Techniques

4.1 General Instructional Techniques

- Lecture
- Discussion
- Inquiry
- Interaction

4.2 Specific Instructional Techniques

Unit 1 & 2 : Self study

Unit 3 & 4 : Group work & Class presentation

Unit 5 & 6: Seminar

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10× 1	10
2.	Short answer questions (6 with 2 or questions × 5 points)	6× 5	30
3.	Long answer questions (2 with one or questions × 10 points)	2×10	20
	Total	18	60

6. Recommended Books and References

Recommended Books:

- Armstrong, R. J., et. al. (eds). (1968). *Developing and writing behavioural objectives*. Arizona: Educational Innovators Press Inc. (For unit II)
- Bloom, S. et. al (eds). (1956). *Taxonomy of educational objectives hand book I cognitive Domain*. New York: David Mckay Co. Inc. (For unit II)
- Crawford, A. et al (2005). *Teaching and learning strategies for the thinking classroom*. New York: The International Debate Education Association. (For unit III)
- Dececco, J. P. (1970). *The psychology of learning and instruction: Educational psychology*. New Delhi: Prentice Hall of India Private Limited (For unit III)
- Lenin, L. & Gronlund, E. (2003). *Measurement and assessment in teaching (First Indian Reprint)*. Delhi: Pearson Education Pvt. Ltd. (For unit IV)
- कोयम, अब्दुल (), राजनीतिशास्त्र शिक्षण
फूएल, श्यामप्रसाद (२०७५), राजनीतिशास्त्र शिक्षण, काठमाडौं, सनलाईट पब्लिकेशन ।

References

- Bonwell, C. C., & Eison, J. A. (1991). Active learning: Creating excitement in the classroom. ASHE-Eric Higher Education Report No. 1. Washington, DC.: George Washington University.
- DeNeve, K. M., & Heppner, M. J. (1997). Role play simulations: The assessment of an active learning technique and comparisons with traditional lectures. *Innovative Higher Education* 21, 231-246.
- Elliot, L. B. (1993). Using debates to teach the psychology of women. *Teaching of Psychology* 20, 35-38.
- Jaques, D. (1992). *Learning in groups*. Houston: Gulf.
- Jarolimek, J. (1971). *Social studies in the elementary school*. New York: Macmillan.
- Karthwohl, R., et. al. (eds). (1964). *Objectives-hand-book II: The affective domain*. New York: David Mckay Co. Inc.
- Kolb, D. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice Hall.
- Ladousse, G. P. (1987). *Role play*. Oxford: Oxford University Press.
- Marton, F., & Saljo, R. (1976). On qualitative differences in learning: I—outcomes and process. *British Journal of Educational Psychology* 46 (1), 4-11.
- McCarthy J.P. and Anderson L.(2000). Active Learning Techniques Versus Traditional Teaching Styles: Two Experiments from History and Political Science, *Innovative Higher Education*, Vol. 24, No. 4, Summer 2000.
- McKeachie, W. J. (1999). *Teaching tips: Strategies, research, and theory for college and university teachers*. Boston: Houghton Mifflin.
- Miller, J. E., & Groccia, J. E. (1997). Are four heads better than one? A comparison of cooperative and traditional teaching formats in an introductory biology course. *Innovative Higher Education* 21, 253-273.

- Montgomery, K., Brown, S., & Deery, C. (1997). Simulations: Using experiential learning to add relevancy and meaning to introductory courses. *Innovative Higher Education* 21, 217-229.
- Palardo, J. (1975). *Teaching today: tasks and challenges*. New York: Macmillan Publishing Co. Inc.
- Peters, J. et. al., (1963). *Introduction to teaching*. New York: the Macmillan Company.
- Regan, B. (1966). *Modern elementary curriculum*. New York: Holt, Rinehart and Winston Inc.
- UNESCO(1950). *Contemporary Political Science (A Survey of Methods, Research and Teaching)*:Publication No, 416 of the United Nations Educational, Scientific and Cultural Organization, Printed by G. Thone, Liege (Belgium).
- Wood, B. (1960). *Foundations of curriculum planning and development*. Katmandu: Bureau of Publications, College of Education.

Pol. Sc. Ed. 536: Constitution of Selected Countries

Course No: Pol. Sc. Ed. 536

Nature of Course: Theoretical

Level: M. Ed. 3rd semester

Credit: 3

Teaching hours: 48

Periods per week: 3

Time per period: 55 minutes

1. Course Description

This course is designed for the students who specialize in Political Science Education. It aims to provide a theoretical base of constitutionalism and the constitutional provision of different countries. A Constitution is the fundamental law of a country and it is first step of the way to democracy. All governments claim themselves as democratic one by their constitution. The contents of this course have been divided into four units. Each unit deals on the different titles of the courses. After completion this course the students will be acquainted with constitutionalism as the provision of constitution of Switzerland, Japan and People's Republic of China.

2. General Objectives

The general objectives of this course are as follows:

- To acquaint the students with the changing concepts and the development of constitutionalism.
- To help the students understand the working of the constitution of Switzerland.
- To enable the students to describe the constitution of Japan.
- To familiarize the students with the constitution of the People's Republic of China.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Explain the Concepts of Constitution and Constitutional Government • Explain the development of constitutionalism. • State the Varying Concepts of Constitutionalism • Explain the Problems and Prospects of Constitutionalism and its Latest Perspective 	Unit 1: Constitutionalism (10) 1.1 Concepts of Constitution and Constitutional Government 1.2 Development of Constitutionalism 1.3 Changing Concepts of Constitutionalism a. Liberal b. Socialist c. Concepts of Constitutionalism in Developing Countries (Third World) d. Inclusive Theory of Constitutionalism 1.4 Problems and Prospects of Constitutionalism 1.5 Latest Perspective
<ul style="list-style-type: none"> • Describe the constitutional development in Switzerland. • Explain the salient features of the Swiss constitution. • Explain the rights and duties of individuals in Switzerland. 	Unit 2: Constitution of Switzerland. 1848 (10) 2.1 Constitutional development in Switzerland 2.2 Salient features of the Swiss constitution 2.3 Rights and duties of individuals

<ul style="list-style-type: none"> • Explain the composition, powers and functions of the Federal Assembly. • Describe the composition, power and functions of the Federal Council. • Explain the position, power and functions of the president of the confederation. • State the position of federal council. • Explain the relations between the Federal Council and Federal Assembly. • State the organization of the Federal Court. • Explain the jurisdiction of the Federal court. • State the features of Swiss democracy. • Explain the institutions of Swiss referendum and initiative. • Explain the features of Swiss political parties. 	<ul style="list-style-type: none"> 2.4 Federal Assembly <ul style="list-style-type: none"> 2.4.1 Composition 2.4.2 Power 2.4.3 Functions 2.5 The Federal Council <ul style="list-style-type: none"> 2.5.1 Composition 2.5.2 Power and functions 2.5.3 President of the confederation 2.5.4 Federal Council 2.5.5 Relations between Federal Council and Federal Assembly 2.6 The Federal Court <ul style="list-style-type: none"> 2.6.1 Organization 2.6.2 Jurisdiction 2.7 Democracy <ul style="list-style-type: none"> 2.7.1 Referendum 2.7.2 Initiative 2.8 Political parties
<ul style="list-style-type: none"> • Describe the constitutional development in Japan. • Explain the basic, salient features of the constitution of Japan 1946. • Explain the fundamental rights and duties of Japanese people. • Explain the position and functions of the emperor of Japan. • State the composition and functions of the Japanese cabinet. • Explain the power and position of the Japanese Prime Minister. • Explain the composition of the Diet. • Describe the power and functions of the House of Representatives. • Describe the power and functions of the House of Councilors. • Explain the composition, powers and functions of the Supreme Court of Japan. • State the characteristics of Japanese party system. • Explain the role of political parties in Japanese Politics. 	<ul style="list-style-type: none"> Unit 3: The Constitution of Japan -1946 (12) 3.1 Constitutional development in Japan 3.2 The basic salient features of the constitution of Japan 1946 3.3 Fundamental rights and duties of the Japanese people 3.4 The Executive <ul style="list-style-type: none"> 3.4.1 The Emperor 3.4.2 The Cabinet 3.4.3 The Prime Minister 3.5 The Diet (Parliament) <ul style="list-style-type: none"> 3.5.1 House of Representatives (Power and functions) 3.5.2 House of Councilors (Power and functions) 3.6 Judiciary <ul style="list-style-type: none"> 3.6.1 Supreme Court (Composition, power and functions) 3.7 Political Parties (Characteristics and role)

<ul style="list-style-type: none"> • Describe the constitutional development of the People’s Republic of China. • State the salient features of the constitution of the People’s Republic of China -1982. • Explain the general principles of the 1982 constitution of China. • Explain the fundamental rights and duties of the Chinese citizens. • Explain the composition, powers and functions of the National People’s Congress. • Explain the composition, powers and functions of the standing committee of the National People’s Congress. • Explain the position, powers and functions of The President of The People’s Republic of China. • Describe the composition, powers and functions of the State Council. • Describe the composition of the Central Military Commission. • Describe the position and functions of the chairman of the Central Military Commission. • State the judicial structure of The People’s Republic of China. • Explain the composition, power and functions of the Supreme People’s Court.. • Describe the history of The Communist Party of China. • Explain the role of the Communist Party in the present Chinese political system. 	<p style="text-align: center;">Unit 4: The Constitution of People’s Republic of China - 1982 (16)</p> <p>4.1 Constitutional development of the People’s Republic of China</p> <p>4.2 Salient features of the constitution of the People’s Republic of China, 1982</p> <p>4.3 General principles</p> <p>4.4 Fundamental rights and duties of the Chinese citizens</p> <p>4.5 The National People’s Congress (Composition, power and functions)</p> <p>4.6 The standing committee of the National People’s Congress (Composition, power and functions)</p> <p>4.7 The President of the People’s Republic of China (Position, power and functions)</p> <p>4.8 The State Council (Composition, power and functions)</p> <p>4.9 The composition of Central Military Commission</p> <p>4.10 The Judicial System</p> <p>4.10.1 Judicial Structure</p> <p>4.10.2 The Supreme Court (Composition, power and functions)</p> <p>4.11 The Communist Party of China</p> <p>4.11.1 History</p> <p>4.11.2 Role of the Communist party in the present Chinese political system</p>
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4. Instructional Techniques

The instructional techniques in this course are divided into two groups. The first group consists of the general instructional techniques commonly applicable to most of the units and the second group consists of the specific techniques applicable to a specific unit.

4.1 General Instructional Techniques

- Lecture
- Question- answer
- Discussion
- Critical thinking strategies
- Inquiry
- Interaction

4.2 Specific Instructional Techniques

Unit 1, 2.1, 3.1 and 4.1: Self study

Unit 2.4, 3.3, and 4.5: Class presentation

Unit 2.2, 3.2, and 4.2: Group work

Unit 4.11: Seminar

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10× 1	10
2.	Short answer questions (6 with 2 or questions × 5 points)	6× 5	30
3.	Long answer questions (2 with one or questions × 10 points)	2×10	20
	Total	18	60

6. Recommended Books and References

Recommended Books

Johari, J. C. (Reprint 2013). *Comparative Politics* (Fourth Revised ed.). New Delhi, India: Sterling Publishers Private Limited. (For unit I)

Kapur, A.C. and Misra, K. K. (Reprint 2013). *SELECT CONSTITUTIONS* (16th ed.). India: S. Chand Publishing. (For units II, III and IV)

Mahajan, V. D. (1998). *Select modern governments*. New Delhi: S. Chand and company Ltd. (For units II, III and IV)

Strong, C. F. (1963). *Modern political constitution*. London: E. L. B. S. (For unit I)

References

Bhagwan, V. & Bhushan, V. (2011). *World constitutions*. Delhi: Sterling Publishers Pvt. Ltd.

The constitution of the People's Republic of China. (PRC). (1982).

McIlwain, Charles H. 1947 [1940]. *Constitutionalism: Ancient and Modern*. Ithaca, NY: Cornell University Press.

Waldron, J. (2010). *Constitutionalism: A Skeptical View*. New York University School of Law,.

Waldron, Jeremy, "Constitutionalism: A Skeptical View" (2010). *Philip A. Hart Memorial Lecture*. Paper 4.

<http://scholarship.law.georgetown.edu/hartlecture/4>

Pol. Sc. Ed. 537: Federalism

Course No: Pol. Sc. Ed. 537

Nature of Course: Theoretical

Level: M. Ed. 3rd semester

Credit: 3

Teaching hours: 48

1. Course Description

This course is designed for the students who specialize in Political Science Education. It aims to provide a theoretical knowledge of federalism with reference to the federal system of different countries. A Constitution is the fundamental law of a country and federalism is the provision of the constitution. To strengthen the local body federalism has been adopted according to the provision in different countries. A Constitution is the first step of the way to democracy and democratic government tries to strengthen the local body. The contents of this course have been divided into five units. Each unit deals on the different titles of the courses. After completing this course the students will be acquainted with Federalism as the provision of constitution of different countries.

2. General Objectives

The general objectives of this course are as follows:

- To help the students impart the knowledge about the concept, theories and development of federalism.
- To acquaint the students with modern democratic governments have to be guided by the constitution and the power of the central and local government has to be divided constitutionally.
- To make the students familiar with the provision of the constitution of federalism of different countries.
- To orient the students about regional political parties and their impact in federalism
- To orient the students about the recent trends of federalism.

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> Describe the concept and nature of federalism Discuss on the theories of federalism Describe the patterns of federal models of the USA, Swiss and India. Describe the Nepalese movement for federalism Discuss the federal structure of Nepal Analyze the challenges and opportunities of federalism in Nepal 	Unit 1. Concept and Theory of Federalism (16) <ul style="list-style-type: none"> 1.1 Concept and nature of federalism 1.2 Theories of federalism 1.3 Patterns of federal models (USA, Swiss, India) 1.4 Nepalese movement for federalism 1.5 Federal structure of Nepal 1.6 Challenges and opportunities of federalism in Nepal
<ul style="list-style-type: none"> Discuss on the Centre –State relations with reference to Financial powers Discuss on the demand for state autonomy 	Unit 2. Center State Relationship (10) <ul style="list-style-type: none"> 1.1 Center-State Relations with reference to Financial Powers 1.2 Demand for State autonomy
<ul style="list-style-type: none"> Discuss about the problems of Federal unit and Centre about power division Describe the relations of inter- state councils Describe the conditions for successful working of federalism 	Unit 3. Power Division (10) <ul style="list-style-type: none"> 3.1 The Problems of Federal Unit and Centre about power division 3.2 Inter– State Councils 3.3 Condition for successful working of federalism
<ul style="list-style-type: none"> Discuss on the regional political parties and their impact on federal process Discuss on the recent trends and prospects of federalism 	Unit 4: Present Trends in Federalism (12) <ul style="list-style-type: none"> 4.1 Regional Political Parties and their impact on Federal process 4.2 Recent trends and Prospects

4. Instructional Techniques:

4.1 Since this course is purely theoretical the instructional techniques to be used in all the units are suggested as follows:

- Mini picture
- Lecture
- Inquire
- Question- Answer
- Discussion
- Critical thinking strategies

4.2 Besides above mentioned techniques, assignment, report writing and Presentation are also suggested, especially for units 1 and 2.

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10

4.	Second assessment	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10× 1	10
2.	Short answer questions (6 with 2 or questions × 5 points)	6× 5	30
3.	Long answer questions (2 with one or questions × 10 points)	2×10	20
	Total	18	60

6. Recommended Books:

READINGS AND REFERENCE

- Aiyar, S. P. & Mehta, U. (Eds.) (1965). *Essays on Indian Federalism*. Bombay: Allied Publishers.
- Austin, G. (1966). *The Indian Constitution: Corner Stone of a Nation*. Oxford: Oxford University Press.
- Austin, G. (2000). *Working a Democratic Constitution: Indian Experience*. Delhi: Oxford University Press.
- Basu, D. (1994). *An Introduction to the Constitution of India*. New Delhi: Prentice Hall, 1994.
- Bombwall, K. R. (1967). *The Foundations of Indian Federalism*. Bombay: Asia Publishing House.
- Bombwall, K. R. (1978). *National Power and State Autonomy*. Meerut: Meenakshi Prakashan.
- Chanda, A. K. (1965). *Federalism in India: A Study of Union-State Relations*. London: George Allen & Unwin.
- Constitution of USA,
- Franda, M. F. (1968). *West Bengal and the Federalizing Process in India*. New York: Praegar.
- Gupta, D. & Morris-Jones, W. H. (1976). *Patterns and Trends in Indian Politics*. New Delhi: Allied.
- Hanson, H. & Douglas, J. (1972). *India's Democracy*. New Delhi: Vikas.
- Hicks, U. K. (1961). *Federalism and Economic Growth in Underdeveloped Countries*. London: Oxford University Press.
- Khan, R. (1997). *Rethinking Indian Federalism*. Shimla: Indian Institute of Advance Studies.
- Kohli (Ed.), (2001). *The Success of India's Democracy*. Cambridge: Cambridge University Press.
- Kothari, R. (1967). *Party System and Election Studies*. Bombay: Asia Publishing House.
- Kumar, P. (1988). *Studies in Indian Federalism*. New Delhi: Deep and Deep Publications.
- Mukarji, N. & Arora, B (Eds.) (1992). *Federalism in India: Origins and Development*. New Delhi: Centre for Policy Research.
- Pylee, M. V. (2006). *Select Constitutions of the World*. UK: Universal Law Publishing Co.

Pol. Sc. Ed. 538: Theory and Practice of Diplomacy**Course No: Pol. Sc. Ed. 538****Nature of Course: Theoretical****Level: M. Ed. 3rd semester****Credit: 3****Teaching hours: 48****Periods per week: 3****Time per period: 55 minutes****1. Course Description**

This course is designed for the students who specialize in Political Science Education. It aims to provide a theoretical knowledge of Diplomacy to the students. Diplomacy is the skill of any government to tackle the issue of other countries and to settle down the differences of each other. Diplomacy is the subtle method of fulfilling own national interest of any country.

2. General Objectives

The general objectives of this course are as follows:

- To help the students impart the theoretical knowledge about the concept, meaning and the theories of diplomacy.
- To acquaint the students with the diplomatic immunities and privileges.
- To make the students familiar with the Cold War diplomacy between the two superpowers as different kinds of diplomatic relations of different time.
- To orient the students about the issues in contemporary diplomacy.

1. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Describe diplomacy and international relations theory • Describe the meaning, definition, characteristics and historical evolution and diplomacy • Discuss the objectives of the diplomacy • Analyze the functions of the diplomacy • Discuss on diplomatic immunities and privileges 	Unit 1. Introduction to Diplomacy (16) 1.1 Diplomacy and International Relations theory. 1.2 Meaning, definition, characteristics, and historical evolution of diplomacy. 1.3 Objectives of diplomacy 1.4 Function of diplomacy 1.5 Diplomatic immunities and privileges.
<ul style="list-style-type: none"> • Analyze the evolution and nature of Nepalese diplomacy • Describe the provision of diplomacy in the constitution of Nepal, 2072 BS • Discuss on the diplomacy as an instrument of foreign policy 	Unit 2. Nepalese Diplomacy (10) 2.1 Evolution and nature of Nepalese diplomacy 2.2 Present constitution and diplomacy 2.3 Diplomacy as an instrument of foreign policy
<ul style="list-style-type: none"> • Discuss the old and new diplomacy • Analyze the cultural diplomacy • Discuss western and eastern diplomacy • Analyze the non-align diplomacy • Describe military diplomacy • Analyze the Dolor diplomacy 	Unit 3. Types of Diplomacy (14) 3.1 Old and new diplomacy 3.2 The cultural diplomacy 3.3 Western and eastern diplomacy 3.4 Non-align diplomacy 3.5 Military diplomacy

<ul style="list-style-type: none"> • Discuss about democratic diplomacy • Discuss about Track II diplomacy • Describe the role of propaganda and diplomacy 	3.6 Dolor diplomacy 3.7 Democratic diplomacy 3.8 Track II diplomacy 3.9 Propaganda and diplomacy
<ul style="list-style-type: none"> • Discuss on conference diplomacy and summit diplomacy • Analyze on the issues in contemporary diplomacy. 	Unit 4. Contemporary Diplomacy (8) 4.1 Conference and Summit diplomacy 4.2 Issues in Contemporary Diplomacy

4. Instructional Techniques

The instructional techniques in this course are divided into two groups. The first group consists of the general instructional techniques commonly applicable to most of the units and the second group consists of the specific techniques applicable to a specific unit.

4.1 General Instructional Techniques

- Lecture
- Discussion
- Problem solving
- Critical thinking strategies
- Inquiry
- Interaction

4.2 Specific Instructional Techniques

Unit 2: Class presentation

Unit 4: Seminar

5. Evaluation

5.1 Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

S.N.	Nature of Questions	Points
1.	Attendance	5
2.	Participation in learning activities	5
3.	First assessment	10
4.	Second assessment	10
5.	Final assessment	10

5.2 External Evaluation (Final Examination) 60 %

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester (proposed).

S.N.	Nature of Questions	Number of Questions	Points
1.	Objective type question (Multiple choice)	10× 1	10
2.	Short answer questions (6 with 2 or questions × 5 points)	6× 5	30
3.	Long answer questions (2 with one or questions × 10 points)	2×10	20
	Total	18	60

6. Recommended Books:

- C. Beard, *The Idea of National Interest*, New York, McMillian, 1934.
- C. J. Friedrich, *Diplomacy and the Study of the International Relations*, The Clarendon Press, Oxford, 1919.
- C. Roetter, *The Diplomatic Art : An Informal History of World Democracy*, Philadelphia : Macrae, Smith.
- G.K. Mukherjee, *Diplomacy : Theory and History*, New Delhi, Trimurti Publications, 1972.
- H. G. Nicholson, *Diplomacy*, London, OUP, 1963.
- H. Kissinger, *Diplomacy*, SBD Publishers, Delhi, 2000.
- J. W. Burton, *Systems, States, Diplomacy and Rules*, Cambridge University Press, London, 1968.
- K. Antaloiev, *Modern Diplomacy : Principles, Documents, People*, Novesti Press Agency Publishing House, Moscow, 1972.
- L. B. Pearson, *Diplomacy in a Nuclear Age*, Cambridge, Harvard University Press, 1959.
- R. Aron, *Peace and War : A Theory of International Relations*, New York, Doubleday, 1966.
- Sir, W. Hayter, *The Diplomacy of the Great Powers*, MacMillan, New York, 1961.
- Sri D. Busk, *The Craft of Diplomacy : How to Run a Diplomatic Service*, Praeger, New Delhi, 1967.

ICT Education**ICT. Ed. 532: Data Science**

Course No. ICT. Ed. 532

Level: M.Ed.

Semester: Third

Nature of course: Theoretical + Practical

Credit hours: 3 (1T+2P)

Teaching hours: 64

1. Course Description

The aim of the course is to impart knowledge of data science along with data visualization, linear algebra, statistics, probability, data manipulation, data cleansing, rescaling, machine learning, neural network, network analysis along with python to implement all the concepts.

2. General Objectives of the Course

Following are the general objective of this course:

- To familiarize the students with data science basics
- To enhance the skill of students in analyzing, manipulating and cleaning data
- To make the students competent in using statistical tools
- To enable the students to make use of API's
- To make the students knowledgeable about natural language processing, machine learning and recommender system
- To make the students able to write python programs to do different task in the field of data science

3. Specific Objectives and Contents

Specific Objectives	Contents
<ul style="list-style-type: none"> • Understand syntax of python and make use of it • Write programs by using functions, strings, lists, tuples, dictionaries, sets and exceptions • Develop programs with control statements and write different applications like sorting and list comprehension • Utilize randomness, regular expression, enumeration, functional tools, argument unpacking, zipping • Make use of object oriented programming 	<p>Unit 1: Crash Course in Python (Practical) (14)</p> <p>1.1 Getting Python</p> <p>1.2 The Zen of Python</p> <p>1.3 Whitespace Formatting, Modules and Arithmetic</p> <p>1.4 Functions, Strings and Exceptions</p> <p>1.5 Lists, Tuples, Dictionaries and Sets</p> <p>1.6 Control Flow and Truthiness</p> <p>1.7 Sorting, List Comprehensions, Generators and Iterators</p> <p>1.8 Randomness and Regular Expressions</p> <p>1.9 Object-Oriented Programming</p> <p>1.10 Functional Tools</p> <p>1.11 Enumerate</p> <p>1.12 zip and Argument Unpacking</p> <p>1.13 args and kwargs</p>
<ul style="list-style-type: none"> • Give an introduction of data science • Describe its dominance • Make use of matplotlib • Generate Bar Charts, Line 	<p>Unit 2: Introduction to Data Science and Data Visualization (5)</p> <p>2.1 The Ascendance of Data</p> <p>2.2 What Is Data Science?</p> <p>2.3 matplotlib Library</p>

Charts and Scatterplots	2.4 Bar Charts 2.5 Line Charts 2.6 Scatterplots <u>Practical Works</u> <ul style="list-style-type: none"> Write python program to generate bar charts, line charts and scatterplots using matplotlib library
<ul style="list-style-type: none"> Explore Vectors and Matrices Analyze data using methods of central tendencies, dispersion and correlation State and Identify Simpson's paradox Define random variable Identify and make use of probability distributions 	Unit 3: Linear Algebra, Statistics and Probability (9) 3.1 Vectors and Matrices 3.2 Describing a Single Set of Data 3.3 Central Tendencies, Dispersion and Correlation 3.4 Simpson's Paradox 3.5 Dependence and Independence 3.6 Conditional Probability and Bayes's Theorem 3.7 Random Variables and Continuous Distributions 3.8 The Normal Distribution 3.9 The Central Limit Theorem
<ul style="list-style-type: none"> Understand the concept of data IO Read data from different source: flat file, web Make use of API along with JSON and XML too 	Unit 4: Getting Data (Practical) (8) <ol style="list-style-type: none"> stdin and stdout Reading Files <ol style="list-style-type: none"> The Basics of Text Files Delimited Files Scraping the Web Using APIs JSON (and XML) Using an Unauthenticated API Finding APIs <ol style="list-style-type: none"> Example: Using the Twitter APIs Getting Credentials
<ul style="list-style-type: none"> Explore 1D, 2D and Multi-Dimensional Data Illustrate data cleaning, munging, manipulating, rescaling and dimension reduction 	Unit 5: Working with Data (Practical) (4) <ol style="list-style-type: none"> Exploring Data <ol style="list-style-type: none"> Exploring One-Dimensional Data Two Dimensions Many Dimensions Cleaning and Munging Manipulating Data Rescaling Dimensionality Reduction
<ul style="list-style-type: none"> Define Machine Learning Identify overfitting, underfitting and correctness Describe neural network Implement feed forward NN, Backpropagation, 	Unit 6: Machine Learning, Neural Network and Recommender System (14) <ol style="list-style-type: none"> What Is Machine Learning? Overfitting and Underfitting Correctness

<p>defeating a CAPTCHA</p> <ul style="list-style-type: none"> • Deploy Recommender System 	<ol style="list-style-type: none"> 4. The Bias-Variance Trade-off 5. Feature Extraction and Selection 6. Perceptrons 7. Feed-Forward Neural Networks 8. Backpropagation 9. Example: Defeating a CAPTCHA 10. Manual Curation 11. Recommending What's Popular 12. User-Based Collaborative Filtering 13. Item-Based Collaborative Filtering <p><u>Practical Works</u></p> <ul style="list-style-type: none"> • Write python program to implement feed forward NN, backpropagation and defeating CAPTCHA • Write python program to develop recommender system • Write python program to develop user based and item based collaborative filtering
<ul style="list-style-type: none"> • Describe Natural Language Processing • Understand Word clouds, n-gram models and Grammars • Apply Gibbs Sampling • Develop Network Analysis tools • Deploy betweenness centrality, eigenvector centrality and page rank 	<p>Unit 7: Natural Language Processing and Network Analysis (10)</p> <ol style="list-style-type: none"> 1. Word Clouds 2. n-gram Models 3. Grammars 4. An Aside: Gibbs Sampling 5. Topic Modeling 6. Betweenness Centrality 7. Eigenvector Centrality <ol style="list-style-type: none"> 1. Matrix Multiplication 2. Centrality 8. Directed Graphs and Page Rank <p><u>Practical Works</u></p> <ul style="list-style-type: none"> • Write python program to develop network analysis tool • Write python program to deploy betweenness centrality, eigenvector centrality and page rank

4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Providing the reading materials to the students to familiarize the units.
- Lecture, question-answer, discussion, brainstorming, practical, and buzz session.

4.2 Specific Instructional Techniques

Unit	Activity and instructional techniques	Teaching Hours (32)
I-VII	Use python program to implement the data science defined topics.	

Note: *Specific Instructional Techniques may or may not require for each of the units mentioned in course outline.*

5. Evaluation

a. Evaluation (Internal Assessment and External Assessment):

Nature of course	Internal Assessment	External Practical Exam/Viva	Semester Examination	Total Marks
Theory	40%	20%	40%	100%

Note: *Students must pass separately in internal assessment, external practical exam / viva and or semester examination.*

b. Evaluation for Part I (Theory)

i. Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

11) Attendance	5 points
12) Participation in learning activities	5 points
13) First assessment (written assignment)	10 points
14) Second assessment (Term examination)	10 points
15) Third assessment (Internal Practical Exam/Case Study)	10 points
Total	40 points

External Evaluation (Final Examination) 40%

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

5) Objective type question (Multiple choice 10 questions x 1 mark)	10 marks
6) Short answer questions (6 questions with 2 OR choice x 5 marks)	30 marks
Total	40 marks

c. Evaluation for part II (practical) 20%

Nature of the	Semester final examination by External	Total percent
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course	Examiner	
Practical	100%	100

6.3.1 Practical Examination Evaluation Scheme

- a) External assessment100%
 - i) Record book 20%
 - ii) Laboratory work exam/Case.....40%
 - iii) VIVA.....40%

Recommended Books

Joel Grus (2015). Data Science from Scratch_ First Principles with Python, 1st Ed., O'Reilly Media

Jake VanderPlas (2016). Python Data Science Handbook. Essential Tools for Working with Data, 1st Ed., O'Reilly Media

Jesús Rogel & Salazar (2020). Advanced Data Science and Analytics with Python, 1st Ed., CRC Press

ICT. Ed. 533: Digital Pedagogy

Course No.: ICT. Ed. 533

Nature of course: Theoretical + Practical

Level: M.Ed.

Credit Hour: 3 (2+1)

Semester: Third

Teaching Hour: 64 (32+32)

1. Course Description

This course aims to provide educators with the knowledge and skills to effectively integrate technology into their teaching and learning practices. This course will also acquire the knowledge and skills required to design, implement and evaluate digital pedagogical practices in online and blended learning digital platforms and environments using Moodle based LMS.

2. General Objective of the Course:

The general objectives of this course are as follows:

- To synthesis and evaluate different approaches to the use of digital technology in education
- To develop the knowledge and skills required to design, implement, and evaluate digital pedagogical practices in educational.
- To gain the skills to create online and blended learning environments.
- To address ethical and societal issues in relation to the use of digital pedagogy

3. Course Outlines:

Specific Objectives	Contents	Hrs.
<ul style="list-style-type: none"> • Discuss concept of digital pedagogy • Compare Digital literacy and Digital Pedagogy • Explore the elements of Digital literacy • Discuss the different generation and learning style. • Map pedagogy into TPACK framework 	Unit 1: Introduction to Digital Pedagogy <ul style="list-style-type: none"> 1.1 Definition of Digital Pedagogy 1.2 Concept of Digital Literacy and Digital Pedagogy 1.3 Elements of Digital Literacy 1.4 Gen Z and Gen Alpha and learning styles 1.5 Digital pedagogy in TPACK framework 1.6 Online and Blended learning best practices 	8T
<ul style="list-style-type: none"> • Determine the ADDIE framework steps to design course. 	Unit 2: Essential of online course design <ul style="list-style-type: none"> 2.1 Instructional design framework: ADDIE 	6T

<ul style="list-style-type: none"> • Discuss the WCAG standards • Explores the online learner practices and principles • Identify the language and style to design the online course • Sketch the online course structure mapping with prescribe curriculum. 	<p>Model</p> <p>2.2 Visual Design and W3C Accessibility Guidelines (WCAG) 3.0</p> <p>2.3 Engaging Online Learner principle and practices</p> <p>2.4 Language and writing style principle and practices.</p> <p>2.5 Structuring the course contents and mapping with curriculum</p>	
<ul style="list-style-type: none"> • Discuss LMS and MOOC for online and blended learning. • Determine elements of LMS and MOOC. • Demonstrate configuration of LMS system • Demonstrate Course configuration in LMS • Demonstrate the different mode of student enrollment process in LMS 	<p>Unit 3: Configuration of LMS/MOOC platform</p> <p>9. Learning Management System and MOOC Practices</p> <p>10. Elements of Learning Management System</p> <p>11. Elements of MOOC</p> <p>12. Setup LMS platform for teaching learning</p> <p>13. Course configure in LMS</p> <p>14. Student enroll in LMS</p> <p>Practical Work/Case study</p> <ul style="list-style-type: none"> • Design self-learning instruction student for course • Configure Moodle or Similar platform • Course configure in Moodle or similar platform • Student enroll in manual and self-mode 	4T+8P
<ul style="list-style-type: none"> • Develop learning resources plan for defined curriculum to LMS • Demonstrate text-based, audio-visual and interactive learning resources design develop process for LMS • Audit developed learning resources with course objective. 	<p>Unit 4: Design Learning Resources (LR) for LMS</p> <p>4.1 Concept of different types of LR</p> <p>4.2 Design and develop a text-based LR</p> <p>4.3 Design and develop an audio-visual LR</p> <p>4.4 Design and develop interactive LR</p> <p>4.5 Auditing the LR with course objective.</p> <p>Practical Work/Case study</p> <ul style="list-style-type: none"> • Design self-learning instruction student on LR • Develop Student Instruction • Work on LMS with text-based LR. • Work on LMS with audio-visual LR. 	2T+9P

	<ul style="list-style-type: none"> • Work on LMS with interactive LR. 	
<ul style="list-style-type: none"> • Develop learning activities plan for defined curriculum to LMS • Demonstrate assignments, quizzes and collaborative learning assessment design develop process for LMS • Audit developed learning activities with course objective. 	<p>Unit 5: Design Learning Activities (LA) for LMS</p> <p>5.1 Concept of Learning Activities (LA)</p> <p>5.2 Design and develop assignments</p> <p>5.3 Design and develop quizzes</p> <p>5.4 Design and develop collaborative assessment</p> <p>5.5 Auditing the LA with course objective</p> <p>Practical Work/Case study</p> <ul style="list-style-type: none"> • Design self-learning instruction student on LA • Work on LMS with assignments LA. • Work on LMS with quizzes LA. • Work on LMS with collaborative LA. 	2T+9P
<ul style="list-style-type: none"> • Discuss different types assessment methods in digital pedagogy perspectives. • Discuss the elements of learning analytics • Demonstrate student feedback process and track logs. • Explain the LMS and other collaborative tools 	<p>Unit 6: Learning Assessment and Evaluation in LMS</p> <p>6.1 Concept of Assessment and evaluation</p> <p>6.2 Learning analytics</p> <p>6.3 Student feedback and log track</p> <p>6.4 Collaboration work</p> <p>6.5 Integration with other tools</p> <p>Practical Work/Case study</p> <ul style="list-style-type: none"> • Work on LMS with Grade configuration, course completion criteria. • Demonstrate Collaborative Work • Demonstrate collaboration on LMS and another tools 	4T+6P
<ul style="list-style-type: none"> • Define concept of digital citizens and netiquette • Discuss privacy and copy right issues in digital pedagogy • Explain the issues of accessibility and equity ensure • Discuss the digital safety on learning platform and learner end devices 	<p>Unit 7: Legal, Ethical and Social Issues in LMS</p> <p>7.1 Concept of Digital Citizen and Netiquette</p> <p>7.2 Privacy and copyright issues</p> <p>7.3 Accessibility and equity issues</p> <p>7.4 Digital safety in virtual space</p> <p>Practical Work/Case study</p> <ul style="list-style-type: none"> • Case study on accessibility, equity and safety issues on leading MOOC platform: Coursera, 	6T

	edX, Futurelearn, Swayam	
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4. Instructional Techniques

The instructional techniques for this course are divided into two groups. First group consists of general instructional techniques applicable to most of the units. The second group consists of specific instructional techniques applicable to specific units.

4.1 General Techniques

- Providing the reading materials to the students to familiarize the units.
- Lecture, question-answer, discussion, brainstorming, practical, and buzz session.

4.2 Specific Instructional Techniques

Unit	Activity and instructional techniques	Teaching Hours (32)
III-VII	Use Open sources based LMS tools like Moodle, prepare complete learning site with LR, LA and assessment.	

Note: *Specific Instructional Techniques may or may not require for each of the units mentioned in course outline.*

5. Evaluation

a. Evaluation (Internal Assessment and External Assessment):

Nature of course	Internal Assessment	External Practical Exam/Viva	Semester Examination	Total Marks
Theory	40%	20%	40%	100%

Note: *Students must pass separately in internal assessment, external practical exam / viva and or semester examination.*

b. Evaluation for Part I (Theory)

i. Internal Evaluation 40%

Internal evaluation will be conducted by course teacher based on following activities:

16) Attendance	5 points
17) Participation in learning activities	5 points
18) First assessment (written assignment)	10 points
19) Second assessment (Term examination)	10 points
20) Third assessment (Internal Practical Exam/Case Study)	10 points

Total	40 points
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c. External Evaluation (Final Examination) 40%

Examination Division, office of the Dean, Faculty of Education will conduct final examination at the end of semester.

- 7) Objective type question (Multiple choice 10questionsx1mark) 10 marks
- 8) Short answer questions (6 questions with 2 'OR' x 5 marks) 30 marks

Total	40 marks
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d. Evaluation for part II (practical) 20%

Nature of the course	Semester final examination by External Examiner	Total percent
Practical	100%	101

6.3.1 Practical Examination Evaluation Scheme

- b) External assessment100%
- iv) Record book 20%
- v) Laboratory work exam/Case.....40%
- vi) VIVA.....40%

6. Recommended books and reading materials (including relevant published articles in national and international journals)

7. Reference materials

- Nash S. S. & Rice W. (2022). *Moodle 4 e-learning course development the definitive guide to creating great courses in Moodle 4. 0 using instructional design principles* 5th edition (5th ed.). Packet Publishing Limited.
- Howell, J., & McMaster, N. (2022). *Teaching with technologies: Pedagogies for collaboration, communication and creativity* (Second edition). Oxford University Press.
- Vai, M., & Sosulski, K. (2016). *Essentials of online course design: A standards-based guide* (Second edition). Routledge.
- Buchner, A. (2020). *Corporate Learning with Moodle Workplace* (1st edition). Packt Publishing.
- Bonk, C. J. (2009). *The world is open: How web technology is revolutionizing education* (1. ed). Jossey-Bass.
- Smith Nash, S., & Rice, W. (2018). *Moodle 3 e-learning course development: Create highly engaging e-learning courses with Moodle 3* (Fourth edition). Packt.
- Dron, J., & Anderson, T. (2014). *Teaching crowds: Learning and social media*. AU Press.

ICT. Ed. 534: Software ProjectCourse No. : **ICT. Ed. 534**

Level: Master in Education

Semester: Third

Nature of Course: Practical

Credit Hour: 3 hours

Teaching Hour: 64 (0T+3P)

1. Course Description:

The purpose of the course is to give students a thorough understanding of the software development process. This course aims to provide analytical ideas on project management techniques to use on software projects. It is cent percent practical course and focuses on collaboration with team members and also build expertise in all facets of project management including requirements discovery, design, development, validation and deployment. Students are required to develop a software solution to the real world problems under the guidance of an instructor (supervisor).

2. General Objectives:

The general objectives of the course are

- To provide students with advanced understanding about the software development process and project management principles.
- To enable students prepare a proposal for a software project which includes undertaking a review of existing software.
- To develop skills in project planning, scheduling, budgeting, analyzing requirements, designing, implementing, testing, and maintaining software.
- To develop skills ability of a student to manage project, role of project management tools and methodologies.
- To create an analytical report that outlines the project's work and analyzes the outcome and the student's contributions

3. Teaching Learning Strategies**Task 1:**

- a. Research work:** In this part learner must research and prepare documentation for software project development, some of steps that you can take to conduct research for your software project: Need assessment, Identify the problem, Requirements analysis, Identify potential solutions and Evaluate it. Team must prepare research report and should be around 2000 words long and include every element of need assessment.

(10 Hours)

Specific Objectives**Contents**

- | | |
|--|--|
| <ul style="list-style-type: none"> ○ To describe some real world problems and concerns of software project managers ○ To identify the project failure causes, different aspects of project management and to build Project Charter for specific project. | <p>Conduct Research in Software Project</p> <ol style="list-style-type: none"> 1. Project and Project Characteristics 2. Software Project Failures and Major Reasons 3. Different aspects of Software Project Management |
|--|--|

- b. Project Management Plan:** This task is combination of Project management plan and project selection. Students must critically integrate their project management knowledge and abilities at deeper levels for this project to be successful. Students are required to work on team of at most 4 to create a project management plan and prepare project proposal (not more than 2500 words) in prescribed format provided.

(15 Hours)

Specific Objectives

Contents

Conduct Research in Project Planning

- | | |
|---|--|
| <ul style="list-style-type: none"> • To produce an activity plan for the project • To estimate the overall duration of the project • To create a critical path and a precedence network for a project • To prepare project proposal with project management plan. | <ol style="list-style-type: none"> 1. Planning Tasks 2. Work Breakdown Structure (WBS), 3. Activity Planning and Sequencing 4. Project Scheduling and construction of Gantt Chart 5. Make use of Project Management and Review Technique(PERT) / Critical Path Method(CPM) 6. Software quality assurance (SQA) and Test Plan |
|---|--|

- To describe about different estimation techniques
- To describe and apply the COCOMO approach to developing efforts methods

Conduct Research in Software Effort Estimation

1. Study different types of cost estimation techniques
2. How COCOMO is used on cost estimation?

- To identify the factors putting a project risk

Conduct Research in Project Risk Management

1. Identify different aspects of Risk Management: Risk Analysis and Prioritization, Risk Response Planning, Risk Resolution and Risk Tracking and Control

- To categories and prioritize action

for risk elimination and containment

- To quantify the likely effects of risk on project time-scales

Task 2: Project Presentation and Demonstration: This work entails a number of software sprint submissions, a final project presentation, and a system demonstration. Students must finish all planned software releases for this task, presenting the finished product, consider their project's development process.

(24 hours)

Specific Objectives

Contents

- | | |
|---|--|
| <ul style="list-style-type: none"> ○ To identify some of the factors that influence people's behavior in project environment ○ To improve group working ○ To use the most appropriate leadership styles ○ To take steps to reduce unnecessary stress and threats to health and safety | <p>Observe and Understand Behaviors of Human Factors (HF) and Team Organization</p> <ol style="list-style-type: none"> 1. Motivating people 2. Communicating with people 3. Leadership and health safety 4. Learn to resolve Conflict |
|---|--|

Task 3: Project Report: This task consists of a final project report. The report should be approximately 8000-10000 words and document the details of development frameworks, technologies, and tools, all software processes involved, specification, design, testing and evaluation reports, and impact of the project processes/outcomes in prescribe format. **(15 Hours)**

5. Description of the Project Work:

The work carried out must be a practical, problem-solving convincing project. It should be a real world project in the sense that the product should be useful practically as far as possible.

4.1 Group formation

Students can perform project individually or in a group (maximum of 4 students).

4.2 Procedure

The students should exercise the following three phases for this course.

1. Project selection and project proposal submission (task 1)
2. Mid-Term Defense (task 2)
3. Final Project Submission and Defense (Task 2 and 3)

a. Project selection and project proposal submission

- Students(s) prepares proposal document in the prescribed format and submits to the Department of Education in the College
- The HOD/Program Coordinator or a panel coordinated by him/her evaluates the proposal with or without a presentation from the student(s)
- If the proposal is accepted; a Supervisor is assigned by HOD/Coordinator depending upon the nature of the project

b. Mid Term Defense

- The project team has to face a Mid Term Defense after first 40% to 60% of the project duration so that the supervisor and internal evaluator are assured of the progress of the project.

c. Final Defense

Project team submits a complete project report in the prescribed format to the department

- The department then Schedules the day for final defense
- External Supervisor will be decided and will be called for the final defense
- The project team needs to give presentation, followed by viva question answer session.

4.3 Prescribed Format of the Proposal

1. Introduction
2. Problem Statement

3. Objective
4. Scope and Limitation
5. Literature Review
6. Methodology
 - a. Requirement Identification
 - Study of existing system
 - Requirement collection
 - b. Feasibility Study
 - Technical
 - Operational
 - Economical
 - c. Tools
 - Analysis and Design Tools
 - Implementation tools (Front End, Back End)
7. High level design of Proposed System (by system flow chart, use cases or other appropriate diagrams)
8. Gantt Chart to show the projected time planning
9. Budget
10. Expected Outcome
11. References

4.4 Prescribed Format of the Project Report

The sequence in which the project report material should be arranged is as follows:

- Cover page and Title
- Candidate's Declaration
- Supervisor's Certificate/ Recommendation
- Internal, External Examiners' Approval
- Acknowledgements
- Abstract
- Table of Content
- List of Figures / Tables / Listings
- Abbreviations
- 1. Chapter ONE Introduction**
 - 1.1 Background
 - 1.2 Problem Statement
 - 1.3 Objective
 - 1.4 Scope and Limitation
- 2. Chapter TWO Literature Review**
- 3. Chapter THREE Methodology**
 - 3.1 Requirement Identification
 - 3.1.1 Study of existing system
 - 3.1.2 Requirement collection
 - 3.2 Feasibility Study
 - 3.2.1 Technical
 - 3.2.2 Operational
 - 3.2.3 Economical
 - 3.3 Tools
 - 3.3.1 Analysis and Design Tools
 - 3.3.2 Implementation tools (Front End, Back End)
- 4. Chapter FOUR High level design (by system flow chart, use cases or other appropriate diagrams)**
- 5. Chapter FIVE Testing and Evaluation: (testing methodology and results, including test cases, test plans and performance metrics.)**
- 6. Chapter SIX Conclusion and Future Work**
- References /Bibliography
- Appendix

5. Number of Copies to be submitted to the Department

Three hard copies of the report are to be submitted to the Department after corrections done as suggested by guide/Department at any time when report submission is called by guide/Department. The total numbers of reports to be prepared are three

- One copy to the college
- One copy for University
- One copy to candidate

Before taking the final printout, the approval of the concerned guide is mandatory and Suggested corrections, if any, must be incorporated. The reports submitted to the department/guide(s) must be hard bounded with black cover with golden color alphabets.

5.1 Standard to be followed

The report must be printed on one side only. Please use a high-resolution printer, preferably a laser printer with at least 300 dpi.

A. Page Layout

Your paper must use a page size corresponding to A4 which is 210mm (8.27") wide and 297mm (11.69") long.

The margins must be set as follows:

- Top = 1 inch
- Bottom = 1 inch
- Left = 1.25 inch
- Right = 1 inch

B. Page Style

- All paragraphs must be indented. All paragraphs must be justified aligned with 1.5 spacing

C. Text Font of Entire Document

- The entire document should be in Times New Roman.
- The font size has to be 12 throughout

D. Section Headings

- No more than 3 levels of headings should be used.
- Font size for the headings will be 16, 14, 12

E. Figures and Tables

- Position figures and tables at the tops and bottoms pages. Tables and figures may be full-page width or may be partial page.
- Width with wrap on either side.
- Figure captions should be centered below the figures. Table captions should be centered above.

F. References

- For reference students must follow APA format.

6. Evaluation:

Proposal	Mid-Term Defense	Final Defense	Total Marks
25 Points	25 Points	50 Points	100 Points

6.1 Evaluators:

Project Supervisor (Mentor of the project)	-40%
Internal (HOD/Program Coordinator or decided by Coordinator)	-20%
External Supervisor	-40%

6.2 Duration (for 1 group)

- Presentation 20 minutes
- Viva 15 minutes
- Demonstration 15 minutes
- Report checking 10 minutes

7. References

Marchewka, J. T. *Information Technology Project Management*. Leyh Publishing LLC, USA

Schwalbe, K 2019, *Information technology project management* Ninth Edition., Cengage, Australia

ICT. Ed. 535: Visual Programming

Course No.: ICT. Ed 535

Nature of course: Theoretical + Practical

Level: M.Ed.

Credit Hours: 3

Semester: Third

Teaching Hour: 64 hours (32+32)

1. Course introduction

This course provides modern software development skills with a graphical user interface using C# with ASP.net. The course covers most of the C# language. Students will build window- and web-based forms, add controls, and set their properties.

2. Objective of the course

- Allows students to create user controls in Windows Forms applications using the Visual Programming Platform.
- The student will prove proficiency in Flow Control and Decision-Making using C# code syntax and language elements.
- Provide students with the knowledge and skills needed to validate user input in Windows Forms applications
- To enable students to link Windows Forms applications to various data sources using Microsoft ADO.NET
- Enhance students' ability to create ASP.NET Web Application projects using .NET.
- To enable student to work with new .NET technologies using Blazor and Xamarin

3. Course Outlines

Specific objectives	Course contents	Teaching hours (T+P)
<ul style="list-style-type: none"> • Describe the need for visual programming and how it differs from traditional text-based programming. • Explore the graphical user interface (GUI) and its importance in visual programming. • Explain about Rapid Application Development (RAD) tools and techniques • Understand the event-driven programming paradigm • Describe how to set up and configure the development environment and ide, including visual studio and vs code. 	<p>Unit 1: Visual Programming and C#</p> <p>1.1. Overview of Visual Programming, The need of Visual Programming</p> <p>1.2. Graphical User Interface and different types of Visual Programming Practices</p> <p>1.3. Rapid Application Development (RAD) Tools and Techniques</p> <p>1.4. Event driven programming paradigm and C#</p> <p>1.5. .NET Features, programming model and Architecture</p> <p>1.6. Environment and IDE Setup and Configuration: Visual Studio and VS Code</p>	4T+2P
	<u>Practical Works:</u>	
	<ul style="list-style-type: none"> • Implementing event-driven programming paradigm using C# and .NET features, such as delegates, events, and lambda expressions, to respond to user actions and system events • Setting up the development environment and IDE configuration, including Visual Studio and VS Code, for developing visual 	

programming applications. This includes configuring settings, installing necessary components and extensions, and working with different project types.

- Describe how to convert one data type to another, including implicit and explicit conversions.
- Describe and discuss about different types of loops, including for, while, and do-while loops, and understand their syntax and use cases.
- Analyze the concept of multi-dimensional arrays and how they can be used to store and manipulate data.
- Describe the concept of structures
- Describe the concept of enumerations
- Discuss the concept of regular expressions
- Describe the concept of collections
- Apply C# Language Basics in creating and writing programs

Unit 2: C# Language Basics

2T + 2P

- 2.1. Data Types and namespaces
- 2.2. Type Conversion
- 2.3. Flow controls: Looping and iterations
- 2.4. Arrays
- 2.5. Structures, Enumerations
- 2.6. Strings, Regular Expressions and Collections

Practical Works:

- Creating C# programs that define different data types and use them in various ways
- Using namespaces to organize code and prevent naming conflicts between classes
- Writing programs that demonstrate different ways to convert data types.
- Creating programs that use different types of loops to perform various tasks
- Creating programs that use arrays to store and manipulate data
- Using multi-dimensional arrays to represent complex data
- Creating programs that define custom structures and enumerations to represent data in a more meaningful way
- Creating programs that use strings and regular expressions to manipulate and validate user input
- Using collections such as lists and dictionaries to store and manipulate data in a flexible and dynamic way.

- Describe about classes and objects and how they are used to create software applications.
- Analyze the concept of method overloading and overriding and how it allows you to define methods with the same name but different parameters.
- Explain how to define and use abstract classes and methods
- Analyze the concept of Inheritance, Interfaces, Encapsulation, Polymorphism, Abstraction and Visual Inheritance and how it allows

Unit 3: Object Oriented Concepts in C#

5T + 5P

- 3.1. OOP Structure, Class and Object
- 3.2. Method Overloading, Method Overriding
- 3.3. Abstract Classes and Abstract Methods
- 3.4. Inheritance, Interfaces, Encapsulation, Polymorphism, Abstraction and Visual Inheritance
- 3.5. Exceptional handling: System defined exceptions and custom exceptions, Throwing Exceptions
- 3.6. Parallel Programs, Concurrent Collections

Practical Works:

- Creating classes, instantiating objects,

you to create new classes based on existing ones.

- Describe the concept of throwing exceptions and how it allows you to handle errors
- Understand the concept of parallel programming and its benefits.
- Discuss the concept of concurrent collections
- Demonstrate method overloading, method overriding, abstract classes, and abstract methods.
- Create a class hierarchy that demonstrates inheritance and polymorphism, using interfaces to define a common set of behaviors, encapsulation, and visual inheritance is part of these works.
- Demonstrate the parallel program involves using multiple threads to perform a CPU-bound task, and concurrent collections are used to safely share data between threads in a multi-threaded program.

- Describe about various data access technologies available, including ADO.NET, LINQ to SQL, and Entity Framework.
- Learn about the different components of ADO.NET, including Connection, Command, DataReader, and DataSet.
- Discuss how to connect to a database using ADO.NET and how to execute basic SQL commands.
- Analyze the different types of .NET data providers and how to use them to connect to different databases.
- Explain how to create and execute commands using the Command object.
- Describe how to create and work with DataTable, DataRow, and DataColumn objects.
- Analyze the concept of LINQ to SQL and how it can be used to perform database operations using LINQ queries.
- Discuss the concept of WPF and

demonstrating method overloading, method overriding, abstract classes, and abstract methods.

- Creating a class hierarchy that demonstrates inheritance and polymorphism, using interfaces to define a common set of behaviors, encapsulation, and visual inheritance is part of these works.
- Exception handling practices include using system-defined exceptions and custom exception classes, and parallel programs and concurrent collections are part of the practical work.
- Demonstration of the parallel program involves using multiple threads to perform a CPU-bound task, and concurrent collections are used to safely share data between threads in a multi-threaded program.

Unit 4: ADO.NET and WPF (Windows Presentation Foundation) 4T + 6P

- 4.1. Data access Technologies
- 4.2. ADO.NET Architecture
- 4.3. Data access using ADO.NET
- 4.4. ADO.NET Connections: .NET Data providers, Connection classes, Strings, Pooling, Events
- 4.5. ADO.NET commands: Command object, creating, executing commands,
- 4.6. Batch queries and stored procedures
- 4.7. Datasets, DataTable, DataRow, DataColumn and updating database from a DataSet
- 4.8. LINQ to SQL and DataSet
- 4.9. WPF Controls, Layouts, Dialogs, Menus, Commands and Data bindings

Practical Works:

- Write a program that demonstrates how to interact with a database using different data access technologies, such as ADO.NET, Entity Framework.
- Understand the architecture of ADO.NET, including the role of the Data Provider, Connection, Command, DataReader, and

how it can be used to create modern user interfaces.

- Discuss the concept of data bindings and how it can be used to connect UI elements to data sources.

DataSet objects.

- Write a program that demonstrates how to use ADO.NET to interact with a database, including connecting to a database, executing queries, and retrieving data.
- Understand the different .NET data providers available in ADO.NET and their respective connection classes, such as SqlConnection and OleDbConnection. Use connection strings to connect to a database and handle connection pooling and events.
- Understand the Command object in ADO.NET and how to create and execute commands, including batch queries and stored procedures.
- Use Datasets, DataTables, DataRows, and DataColumn to store and manipulate data retrieved from a database. Use DataAdapters to update the database from a DataSet.
- Use LINQ to SQL to retrieve and manipulate data from a database using LINQ queries. Compare and contrast with using Datasets and DataAdapters.
- Create a Windows Presentation Foundation (WPF) application that uses different types of controls, such as buttons, text boxes, and data grids. Use layouts to arrange controls on the window and create dialogs and menus to interact with the user. Use commands and data bindings to respond to user input and update the user interface.

- Describe how to create web applications using ASP.NET MVC and its features, including controllers, views, and models.
- Describe how to create RESTful APIs using ASP.NET Web API and its features, including routing, controllers, and models.
- Describe how to create dynamic web pages using Razor templates, including layouts, views, and partial views.
- Explain how to perform CRUD (Create, Read, Update, Delete) operations on data using Razor Pages.
- Demonstrate skills to implement

Unit 5: ASP.NET and ASP.NET Core

5T + 5P

5.1. C# and ASP.NET with ASP.NET Core

5.2. ASP.NET architecture

5.3. Web applications using ASP.NET and ASP.NET MVC

5.4. RESTful APIs with ASP.NET Web API

5.5. ASP.NET Core Razor templates

5.6. Razor pages and CRUD Operation

5.7. Authentication and Authorization

5.8. ASP.NET Core middleware

5.9. Deployment (Azure, Docker, AWS)

Practical Works:

- Writing C# code for web development using ASP.NET and ASP.NET Core
- Understanding the architecture of ASP.NET, including the HTTP pipeline

authentication and authorization in ASP.NET Core using different authentication schemes and authorization policies.

- Demonstrate skills to create and use middleware in ASP.NET Core to modify the request and response pipeline.
 - Analyse and apply the different options for deploying ASP.NET Core applications, including Azure, Docker, and AWS.
- Building web applications using ASP.NET and ASP.NET MVC, with models, views, and controllers
 - Creating RESTful APIs using ASP.NET Web API, with routes, actions, and authentication/authorization
 - Generating dynamic HTML content in ASP.NET Core with Razor templates and syntax
 - Using Razor pages for CRUD operations and user input/output, with model binding and dynamic content generation
 - Implementing authentication and authorization with standard schemes and role/attribute-based authorization
 - Understanding the role of middleware in the ASP.NET Core pipeline, with the ability to create custom middleware for specific functionality
 - Deploying ASP.NET and ASP.NET Core applications to cloud platforms like Azure, Docker, and AWS, with configuration and automation using deployment tools like Visual Studio.
- Describe about the different types of Blazor, including server-side and client-side Blazor.
 - Analyze the Blazor component model and how to create UI and components.
 - Describe the concept of validation in a web application.
 - Describe the concept of Razor Class Libraries.
 - Demonstrate skills to create reusable components and libraries using Razor.

Unit 6: Web Applications with Blazor

5T + 5P

- 6.1. Blazor overview
- 6.2. Building a web app with Blazor: UI, Components, Data binding, data sharing, events and event handlings
- 6.3. Blazor pages, layouts, routing, navigation
- 6.4. Reusable Blazor components using Layouts
- 6.5. DOM events with Blazor event handlers
- 6.6. Server-side and client-side validation to the form
- 6.7. Application interactivity with lifecycle events
- 6.8. Razor class library concept and creation.

Practical Works:

- Build a web application using Blazor, including designing the user interface, creating and using components, implementing data binding to display and manipulate data, sharing data between components, and handling events.
- Create Blazor pages and layouts to organize the application's content and implement routing and navigation between pages.

- Create reusable Blazor components using layouts and demonstrate how they can be used across multiple pages and applications.
 - Handle DOM events in Blazor using event handlers, such as onclick or onchange, and perform actions in response to those events.
 - Implement validation in a Blazor form to ensure that data entered by the user meets certain criteria. Use both server-side and client-side validation to provide a better user experience.
 - Use lifecycle events, such as OnInitialized or OnAfterRender, to add interactivity to a Blazor application, such as updating the UI in response to changes in data.
 - Understand the concept of a Razor class library in Blazor and create a library that can be reused across multiple Blazor applications.
- Describe the concept of cross-platform development and its importance in software development.
 - Explain about the basic XAML elements, including layouts, controls, text, data bindings, styles, and graphics.
 - Explain how to use XAML in Xamarin development and how to define user interfaces using XAML.
 - Describe when to use Xamarin and when to use Xamarin.Forms for cross-platform development.
 - Analyze the different types of Xamarin form controls, including layouts, pages, views, and cells.
 - Discuss User Interface (Styles, Navigations, Maps, ListView) and Themes (Light, Dark, and Custom Build):
 - Describe the basics of working with databases in Xamarin development.
 - Explain how to use SQLite.NET to create, read, update, and delete records in a SQLite database.
 - Describe how to develop Android

Unit 7: Cross-Platform Development with Xamarin 7T + 7P

- 7.1. Overview of Xamarin and Cross-Platform Development
- 7.2. MVC and MVVM design patterns for Cross-Platform Development
- 7.3. XAML Basics: Layouts, Controls, Text, Data bindings, Styles and Graphics
- 7.4. XAML and Xamarin
- 7.5. Xamarin vs Xamarin.Forms
- 7.6. Xamarin Form Controls: Layout, Page, Views, Cells
- 7.7. Navigation: Patterns, Modal Views, Drill-downs, Tabbed views, Master-Detail views.
- 7.8. User Interface (Styles, Navigations, Maps, ListView) and Themes (Light, Dark and Custom build)
- 7.9. Working with SQLite.NET database
- 7.10. Android Development with Xamarin: Creating views, Calling Services, OAuth 2.
- 7.11. Deploying application

Practical Works:

- Install Xamarin on your development machine and create a "Hello World" application to test your installation.
- Implement an application using the Model-

applications using Xamarin.

- Explain how to publish and distribute Xamarin applications to app stores and other distribution channels.

View-Controller (MVC) and Model-View-ViewModel (MVVM) design patterns.

- Create a XAML file that defines a simple user interface with layouts, controls, and text, apply styles and graphics to your user interface to enhance its appearance.
- Create a Xamarin Forms project and use XAML to define the user interface, Use XAML to create custom controls for your Xamarin Forms application.
- Create a sample application using both technologies and compare the development experience and end result.
- Use the layout control to create a responsive user interface for your Xamarin Forms application.
- Implement a modal view in your Xamarin Forms application.
- Use the master-detail view pattern to create a navigation menu for your application.
- User Interface (Styles, Navigations, Maps, ListView) and Themes (Light, Dark and Custom build):
- Implement a custom theme in your Xamarin Forms application, use maps and location services to enhance the functionality of your application.
- Create a list view that displays data in a user-friendly way.
- Integrate SQLite.NET into your Xamarin Forms application.
- Use SQLite.NET to create, read, update, and delete data from a local database.
- Create a custom view and call a web service in your Android Xamarin Forms application.
- Implement OAuth 2 authentication in your Android Xamarin Forms application.
- Create a package of your Xamarin Forms application for the Android or iOS app store.
- Deploy your application to a remote server using Microsoft Azure.

4. Instructional Techniques

The techniques taught for this course are divided into two groups. The first group covers general teaching techniques that apply to most lessons. The second group covers specific teaching techniques applied to specific units.

4.1. General techniques

- Provide reading material to familiarize students with the units.
- Lectures, Q&A, discussions, brainstorming, practice and buzz sessions.

4.2. Special Instructional techniques

Demonstration is an essential teaching technique for all units of this course in the teaching and learning process. In particular, illustration by real work will be a specific teaching technique in this course. Details of suggested teaching techniques are presented below.

Lab works: Students must create a fully functional dynamic website that reflects all of the core technologies studied in this course.

Note: Specific teaching techniques may or may not be required for each unit covered in the course outline.

5. Evaluation

Internal Assessment	Semester Examination	External Exam/ Viva	Practical	Total Marks
40 Points	40 Points	20 Points		100 Points

Note: Students must pass an internal assessment, an external practice exam, and a separate semester exam.

5.1. Internal evaluation (40 Points)

Internal assessment will be conducted by the subject teacher based on the following criteria:

a. Class Attendance	5 points
b. Learning activities and class performance	5 points
c. First assignment (Written assignment)	10 points
d. Second assignment (Case Study/Project work with presentation)	10 points
e. Terminal Examination	10 Points

Total	40 Points
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5.2. Semester examination (20 Points)

The Examinations Department, Dean Office will conduct and organize the final examination at the end of semester.

a. Objective question (Multiple choice 10 questions x 1mark)	10 Points
b. Subjective answer questions (6 questions with 2 'OR' x 5 marks)	30 Points

Total	40 Points
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5.3. External practical Exam/ Viva (40 Points)

The practical part of the course will be assessed by an external examiner. Practical exam will be based on following criteria.

a. Record Book	6 points
b. Lab work Exam/ Case / Project	9 points
c. VIVA	5 points
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Total	20 Points

6. Recommended books and Reference materials (including relevant published articles in nation and international journals)

Alessandro Del Sole (2022). Xamarin with Visual Studio: Launch your mobile development career by creating Android and iOS applications using .NET and C# (English Edition), BPB Publications.

David Pine (2022). Learning Blazor, O'Reilly.

Albahari, J., Albahari, B., & Drayton, P. (2012). C# 5.0 in a nutshell (5th Ed). Beijing ; Sebastopol: O'Reilly.

Esposito, D. (2014). Programming Microsoft ASP.NET MVC (Third edition). Sebastopol, California: O'Reilly Media, Inc.

Ian Griffiths (2012), Programming C# 5.0, O'Reilly Media, Inc.

Evjen, B., Hanselman, S., & Rader, D. (2010). Professional ASP.NET 4 in C# and VB. Indianapolis, IN: Wiley Pub.

Sharp, J. (2013). Microsoft Visual C# 2013 step by step.

Stellman, A., & Greene, J. (2013). Head first C# (Third edition). Beijing: O'Reilly.
