



Tribhuvan University Faculty of Education

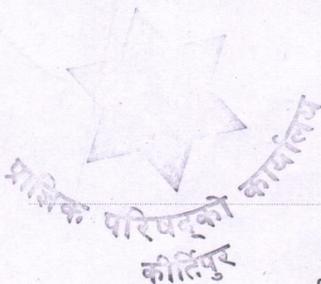
ADVANCED STUDY PROGRAM IN DIGITAL PEDAGOGY

Preparing Teacher for the 21st Century

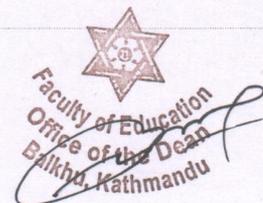
2023

Master of Educational Science/Post-Graduate Diploma in Digital Pedagogy (MES DP/PGD DP)
(Program and Curriculum)

Office of the Dean
Faculty of Education
Tribhuvan University
Kathmandu, Nepal
January 2023



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Brief Introduction of Pedagogy and Digital Pedagogy

Teaching is meant to enhance teachers' professional practice. It is not a simple application of theoretical knowledge that one studied or practical skills they learnt. As a mass phenomenon, teaching consists of a series of activities that is always new and positioned in unique situations. In this sense, it is an art, a science and both (Bayer, Brinkkjær, Plauborg, & Rolls, 2009).

Teaching today is very much aligned with an Eurocentric concept of didactics (Hopmann, 2007) which constitutes three core principles: building; matter and meaning; and autonomy. For Hopmann, didactics is a process to unfold the capabilities of students' "I", which is not only the degree that students master, but includes if and how their educative substance opens the meaning as intended (Hopmann, 2007). Hopman's didactic perspective of teaching is compatible with 21st century education where knowledge is moving faster. In the past, if someone discovered new knowledge, it could take a generation to be known in the rest of the world. Today, it will spread within 24 hours or even in less time around the world using internet and social Masteria like Facebook, Twitter, and others. Therefore, teaching must address this kind of knowledge acquisition and dissemination process rather than just the information display.

It is accepted that teaching is ultimately for students' learning. Teachers, therefore, need to design and implement teaching with resources, activities, and assessments that enhance student learning. In order to ensure this, we see that expert pedagogue (Berliner, 1986) effectively play between human and machine to perform didactics (Hopmann, 2007), using a "Bag of tricks" (Joram, 2007), and letting "no one left with nothing in hand" by the interplay between art and science (Bayer et al., 2009).

ICT innovation has changed the landscape of the educational governance through F2F (face to face), blended, hybrid and online mode of teacher teaching, and therefore learner's learning. In recent days, online, hybrid and blended learning environment are helping learners to connect home, school, and other spaces for anytime anywhere learning opportunity whenever required (Downes, 2005). With this concept, the term Digital Pedagogy (DP) is formalized working with pedagogy using digital tools with three process steps: a) dissemination of learning resources digitally, b) engaging students with learning activities digitally and, c) accessing students' learning (of, for, as) digitally.

Background of the Program Master/PGD in Digital Pedagogy

Digital Nepal Framework (2019) includes digital integration as a core development agenda in education sector. Smart classrooms, online learning platform, educational management information system (EMIS), mobile learning centers in rural areas are the key priorities of the Digital Nepal Framework. Similarly, digitalization in education have received attention in Nepalese educational reforms as reflected in the policy and planning documents that include Open Education and Distance Learning Policy 2007, Directives on Distance Education/Open Learning Program 2007 with its third amendment (2014), Information and Communication Technology (ICT) in Education Master Plan 2013-2017 (Government of Nepal, Ministry of Education, Science and Technology - MoEST) and Higher Education Policy Framework – 2018. Similarly, a recent Education Policy Document, 2020 has indicated the need for reforming the existing mode of education by strengthening the pedagogical experience and focusing on ICT and 21st century skills at all levels of education.

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This indicates that the government has now given due focus on digitization and ICT integration across the disciplines. Ministry of Education, Science and Technology (MOEST) and their constituents have emphasized ICT integration, digitalization and use of digital tools and online resources in teaching and learning as integral parts of educational reforms.

Universities in Nepal including Tribhuvan University have also started dual mode of education (Face-to-Face mode and blended mode). However, the workforce required to effectively deliver these blended and online programs is scarce and existing mode of teacher education cannot address the emerging technological and pedagogical changes for 21st century teachers. In this context, the traditional mode of teacher education needs to be reviewed and/or new modes of teacher education need to be introduced with a focus on digitization, virtual learning, online resources and 21st century skills. Therefore, this program is developed to address this gap in teacher education. This teacher education program is developed in collaboration with the JAMK University of Applied Sciences, HAMK University of Applied Sciences, Finland, and NOU Nepal under the support of the HEI ICI program.

Introduction to the Master and Post-Graduate Diploma Program

Considering the recent focus on the widespread use of technology and digitalization efforts in schools and higher education in Nepal, this teacher education program on master's in digital Pedagogy (or Post Graduate Diploma in Digital Pedagogy) is prepared to address the nation's need to supply expert pedagogue having sound skills on integration of emerging technological and 21st century skills in their professional work through both regular full-time study and part time study plan.

Master of Educational Science in Digital Pedagogy (MESDP) is an advanced study program that is designed to support professional development of teachers who have already earned the Master's Degree in any discipline and experience in teaching and training. MESDP is a blended and flexible program that intends to develop knowledge and skills required to apply methods and strategies of digital pedagogy including twenty-first century skills in classroom effectively. This is three-semester (18 months) fulltime course. Indeed, being a flexible master program, individuals can be enrolled in part-time program and can complete all prescribed course with a duration of six years.

A detailed baseline survey was carried out to identify the gaps in the existing teacher education programs to find out the status of teachers' awareness and use of digital pedagogy 21st century skills in class. Based on it, this course was developed to address a group of competencies required for this program; and developing the implementation program with piloting for its refinement. Additionally, consultation was also made with the multi-sector stakeholders of education and te experts from the universities in Nepal and Finland along with the officials of the Ministry of Education in Nepal during the process.

The program follows competency-based teacher education model. Its principles are conceptualizing the teacher education as readiness for adopting the change, recognizing desired competencies for the future, identifying the gaps in the existing mode of educational delivery through research. The program includes courses on

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theories of education; curriculum and instruction; assessment and evaluation; learning management system, emerging innovations of ICTs in education; guidance and counseling; and research and practices using digital tools.

Rationale for the Program

The fundamental political change in Nepal shifted the country into the federal republic with a new constitution that has envisioned ensuring fundamental rights, equity, justice, and distribution of progress with equal share to people of Nepal. Rights to education for all is one of the major constitutional commitments. Education function now is distributed to the three tiers of the government and, thus, the responsibility of school education is handed over to the local government. This decentralization of education function at the state will facilitate to increase access of education and quality education to the disadvantage groups and regions. Therefore, re-engineered teacher education program to produce competent teachers to supply quality education are the fundamental elements to ensure access of quality education for all.

Teacher Education in Nepal has decades long history in preparation of teachers through pre-service education and in-service training program. Efforts have been made to adapt the teacher education programs relevant to changing societal contexts to produce quality teachers of the national needs. The driving forces of the teacher education program are the national education policy, national framework of sustainable development goals in education, intervention of information and communication technology in education. The education policy (2019) has indicated that students in teacher education programs will be graduates from different specialization areas and they will be provided competences on add. Similarly, Government of Nepal has approved National Qualification Framework (NQF) which has outlined major competencies based on the learning outcomes rising educational issues and necessary pedagogies in the relevant specializations.

However, the existing teacher education programs of different universities in Nepal mostly focus on the subject specific contents and generic pedagogy. This program focuses on the preparation of subject specific educators with generic, digital, subject specific pedagogical competencies. Moreover, research on effectiveness of teacher training has given some implications pointing out the strengths and weakness inherent in the existing teacher training program suggesting areas of necessary reform particularly on pedagogical aspects including the updated content knowledge required in teacher education to meet the changing needs of the teachers for the 21st century schools and colleges.

Growing level of technological intervention in different service sectors including education in the world and its consequential intervention in Nepalese society is unavoidable. It is, therefore, necessary to rethink on teacher education in the light of the constitutional provision, information communication technologies intervention in education, government's national and international commitments of ensuring quality education for all, education and ICT policy framework including the present issues of teacher education in Nepal.

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Sustainable Development Goals 4 (SDG4) has emphasized inclusive quality education for all; introduction of information and communication technologies in education sectors as tools for administration and pedagogies; and discipline specific ICTs programs at schools and higher education. Ministry of Education, Science and Technology (MOEST) has disseminated a comprehensive education policy for school to higher education that has emphasized the use of ICTs, focus on Science, Technology, Engineering, Arts and Mathematics (STEAM) education and 21st century skills. In addition, the policy has enforced on reform in the existing teacher education program in a different framework focusing on teacher education program on pedagogy, educational studies, and research in educational issues (Education Policy, 2019).

In this context, this Master/PGD in Digital Pedagogy program is conceptualized rethinking the existing teacher education program in the perspectives of ICT and 21st century skills integration and digitalization in educational delivery and addressing the national policies that education must take into consideration. Linking to the concerns, knowledge, skills, and attitude in teacher's professional work are the focused aspects in this program.

Objectives of the Program

The objectives of the Master/PGD in Digital Pedagogy program are as follows.

1. Introduce a pedagogical skill focusing on ICT and 21st century skills integration to generic pedagogical and content knowledge to prepare competent teachers in Nepal.
2. Enhance university teacher educators/facilitators' digital pedagogical and digitization competencies to run the program in university system and cascade it to prepare pedagogically qualified teachers around the country in collaboration with the education units of the provincial and local governments.
3. Support to institutionalize education program in the university systems in flexible mode of employing both conventional and online mode of delivery.

Core Values of the Program

The program will embed some core values as cross-cutting themes in its design and implementation. Firstly, the program encompasses digital literacy and 21st century skills as the common core elements in all the courses. This means, course participants are expected to be using digital tools and practice 21st century skills in all the courses. Secondly, the program will ensure the participation of all teachers irrespective of gender, ethnicity, geographical areas, and remoteness. Thirdly, the program will be based on experiential learning mode along with the ethical principles. In brief, the program will include following core values:

- a) Digital literacy and 21st century skills
- b) Inclusion and equity
- c) Experiential learning and ethics

Competency Areas of the Program

The Master/PGD in Digital Pedagogy program graduates encompasses the following competency areas.

- a) **Digital Pedagogy and Didactics:** The course participant has knowledge and understanding of learning, which refers to teacher's awareness of the research-based theoretical and practical starting points pertaining to learning. They can

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- apply appropriate pedagogical theory/theories in their work as a teacher; and plan, implement and assess teaching and learning using digital tools.
- b) **21st Century Skills:** The course participant uses critical thinking skills to better understand the world rather than taking things for granted. They view world realities from multiple perspectives and draw the meaning of the world based on their analytical and evaluation skills.
 - c) **Communication and Interaction:** The course participant can effectively communicate with students on all matters concerning learning; as well as motivate and inspire them to learn. They can encourage students not only to participate actively in the learning process but also to contribute to the discussion for mutual learning and sharing.
 - d) **Professional Development:** The course participant takes proactive initiation for their continuous professional development (CPD) and explore the network of their community of practice for further enhancement. They are motivated to share their professional practices and learn from the people in their disciplines.
 - e) **Guidance, Learning Support and Assessment:** The course participant has the knowledge and skills to understand their learners in terms of identifying their strengths and the areas for development, guidance, counselling, and support for better learning experience.

Core Competencies of the Program

The Master/PGD in Digital Pedagogy program graduates are expected to develop the following core competencies:

- C-1. Exhibit professionalism through the knowledge, skills and attitudes of educational theories, policies, and practices.
- C-2. Explore complexities of teaching and learning in diverse cultural setting and use inclusive pedagogy integrating digital tools and technologies in a responsive way
- C-3. Analyze the curriculum in reference to 21st CS curriculum principles and demonstrate the ability to integrate 21st century skills in the implementation of the specific subject.
- C-4. Employ different evaluation techniques for formative and summative assessments in digital learning environments.
- C-5. Use guidance and counselling techniques to treat students' learning deficiency when considering with-students' learning diversity and personal challenges connected to culture, socio-economic status, gender, or other issues and supporting students' learning accordingly.
- C-6. Apply appropriate communication skills with all stakeholders
- C-7. Use research approaches in identifying education and learning issues and plan for addressing them.
- C-8. *Demonstrate skills on the use of digital tools and technologies relevant to specific subject teaching and learning management*
- C-9. *Implement pedagogically sound practices for student personalized learning management using ICTs*
- C-10. *Prepare and use online learning management system with appropriate digital pedagogy and e-assessment methods in specific subject teaching*
- C-11. Engage students creatively, critically, and constructively to produce ideas and demonstrate skills and attitude to solve problems
- C-12. Be fully acquainted with the meaning of a teacher's identity and its development in the changing world in the 21st century

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Courses offered in the Program

The courses will be offered using conventional face-to-face and online mode of delivery i.e., a blended approach. The courses could be offered from the subject-based time bound course management to subject-based competencies with flexible learning mode. Students get opportunity to complete different modules and accumulating the grades from the modules to be awarded for the degree. The courses offered in this program are presented below.

Education Courses

- S-1. Basic Education Study
- S-2. Curriculum for 21st Century
- S-3. Assessment in Education
- S-4. Educational Guidance and Counselling
- S-5. Educational Research

ICT Courses

- S-6. Digital Skills for Teachers
- S-7. Innovative Technologies in Education
- S-8. Learning Management System
- S-9. Education for 21st Century Skills
- S-10. Capstone Project

Professional Courses

- S-11. Professional Affiliation
- S-12. Thesis

Key Competencies of Each Course

The competencies envisioned of each course are:

1. **Basic Education Study**
 - a) Critically examine the educational philosophies/theories, policies, and practices (and express through writing papers)?
 - b) Execute theoretical implications drawn from them in pedagogical practices
2. **Assessment in Education**
 - a) Design/develop taxonomy-based assessment tools
 - b) Integrate technology to administer and analyze assessment
3. **Educational Guidance and Counselling**
 - a) Demonstrate understanding of Guidance and Counselling in education
 - b) Provide ongoing Guidance and Counselling support to the students for their enhanced learning experience
4. **Educational Research**
 - a) Explore the issues of educational research
 - b) Execute practitioners' research approaches for professional development
5. **Curriculum for 21st Century Skills**
 - a) Conceptualize/review curriculum development process, curriculum with reference to curriculum development theories and models in relation to 21st century skills and transfer to learning context
 - b) Develop/design a miniature form of curriculum
6. **Digital Skills for Teachers**
 - a) Understand, gain, and analyze digital literacy, security, and ethics for the responsive use of digital tools and technology

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 - b) Execute theoretical implications drawn from them in pedagogical practices
- 2. Assessment in Education**
 - a) Design/develop taxonomy-based assessment tools
 - b) Integrate technology to administer and analyze assessment
- 3. Educational Guidance and Counselling**
 - a) Demonstrate understanding of Guidance and Counselling in education
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 - a) Understand, gain, and analyze digital literacy, security, and ethics for the responsive use of digital tools and technology

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7. **Innovative Technologies in Education**
 - a) Conceptualize/theorize different aspects of e-learning and digital pedagogy
 - b) Operationalize e-learning and e-pedagogy in a specific field of teaching and learning management
8. **Learning Management System**
 - a) Design and configure Learning Management System
 - b) Deploy LMS with pedagogical framework
9. **Education for 21st Century Skills**
 - a) Demonstrate understanding of 21st century skills
 - b) Embed 21st cs skills in curricular (pedagogy, assessment) and extracurricular activities
10. **Professional Affiliation / Internship/ Teaching Practice**
 - a) Identify training needs for Digital Pedagogy and 21st CS skills
 - b) Design and deliver Teacher Professional Development (TPD) model
11. **Capstone Project**
 - a) Modularize and Design courses in Learning Management System (LMS) for online mode of delivery
 - b) Conduct educational research related to educational, instructional, learning and assessment in the respective subjects

Course Structure and Course Cycle

MESPD is a three-semester course with 39 educational credits. The course module is divided into three groups – i) Education courses, ii) Digital education related courses and iii) Profession related courses. In the third semester, students who are not interested in doing master's thesis can do only teaching practicum course. Such students will earn only 33 credit hours and be eligible to get a degree of Post-Graduate Diploma in Digital pedagogy. Master of Educational Science degree requires a minimum of 39 credit hours with thesis and a minimum of 33 credit hours with teaching practicum is required for Post Graduate Diploma Degree.

Table 1: Course Structure of Master of Educational Sciences in Digital Pedagogy

Course Category	Total Credits	First Semester	Second Semester	Third Semester
Required course for Master (MES)				
Core Educational Courses	15	9	6	
Digital Education Related Courses	15	6	9	
Professional Affiliation course	9	-	-	9
Total	39	15	15	9

Table 2: Course of Structure of Post Graduate Diploma in Digital Pedagogy

Required course for Post Graduate Diploma (PGD)	Total Credits	First Semester	Second Semester	Third Semester
Core Educational Courses	15	9	6	
Digital Education Related Courses	15	6	9	
Professional Affiliation Courses	3			3
Total	33	15	15	3

Individual who will apply for full-time study will study three educational related courses and two digital education related courses in the first semester. In second semester they will take two educational courses and three digital education related courses. They will have to do teaching practicum and thesis in in the third semester. Students who are interested to earn only PGD degree will do only teaching practicum course in the third semester.

Table 3: Course Cycle of the Program

Course Titles and Code Number	Semester I Credit Hours	Semester II Credit Hours	Semester III Credit hours
Core Education Courses			
Ed. 511 Basic Education Study	3		
Ed, 512 Curriculum for 21st CS skills	3		
Ed. 513 Educational Guidance and Counselling	3		
Ed. 521 Assessment in Education		3	
Ed. 522 Educational Research		3	
Digital Education Related Courses			
DEd. 514 Digital Skills for Teachers	3		
DEd. 515 Innovative Technologies in Education	3		
DEd. 523 Education for 21st CS skills		3	
DEd. 524 Learning Management System		3	
DEd. 525 Capstone Project		3	
Professional Affiliation Courses			
DEd. 531 Teaching Practicum			3
Ed. 532 Thesis writing			6*

* Thesis is a requirement for the master program only.

Course Cycle for Part Time Program

The advanced study in digital pedagogy is more flexible program than traditional regular program of Tribhuvan University. A part-time Master/PGD program allows student to study and complete required courses over an extended period of time as indicated in following table. Most of individual to be enrolled in the program will be working in university/campuses/schools. Many students may go for the part-time program. Those students who get enrollment in the parti-time program must study at least two courses of 3 credits each semester and complete all the required courses withing duration of six years. However, for a professional modular course, this requirement is not applicable. Candidates may choose course modules according to their choice and needs.

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Table 2: Course Cycle for the part-time program

Course Name	Semester I	Semester II	Semester III	Semester IV	Semester V	Semester VI & VII
Core Education Courses						
Ed. 511 Basic Education Study	X					
Ed. 512 Curriculum for 21st CS skills		X				
Ed. 513 Educational Guidance and Counselling			X			
Ed. 521 Assessment in Education				X		
Ed. 522 Educational Research					X	
Digital Educational Courses						
DEd. 514 Digital Skills for Teachers	X					
DEd. 515 Innovative Technologies in Education		X				
DEd. 523 Education for 21st CS skills			X			
DEd. 524 Learning Management System				X		
DEd. 525 Capstone Project					X	
Professional Affiliation Courses						
DEd. 531 Teaching Practicum						X
Ed. 532 Thesis writing						X

* Thesis is a requirement for the master program only.

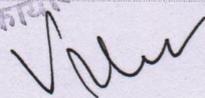
Eligibility for Enrollment

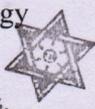
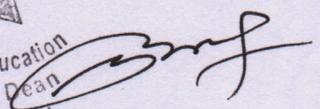
The eligibility criteria for the program Master/PGD in Digital Pedagogy shall be a minimum of a master's degree in any specialization areas with a minimum of 50 percent marks or 2.00 CGPA in aggregate; and applicants from foreign countries who have studied graduate courses (equivalent to master's degree in any discipline in English medium with a minimum of 50 percent marks or 2.00 CGPA in aggregate) will be eligible for the admission in this program.

Thus, graduates with at least a master's degree from any specialization areas who are interested to be a teacher at school and higher education institutions are eligible to apply for this program. Similarly, in-service school and college teachers with at least a master's degree from any specialization areas will be eligible for participating in this course/programs.

Admission requirements

The admission process for the program Master/PGD in Digital Pedagogy will include the entrance examination followed by an online interview.

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Admission procedure

Students applying for the Master/PGD in Digital Pedagogy must fill in the online application form with all details of their personal information and past academic records. The applicants should enclose with the application form, attested copies of: Certificates and testimonials of all examinations passed All Equivalency Certificates and Two recent passport size photographs.

Admission Test

All applicants are required to appear in the entrance examination (online or face-to-face as decided by the Dean's Office) administered by FoE, TU. The syllabus for entrance examination shall cover contents as prescribed in Master/PGD in Digital Pedagogy courses. Entrance examination questions can be both objective and subjective in nature. The merit list of applicants will be prepared based on their entrance examination scores. The admission of students will be merit-based.

Selection Process

Applicants who have scored a minimum of 40 percent in entrance examination, they can enroll in Master/PGD in Digital Pedagogy. For the selection, students shall sit in: Group Discussion and Personal Interview. However, digital literacy shall also be observed while having an interview. It is because the Master/PGD in Digital Pedagogy course is based on practically applied delivery approach that the students have do with digital tools.

Merit List

The final merit list shall be prepared by applying the following procedure:

1. Entrance Examination Score: 50 percent
2. Academic Record: 30 percent
3. Group Discussion: 10 percent
4. Personal Interview: 10 percent

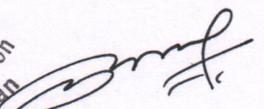
Teaching pedagogy

The MES/PGD in Digital Pedagogy program is based on the student-centered learning approach. The general teaching methodology of the program includes Lecture and interactions, Individual and group presentation, Case studies: text, audio and visual, Field studies (research/practical/project works), Review work: books/journals, Practical training and demonstration, Seminar Paper Presentation.

The specific pedagogy of this MES/PGD in Digital Pedagogy program will be problem-based, project-based, and inquiry-based. It connects to-students' personal experiences with the lectures and discussions, and adds, when necessary, laboratory (ICT Lab) and field works (research and internship) as per the competencies required. Priority is given on individualized and personalized learning using learning management system in delivering the courses. Students will be made familiar with the requirements they need to accomplish and the overall leanings of the contents they are expected to learn in the beginning of course delivery.

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Attendance

This program demands a very high level of commitment from students. Students are required to regularly attend all classes and presentation as required by the course. Students failing to attend a minimum 80 % of classes in each subject shall not be allowed to appear in the semester-end examinations.

Enrollment Cycle

Tribhuvan University has been practicing single enrollment cycle in an academic year. Therefore, same will be applied, but can be adjusted as per the need of the university. In the beginning, the cycle of admission will begin from February 2023.

Student Assessment System

The performance of the students will be evaluated through ongoing in-semester evaluation and semester-end examination. The course facilitator (instructor) shall decide the grades in the in-semester evaluations. The FoE shall have the final authority in conducting, evaluating, and awarding grades in semester-end-examination. A student is required to pass the internal, field study/research, practical/internship, and external examinations independently. The result of the assessment is prepared with the cumulated score of 60% weight from the internal assessment and 40% score from the external-end semester examination.

Examination of theoretical work:

The theoretical examination shall be applied for the theory papers. It includes internal assessment and final examination. There will be an internal examination of theory courses carrying a weightage of 60% of the total marks. Passing the internal examinations with minimum 50% marks is required to appear in the final examination. The duration of final examinations is of one hour for one credit. The final examinations carry a weightage of 40% of the total marks on the base of theoretical questions module conducted by the FoE, TU

Evaluation of practical works / dissertation and internship:

Evaluation of practical field-based research works/ dissertation and internship will be carried out as per FoE, TU.

In-semester Evaluation

The in-semester (internal) evaluation shall generally have a total weight of 60 percent in each course. Students must secure at least 50 percent marks in each subject to pass the in-semester exam. The concern facilitator (instructor) shall be responsible for the continuous in-semester evaluations. The in-semester evaluation shall be based on:

In-semester Evaluation: 60 points

Internal assessment will be done by the course teacher. S/he will evaluate the students' academic activities and performance of course work based on the following criteria and weightage:

1. In-semester, Midterm, Pre-board Examinations 30
2. Class-room Activities (Class Presentations, Group Works, Discussion etc.) 10
3. Assignments/Seminar/Quiz 10
4. Class Attendance 10

The assessment system is based on the cumulative principle of assessment meaning that limited number of assignments are given in each course and as the students

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complete the assignments. Applying this principle determines that the number of assignments given are available for students all their study time. The number of graded assignments will be 3-5 in each course and the assignments are designed in such a way that they can address the set competencies of the course.

Students must engage in different assignments during the learning phase of the courses, which are mentioned in the curriculum. For each course there will be a fixed number of graded assignments to address the given the competencies of the courses. Additionally, certain competencies will also be addressed through the on-going learning activities that include quizzes, virtual discussion, blogs and so on.

Semester-end Examinations

The semester-end examinations on course work related subjects shall have a total weight of 40 percent. The duration of the examination shall be allocated as per the course credit as prescribed by FoE, TU. The semester-end examination shall be based on the following scheme.

End-semester Evaluation: 40 points

At the end of semester, written examination will be conducted by Dean's Office. The breakdown of the items and weightage is as follows:

1. Multiple Choice questions (10 x 1 points)	10
2. Short answer questions (5 x 2 points)	10
3. Long answer questions (2 x 10)	20

Program Implementation and Award

Tribhuvan University will run Master/PGD in Digital Pedagogy program as a regular academic program and as a flexible modular program. Thus, the courses of the program are designed in modular approach.

1. If a student would join the program cycle and want to obtain master's in digital Pedagogy degree, they could do so as it is done in any other academic degree program. The total credit for master's in digital pedagogy is 39 in three semesters during 1 and half year academic years. There will be a requirement of the credit to be completed withing s years to earn Master of Educational Science in Digital Pedagogy,
2. If a student would join the program cycle and want to obtain PGD in digital Pedagogy degree, they could do so as it is done in any other academic degree program. The total credit for PGD in digital pedagogy is 33 in three semesters during one and half academic years. There will be a requirement of the credit to be completed withing 6 years to earn PGD in Digital Pedagogy.
3. If a student would like to attend only a particular course to develop their professional skills, they could also do so. They can join in any of the courses of 3 credits according to their interest and need of their professional career. As a student completes a module/s, they will get a certificate of completion (single subject certification) of that course.
4. If a student would like to attend courses in parttime basis to develop their professional skills, they could also do so. They can study at least two courses per semester and completes all courses withing 6 years of academic years and accumulate the credits of the courses they have completed.

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Credit system

The course curriculum of Master/PGD in Digital Pedagogy is organized in the overall framework of credit system. Each course has a certain number of credits that indicate the weightage.

1. One credit weightage shall be at least 15 lecture hours for theoretical courses or its equivalent work.
2. One credit weightage shall be at least 45 lecture hours for practical courses or its equivalent
3. Master's in digital Pedagogy: A graduate student shall earn: 15 credits on Education related courses, 15 credits on ICT related courses and 9 credits on profession/research related courses.
4. PGD in Digital Pedagogy: A graduate student shall earn: 15 credits on Education related courses, 15 credits on ICT related courses.
5. Single Subject Certification: A graduate student shall earn: 3 credits on Education related courses or 3 credits on ICT related courses. This is applied to any courses from Education or ICT related course cluster. It is NOT possible to earn Single Subject Certification on thesis, capstone project and internship.

Grading System

The final evaluation of students is done through the examination conducted by Tribhuvan University. Students must secure a minimum of grade 'B-' or Grade Point Average (GPA) of 2.70 in the internal evaluation in order to qualify to appear in the semester examination. In order to pass the semester examination, the student must secure a minimum of grade 'B-' or the Cumulative Grade Point Average (CGPA) of 2.70. The grading system shall be as follows:

Letter Grade	GP	SGPA / CGPA Range	Percentage Equivalent	Remarks
A	4	4	90 & above	(Distinction) Outstanding
A-	3.7	3.70 to 3.99	80-89.9	(First Division) Excellent
B+	3.3	3.30 to 3.69	70-79.9	(First Division) Very Good
B	3.0	3.00 to 3.29	60-69.9	(Second Division) Good
B-	2.7	2.70 to 2.99	50-59.9	Pass in individual subjects
F	0	Below 2.70	Below 50	Fail

Note: GP: Grade Point, SGPA: Semester Grade Point Average, CGPA: Cumulative Grade Point Average



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First Semester: Core Education Courses

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Basic Education Study

Course Title: Basic Education Study
 Course No.: Ed. 511
 Nature of course: Theoretical and Practical
 Semester: First

Credit Hours: 3
 Teaching Hours: 48

1. Course Introduction

Basic Education Study (DP 511) aims to acquaint the students with different perspectives and approaches of teaching learning. Specifically, it familiarizes students with education policies and policy making processes in the context of Nepal; different methods of teaching learning and teaching in diverse classrooms with focus on Nepal's multicultural context and curriculum. There are four modules and each module include a certain number of learning competencies. Module I: Understanding Education in Nepal is 3 weeks (9 hours). Module II: Transformative Teaching Learning is 6 weeks (18 hours). Module III: Teaching Learning in Diverse Classroom Context is 4 weeks (12 hours). Module IV: Teaching Learning in Diverse Classroom Context (Contd.) is 3 weeks (9 hours).

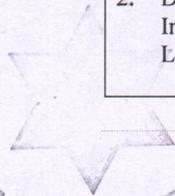
2. General Objectives

This course will enable students,

- To understand and analyze Nepali education policies and policy making processes,
- To apply transformative learning approaches in teaching
- To apply approaches of teaching in diverse classroom context

3. Course Details

Module I: Understanding Education in Nepal		Duration: 9 hours
Objectives/Learning Competencies	Contents	
1. Familiarize with Nepal's educational policies. 2. Critically review the roles of different tiers of the government in education. 3. Critically describe the trend of higher education in Nepal.	1. Current education policies in Nepal 2. Growth and development of higher education in Nepal	
Module II: Transformative Teaching Learning		Duration: 18 hours
Objectives//Learning Competencies	Contents	
1. Explain the concept of transformative teaching and learning 2. Select teaching method appropriate to the topic to be delivered; 3. Design and apply democratic (student centered) teaching learning activities; 4. Reflect upon students' own learning experiences using the lens of transformative and adult learning approaches; 5. Plan lessons using transformative adult learning approaches.	1. Evolution of transformative learning and teaching: Andragogy, transformative learning and heutagogy. 2. Critical and transformative pedagogy: 2.1 Concept and evolution of transformative teaching/learning 2.2 Problem based method 2.3 Project based method 2.4 Inquiry based method 2.5 Collaborative/Group learning methods.	
Module III: Teaching Learning in Diverse Classroom Context		Duration: 12 hours
Objectives/Learning Competencies	Contents	
1. Respect diversity in classrooms; 2. Adopt equitable and inclusive techniques of teaching learning activities; 3. Differentiate the teaching and learning practices.	1. Concept of diversity 2. Creating inclusive learning environment 3. Differentiated teaching learning and Universal design for learning	
Module IV: Teaching Learning in Diverse Classroom Context (Contd.)		Duration: 9 hours
Objectives//Learning Competencies	Contents	
1. Design gender responsive teaching learning activity 2. Distinguish between Differentiated Instruction and Universal Design for Learning.	1. Gender responsive pedagogy 2. Differentiated instruction and Universal design for Learning 3. Inclusive classroom in the context of higher education	


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3. Design inclusive classroom in the context of higher education

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

Assessment

Internal: 60%

Internal assessment will be done by the course teacher. S/he will evaluate the students' academic activities and performance of course work based on the following criteria and weightage:

5. In-semester, Midterm, Pre-board Examinations 30
6. Class-room Activities (Class Presentations, Group Works, Discussion etc.) 10
7. Assignments/Seminar/Quiz 10
8. Class Attendance 10

External: 40%

At the end of semester, written examination will be conducted by Dean's Office. The breakdown of the items and weightage is as follows:

- | | |
|--|----|
| 4. Multiple Choice questions (10 x 1 points) | 10 |
| 5. Short answer questions (5 x 2 points) | 10 |
| 6. Long answer questions (2 x 10) | 20 |

5. Learning resources and additional recommended readings

MODULE I

Bista, K., Sharma, S., & Raby, R. L. (2019) (Eds.). *Higher Education in Nepal. Policies and Prospects*. Routledge. (Section II; Chapters 15 & 16 of Section V and Chapters 17 & 18 of Section VI)

Dhakal, R. K. (2019). The Politics of Education Policymaking in Nepal. *Journal of Education and Research* Vol. 9, (1), pp. 1-12. Retrieved from: <https://doi.org/10.3126/jer.v9i1.28787>

Gurung, I. (2012). A Review of Nepalese Public Education Policy: A History of Implementation and Achievements. In Daniel Pop (Ed.), *Education Policy and Equal Education Opportunities* (pp. 109-133). Open Society Foundations. Retrieved from <https://www.jstor.org/stable/pdf/resrep27130.8.pdf>

Ministry of Education, Science and Technology (2019). *National Education Policy 2076*. Kathmandu: Author.

Ministry of Education, Science and Technology (2019). *Science technology and innovation policy*. Kathmandu: Author.

The Constitution of Nepal

MODULE II

Lombardi, P. (2018). *Instructional methods strategies and technologies to meet the needs of all learners*. <https://LibreTexts.org> (Chapters: 5, 6 & 7)

Nilson, L. B. (2010). *Teaching at its best: A research-based resource for college instructors* (2nd ed.). San Francisco, CA: Jossey-Bass. (Chapters 15, 16, 18, 20)

Teaching Methods for Inspiring the Students of the Future | Joe Ruhl | TEDxLafayette <https://www.youtube.com/watch?v=UCFg9bcW7Bk>

Herod, L. (2012). Adult learning: From theory to practice. Retrieved from: http://en.copian.ca/library/learning/adult_learning/adult_learning.pdf (Pages: 5-30)

Heutagogy: Preparing Learning for Life after Higher Education | UOC <https://www.youtube.com/watch?v=iSMlokWfzU>

Mezirow, J. (2000). Learning to think like an adult. In J. Mezirow (Ed.), *Learning as transformation: Critical perspective on a theory in progress* (pp. 3-33). San Francisco: Jossey-Bass. Retrieved from: <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.463.1039&rep=rep1&type=pdf>

McLoughlin, J. (2015). *Transformative Teaching*. <https://www.youtube.com/watch?v=QBJaftYZHYs>

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Palis, A. G. & Quiros, P. A. (2014). Adult Learning Principles and Presentation Pearls. *Middle East African Journal of Ophthalmology*, Volume 21, Number 2, pp. 114-122. Retrieved from: http://www.meajo.org/temp/MiddleEastAfrJOphthalmol212114-4646708_125427.pdf

Merriam, S. B. (2001). Andragogy and self-directed learning: Pillars of adult learning theory. *New Directions for Adult and Continuing Education*, 89, pp. 3-13. Retrieved from: http://www.umsl.edu/~henschkej/henschke/the_new_update_on_adult_learning_theory_mirria_m.pdf

Jerram, C. (2002). Applying adult education principles to university teaching. HERDSA. Retrieved from: <https://www.herdsa.org.au/search/node/Applying%20adult%20education%20principles%20to%20university%20teaching>

MODULE III

Dykstra, D. (2014). *5 steps to an inclusive classroom*.
<https://www.youtube.com/watch?v=MGPDqzhjtj0>

Hazard, L. (n.d.). *Two activities for discussing diversity in the classroom*.
<https://www.youtube.com/watch?v=INfmJBf17>

Mal Leicester (2008). *Creating an Inclusive School*. London and New York: Continuum International Publishing Group.

Wisconsin Technical College System (2020). *How to create and inclusive classroom*.
<https://www.youtube.com/watch?v=IgNiSish5Xo>

Additional Recommended reading

Banks, J. A., & McGee Banks, C. A. (2010). *Multicultural education: Issues and perspectives* (7th ed.). USA: John Wiley and Sons, Inc.

Deardorff, D. K. (2020). Manual for developing intercultural competencies: Story circles. Paris, Oxon & New York: UNESCO & Routledge.

IRIS Center (2005). Providing instructional supports: Facilitating mastery of new skills. Retrieved from <https://iris.peabody.vanderbilt.edu/module/sca/>

MODULE IV

Awang-Hashim, R., Kaur, A. and Valdez, N. P. (2019). Strategizing inclusivity in teaching diverse learners in higher education. *Malaysian Journal of Learning and Instruction*. Vol. 16 (No. 1), 105-128.

CAST (2011). *Universal Design for Learning Guidelines version 2.0*. Wakefield, MA: Author.

Differentiated Instruction: An Introduction > Module 1 > Reading: What is differentiated instruction and why differentiate? Retrieved from: https://pdo.ascd.org/LMSCourses/PD11OC115M/media/DI-Intro_M1_Reading_What_Is_DI.pdf

Mlama, P. Marema, D., Makoye, H., Murage, L., Wagah, M. and Washika, R. (2005). *Gender Responsive Pedagogy A Teacher's Handbook*. Nairobi: Forum for African Women Educationalists (FAWE).

Reis, S. M., Renzulli, J. S. (2018). The Five Dimensions of Differentiation. *International Journal for Talent Development and Creativity* – 6(1), August, 2018; and 6(2).

Uddin, M. M. and Johnson, Keith. (2018). *Identifying classroom management strategies by focusing on diversity and inclusion*. American Society for Engineering Education.

Additional Recommended reading

Roiha, A. and Polso, J. (2021). The 5-dimensional model: A tangible framework for differentiation. *Practical Assessment, Research, and Evaluation* Vol. 26, Article 20. DOI: <https://doi.org/10.7275/22037164> Available at: <https://scholarworks.umass.edu/pare/vol26/iss1/20>

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Course Title: **Curriculum for Twenty-first Century Skills**

Nature of Course: **Theoretical**

Course Code: Ed. 512

Semester: First

Credit Hours: 3

Teaching Hours: 48

Course Description

This course aims at providing a range of knowledge, skills, and values to the learners to enable them to develop a curriculum for inculcating twenty-first century skills through digital pedagogy. Students are expected to have fundamental knowledge and skills to assess different concepts of curriculum through critical perspectives, design a curriculum by reflecting needs of particular context, formulate 21st Century learning standards based on digital taxonomy of educational objectives, and use different curriculum designs to develop twenty-first century skills within the learners.

General Objectives

- Reconceptualize the concept of curriculum as per the needs of twenty-first century.
- Devise an outline of a curriculum by reflecting the needs and aspirations of specific group of learners.
- Use digital taxonomy of educational objectives to formulate 21st Century learning standards.
- Apply different curriculum designs to inculcate 21st century skills within learners.

Module I: Reconceptualizing the Concepts of Curriculum

Module Objectives

This module helps students identify some important key factors playing crucial role in curriculum change in this era and enable them to reposition the curriculum as per the dynamic change of twenty-first century especially in reference to Nepal.

Learning Outcomes

After the completion of this module students will be able to

- Analyze different concepts of curriculum with examples.
- Elaborate major factors affecting curriculum change in the twenty-first century.
- Reconceptualize the notion of curriculum as per the needs and aspirations of twenty-first century.
- Assess the concepts reflected by school to university level curricula in Nepal through critical perspectives.

Module Contents

- Concepts of Curriculum
- Factors Affecting Curriculum Change in the 21st Century
- Reconceptualizing and Repositioning Curriculum in the 21st Century

Online Class hour: 9 hrs. (3 weeks)

Suggested Teaching and Learning activities

Primarily pre-module, in-module, and post-module activities will be applied to develop behaviors within the learners intended by this course as given below:

Pre-module Activities	21st Century Skills
Each student will login in Moodle through their individual ID and identify the reading material(s) uploaded by her/his instructor to complete the assigned works under this Module.	<i>Digital literacy</i>
Students will consult the uploaded reading materials (given in the reference below) in Moodle platform and then analyze various concepts of curriculum (curriculum as subject matter, curriculum as plan for learning, curriculum as experience; supported, taught, learned, and tested curriculum for examples) and factors of affecting curriculum change through multiple lenses.	<i>Analytical and critical thinking</i>
Each student will be asked to prepare a short note on how they conceptualize the notion of curriculum and ask them to prepare a word file by encompassing learned contents and upload the file in the Moodle to make it accessible to all students and mentor as well to receive feedback on a required basis.	<i>Communication skills and digital literacy</i>
In-module Activities	21st Century Skills
Teacher will deliver the content related to different notions of curriculum through PowerPoint presentation and then students will be asked to give their viewpoints in oral mode in relation to related concepts of curriculum based on the reading materials consulted by them in pre-module activities.	<i>Communication skill</i>

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Each student will be asked to identify factors affecting curriculum change in these days and then they will be asked to share their ideas with a peer sitting nearby them on an individual basis and finally each pair will get a chance to share their conclusions among the class for additional clarification. Whole class will be divided into different groups comprised of 3 to 4 members in each and a reading materials related to the factors affecting curriculum change in the 21st century will be distributed to each group to summarize the contents given there. Finally each group will be given an opportunity to share their findings and feedback will be provided on a required basis by the side of instructor.	<i>Thinking skills, problem solving skills, collaborative skills, communication skills</i>
Whole class will be divided into different groups consisting of 4/5 members in each and a reading materials will be provided to all groups, and then each group will be asked how should the curriculum be reconceptualized and repositioned as per their dynamic needs and aspiration of twenty-first century. Finally, feedback will be provided to all groups based on the contents shared by them.	<i>Thinking skill, problem solving skills, communication skills.</i>
Post-module Activities	21st Century Skills
Whole class will be divided into different groups and each group will be asked to access at least 10 teaching staff attending school to university level through different modes (direct contact, telephone, mail, messenger, etc.) to investigate how they conceptualize curriculum. And then they will be asked to share their findings among their peers by relating the results with the narrower to wider concepts of curriculum discussed under this Module. Finally, additional justification will be given by instructor on a required basis.	<i>Collaboration skill, analytical skill, communication skill</i>

Recommended Resources

Marope, M. (n.d.). *Reconceptualizing and repositioning curriculum in the 21st century: A global paradigm shift*. Retrieved from http://www.ibe.unesco.org/sites/default/files/resources/reconceptualizing_and_repositioning.pdf

Print, M. (1993). *Curriculum development and design*. Australia: Allen and Unwin Pvt. Ltd.

Module II: Curriculum Development Process

Module Objectives

This Module enables learners to be familiarized with different types of online curricula and enables them to develop and implement the curricula through digital pedagogy to foster twenty-first century skills within the learners.

Learning Outcomes

After the completion of this module students will be able to

- a. Analyze needs and importance of online curriculum in reference to Nepal.
- b. Design different types of online courses as per the needs of specific group of learners.
- c. Devise online curriculum either by following behaviorist or constructivist approach.
- d. Design an outline of a curriculum from own area of interest by reflecting twenty-first century skills.

Module Contents

- a. Introduction to Online Curriculum
- b. Need and Importance of Online Curriculum
- c. Types of Online Course
- d. Approaches to Online Course Design
- e. Curriculum Development Models (rational, cyclical, and dynamic)
- f. Curriculum Development Process

Online Class hour: 12 hrs. (4 weeks)

Suggested Teaching and Learning activities

A number of activities as given below will be applied during instructional process to develop competencies intended by the curriculum.

Pre-module Activities	21st Century Skills
Each student will gather essential resources from library, internet, mentor, etc. and study the accessible reading materials (some of them are also given in the reference below) to get deeper understanding on the concept and types of online curriculum, needs and importance, alternative modes of	<i>Digital skills, analytical and critical thinking</i>

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curriculum development, and curriculum development process before getting entry into in-module activities.	
In-module Activities	21st Century Skills
Each student will be asked to share what they learn about the concept, types, needs and importance of online curriculum, different models of curriculum development, and common steps for devising curriculum from the reading materials that are accessible to them within specified minute. While doing so, separate content will be given to each of them to share their understanding among the class.	<i>Communication skill</i>
Teacher will classify whole class into different groups comprising 4 members in each and separate sub-topics (concept of online curriculum, need for and importance of online curriculum, type of online curriculum, for examples) will be distributed to each group and then each group will be asked to be prepared on given topic within 20 minutes. Then after, three members from each group (one stay others stray) will be asked to join separate groups to learn what the expert/core group understood on the given topic and then related member of the expert/core group will be asked to share what they have learned under the group discussion within 5 minutes. Finally, each member will be asked to return to their group and 3 minutes will be provided to each of them to share what they learned from other groups under various sub-topics assigned by the instructor in the class.	<i>Collaboration skill, communication skill, analytical skill, and creative skill</i>
Students will be classified into different groups composed of 4/5 members in each and they will be asked to prepare an outline of curriculum for specific group of learners by encompassing curricular objectives, contents, learning activities, and evaluation procedures. Then each group will be asked to present their project work at the class through gallery work, and finally, opportunity will be provided to each member of all groups to identify the strengths and weaknesses of the curriculum outlines prepared by different groups for the purpose of giving constructive feedback.	<i>Collaborative skills, creative skills, communication skills, analytical and critical thinking skills</i>
Post-module Activities	21st Century Skills
Make different groups composed of 4/5 members in each and then prepare an outline of a miniature form of curriculum for a specific group of learners separately by encompassing curricular objectives, contents, learning activities, and assessment procedures. And then share their product with peers and the instructor through PowerPoint presentations within a specified timeline. Finally, each group should make revisions on their work based on the given feedback in the discussion session and upload their product on Moodle for final appraisal by the instructor.	<i>Collaboration skill, analytical and critical skills, digital skill</i>

Recommended Resources

- Boettcher, J. V., & Conrad, R. (2010). *The online teaching survival guide: Simple and practical pedagogical tips*. USA: Jossey-Bass, A Wiley Imprint.
- Gosper, M., Ifenthaler, D. (2014). *Curriculum Models for 21st Century: Using learning technologies in higher education*. London: Springer.
- Porter, L. R. (2004). *Developing an online curriculum: Technologies and techniques*. London: Information Science Publishing.
- Print, M. (1993). *Curriculum development and design*. Australia: Allen and Unwin Pvt. Ltd.

Module III: Taxonomy of Educational Objectives for 21st Century Learning Standards

Module Objectives

This Module enables the participants to formulate specific instructional objectives based on Bloom's digital taxonomy of educational objectives by integrating them with twenty-first-century skills

Learning Outcomes

After the completion of this module, students will be able to

- Examine Bloom's taxonomy and clarify the need of digital taxonomy of educational objectives.
- Formulate specific instructional objectives by following Bloom's digital taxonomy.
- Apply the digital taxonomy of educational objectives to formulate 21st-century learning standards.

Module Contents

- Recapitulation of Bloom's Taxonomy
- The Need for Digital Taxonomy

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- c. Introduction to Bloom's Digital Taxonomy
- d. Use of Bloom's Digital Taxonomy to Formulate 21st Century Learning Standards

Online Class hour: 15 hrs. (5 weeks)

Suggested Teaching and Learning activities

Three instructional activities (pre-module, in-module, and post-module) as given below will be applied to mastery of learners on curricular contents encompassed under this module.

Pre-module Activities	21st Century Skills
Each student will be asked to consult any textbook of 'Curriculum and Evaluation' written for B.Ed. level to review the Bloom's taxonomy of educational objectives and then an opportunity will be given to them to post their understanding in Jamboard.	Communication skill, digital literacy
Teacher will upload some valid reference materials, articles, and slides related to Bloom's taxonomy of educational objectives and then students will be asked to consult all uploaded materials individually to be prepared for in-Module activities to get deeper understanding on the taxonomy of educational objectives for formulating 21 st century learning standards.	Digital literacy, communication skill, and analytical thinking
In-module Activities	21st Century Skills
Teacher will prepared a KWL (know, want to know, and learned) chart on a whiteboard and then a number of students will be asked what they know about Bloom's taxonomy randomly through pre-module activity. All of the contents learned by students will be listed under 'K' column and the contents that they want to know about Bloom's taxonomy will be written under 'W' column, finally, what they learned after the discussion will be mentioned under 'L' column to consolidate their understanding.	Communication skill, problem solving skills
The teacher will prepare a PPT of Bloom's digital taxonomy of educational objectives by incorporating six levels of cognitive process, and then clarify what they actually mean and how these cognitive steps are similar to and different from Bloom's taxonomy for clarification. Then a list of instructional objectives will be shown to the students through PPT and each of them will be asked to identify each of the specific objectives and corresponding levels of digital taxonomy by using pedagogy wheel 5.0.	Thinking skill, problem solving skill, analytical skill, communication skill
Each student will be asked to formulate 10 objectives representing different levels of Bloom's digital taxonomy within 30 minutes (Think) and different pairs will be made by joining each student with another one and then each of them will be asked to share their contents to each other to be benefitted from both sides within 10 minutes (Pair). Finally, each pair will be asked to share their work with the whole class (Share) and then feedback will be provided on an individual basis for enabling them to formulate 21 st -century learning standards based on Bloom's digital taxonomy.	Thinking skill, creative skill, collaboration skill, analytical and critical thinking skills, communication skill
The whole class will be divided into various groups comprised of 4/5 members in each and then they will be asked to prepare 30 specific objectives, five from each level, and then each group will be asked to present their group work in the class through powerpoint presentation. Then after, each learner will be asked to observe each objective formulated by other groups and give their comments. Finally, each group will be asked to give their reflection on the comments given by the members of other groups to defend their position.	Thinking skill, collaboration skill, communication skill, critical thinking skill
Post-module Activities	21st Century Skills
Find out a school-level curriculum from your area of interest and identify different levels of cognitive process associated with each objective formulated in the curriculum individually. Then Share your individual findings with at least two peers as assigned by your instructor for constructive comments and grading. And finally, revise your work by incorporating the feedback given by peers and upload your revised work on Moodle by highlighting the revised contents by peers and each of them will be asked to upload their revised work on the Moodle by highlighting revised contents.	Analytical and critical thinking, collaborative skill, digital skill

Recommended Resources

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- c. Introduction to Bloom's Digital Taxonomy
- d. Use of Bloom's Digital Taxonomy to Formulate 21st Century Learning Standards

Online Class hour: 15 hrs. (5 weeks)

Suggested Teaching and Learning activities

Three instructional activities (pre-module, in-module, and post-module) as given below will be applied to mastery of learners on curricular contents encompassed under this module.

Pre-module Activities	21st Century Skills
Each student will be asked to consult any textbook of 'Curriculum and Evaluation' written for B.Ed. level to review the Bloom's taxonomy of educational objectives and then an opportunity will be given to them to post their understanding in Jamboard.	Communication skill, digital literacy
Teacher will upload some valid reference materials, articles, and slides related to Bloom's taxonomy of educational objectives and then students will be asked to consult all uploaded materials individually to be prepared for in-Module activities to get deeper understanding on the taxonomy of educational objectives for formulating 21 st century learning standards.	<i>Digital literacy, communication skill, and analytical thinking</i>
In-module Activities	21st Century Skills
Teacher will prepared a KWL (know, want to know, and learned) chart on a whiteboard and then a number of students will be asked what they know about Bloom's taxonomy randomly through pre-module activity. All of the contents learned by students will be listed under 'K' column and the contents that they want to know about Bloom's taxonomy will be written under 'W' column, finally, what they learned after the discussion will be mentioned under 'L' column to consolidate their understanding.	<i>Communication skill, problem solving skills</i>
The teacher will prepare a PPT of Bloom's digital taxonomy of educational objectives by incorporating six levels of cognitive process, and then clarify what they actually mean and how these cognitive steps are similar to and different from Bloom's taxonomy for clarification. Then a list of instructional objectives will be shown to the students through PPT and each of them will be asked to identify each of the specific objectives and corresponding levels of digital taxonomy by using pedagogy wheel 5.0.	<i>Thinking skill, problem solving skill, analytical skill, communication skill</i>
Each student will be asked to formulate 10 objectives representing different levels of Bloom's digital taxonomy within 30 minutes (Think) and different pairs will be made by joining each student with another one and then each of them will be asked to share their contents to each other to be benefitted from both sides within 10 minutes (Pair). Finally, each pair will be asked to share their work with the whole class (Share) and then feedback will be provided on an individual basis for enabling them to formulate 21 st -century learning standards based on Bloom's digital taxonomy.	<i>Thinking skill, creative skill, collaboration skill, analytical and critical thinking skills, communication skill</i>
The whole class will be divided into various groups comprised of 4/5 members in each and then they will be asked to prepare 30 specific objectives, five from each level, and then each group will be asked to present their group work in the class through powerpoint presentation. Then after, each learner will be asked to observe each objective formulated by other groups and give their comments. Finally, each group will be asked to give their reflection on the comments given by the members of other groups to defend their position.	<i>Thinking skill, collaboration skill, communication skill, critical thinking skill</i>
Post-module Activities	21st Century Skills
Find out a school-level curriculum from your area of interest and identify different levels of cognitive process associated with each objective formulated in the curriculum individually. Then Share your individual findings with at least two peers as assigned by your instructor for constructive comments and grading. And finally, revise your work by incorporating the feedback given by peers and upload your revised work on Moodle by highlighting the revised contents by peers and each of them will be asked to upload their revised work on the Moodle by highlighting revised contents.	<i>Analytical and critical thinking, collaborative skill, digital skill</i>

Recommended Resources





- Amin, H. & Mirza, M. S. (2020). *Comparative study of knowledge and use of Bloom's digital taxonomy of teachers and students in virtual and conventional universities*. Retrieved from www.emeraldgroupublishing.com/licensing/reprints.htm
- Anderson, L. W., & Krathwohl, D. R., (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Addison Wesley Longman, Inc.
- Bloom, B. S. Engelhart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: Handbook I: Cognitive domain*. New York: David McKay Company, Inc.
- Churches, A. (2009). *Bloom's digital taxonomy: It's not about the tools, it's using the tools to facilitate learning*. Retrieved from <http://edorigami.wikispaces.com>
- Nikolic, M. & Dabic, T. (2016). Bloom's taxonomy revised in the context of online tools. DOI: 10.15308/Sinteza-2016-315-320

Module IV: Curriculum Designs for 21st Century Learners

Module Objectives

This Module will empower the participants to apply different curriculum designs from school to higher level to impart twenty-first century skills on their students.

Learning Outcomes

After the completion of this module students will be able to

- Analyze the needs of twenty-first century learners.
- Find out the relationship between various dimensions that need to be considered while devising an online curriculum.
- Analyze how design dimensions are maintained in higher level curricula in Nepal.
- Apply different designs to cultivate twenty-first century skills of the learners.

Module Contents

- Introduction to 21st Century Learners
- Needs of 21st Century Learners
- Curriculum Designs for 21st Century Learners
- Meaning and Components of Curriculum Design
- Dimensions of Curriculum Design (continuity, sequence, integration, and scope)
- Curriculum Designs (Integrated, experience-centered, radical, core, reconstructionist)
- Use of These Designs to Develop 21st Century Skills of Learners

Online Class hour: 12 hrs. (4 weeks)

Suggested Teaching and Learning activities

Following activities will be used to develop knowledge and skills as intended by this course under this module.

Pre-module Activities	21 st Century Skills
Teacher will upload essential references, books and handouts on the Moodle to make them accessible to all learners and ask them to study provided reading materials to get clear understanding on nature and needs of 21 st century learners, curriculum designs for 21 st century learners; meaning, components, and dimensions of curriculum design to be prepared for in-module activities.	Digital skills, analytical and critical thinking
In-module Activities	21 st Century Skills
Teacher will divide whole class into different groups comprising 5 members in each and one member from each group will be chosen to make an expert group. Then after, teacher will teach expert group about 21 st century learners, their needs, curriculum designs for these learners with meaning and components of design. Teacher can do this activity either during her/his period or earlier. After providing clear concept to the expert group, each member from the group will be asked to join their home group and to share their ideas that they learned to all members in the group (Jigsaw). Finally, teacher will pose several questions related to the discussed contents randomly to the members of different groups and then provide feedback on a required basis.	Collaboration skill, leadership skill, communication skill, creative skill
Teacher will prepare PPTs related to different dimensions (continuity, sequence, integration, and scope), various forms of curriculum designs (integrated, experience-centered, radical, core, reconstructionist) and their implications for developing 21 st century skills and then clarify the contents to the students in detail through PowerPoint presentation. After delivering the whole contents, teacher will ask some questions on a random basis to	Thinking skill, problem solving skill, communication skill

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assess whether students are clear or not. Finally, instructor will summarize the whole contents to consolidate it.	
Students will be classified into different groups composed of 4/5 members in each and they will be asked to find out a school level curriculum related to their major subject and then they will be asked to analyze the curriculum through the lens of design dimensions. Then after, they will be asked to share their findings in the class simultaneously. Finally, teacher will clarify how different dimensions of curriculum design need to be considered while preparing curriculum for a particular group of children.	<i>Collaborative skill, analytical and critical thinking skills, communication skill</i>
Post-module Activities	21st Century Skills
Each student will be asked to find out a school level curriculum from their area of interest and then they will be asked to identify in which camp (subject-centered, learner-centered, and problem-centered for examples) this design belongs to with justifiable arguments and then opportunities will be provided to some students to present their findings in the class. Finally, a brief discussion will be held in the class to integrate the ideas proposed by different designs with school to university level curricula to develop 21 st century skills within the learners through them.	<i>Analytical skill, critical skill, collaboration skill</i>

Recommended Resources

- Boettcher, J. V., & Conrad, R. (2010). *The online teaching survival guide: Simple and practical pedagogical tips*. USA: Jossey-Bass, A Wiley Imprint.
- Gosper, M., Ifenthaler, D. (2014). *Curriculum Models for 21st Century: Using learning technologies in higher education*. London: Springer.
- Ornstein, A. C., & Hunkins, F. P. (2018). *Curriculum: Foundations, principles, and issues* (7th edition). New York: Person Education, Inc.

Evaluation

Internal Evaluation 60%

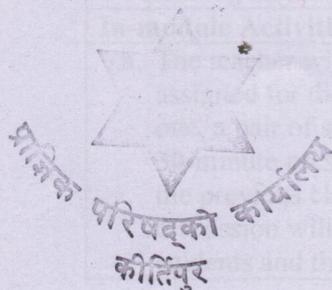
Internal assessment will be done by the course teacher. S/he will evaluate the students' academic activities and performance of course work based on the following criteria and weightage:

9. In-semester, Midterm; Pre-board Examinations 30
10. Class-room Activities (Class Presentations, Group Works, Discussion etc.) 10
11. Assignments/Seminar/Quiz 10
12. Class Attendance 10

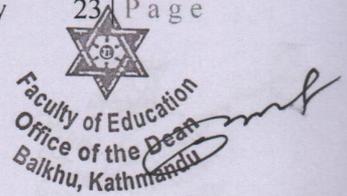
External Evaluation 40%

At the end of semester, written examination will be conducted by Dean's Office. The breakdown of the items and weightage is as follows:

- | | | |
|--|---------------------------------|----|
| 7. Multiple Choice questions (10 x 1 points) | 21 st Century Skills | 10 |
| 8. Short answer questions (5 x 2 points) | Digital Literacy | 10 |
| 9. Long answer questions (2 x 10) | Reflective Thinking | 20 |



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Course Title: **Educational Guidance and Counselling**

Nature of Course: **Theoretical**

Course Code: Ed. 513

Semester: First

Credit Hours: 3

Teaching Hours: 48

Course Description

This course aims to contribute to students' personal, educational, and career development. The course offers a systematic introduction to the key topics in personal, educational, and career guidance and counselling with balanced attention to theoretical work and practical aspects. There will be 16 three-hour sessions for this course. Learning activities are divided into three phases: pre-module (independent study and exploration), in-module (real time presentation and discussion), and post-module activities (assignments for assessing learning achievement).

Course Objectives

Upon completion of this course the students will be able to:

- develop an understanding of the concept, rationale and evolution, and key theories of guidance and counselling.
- acquire attitudes, knowledge, and skills that contribute to personal-social, academic, and career development.
- apply various strategies for guidance and counselling with due consideration to ethical aspects and personal needs.

Module I: Introduction to Guidance and Counselling (15hr,5 weeks)

Module Contents

- Introduction to guidance and counselling: Concept, rationales, and evolution
- Key theories (i.e., client-centred counselling, rational emotive behaviour therapy, behavioural counselling, reality therapy, and human technology, career theories (matching theories) of guidance and counselling
- Teaching as advising and advising as teaching

Learning Outcomes

After the completion of this module students will be able to:

- Describe the concept, rationales and evolution of guidance and counselling.
- Blog the understanding of some of the key theories of guidance and counselling.
- Explore/analyse the relationship between advising and teaching.

Teaching and Learning activities

Pre-module activities	21 st cs Skills
<ol style="list-style-type: none">Please watch the prescribed video and discuss in discussion forum then complete a pre-reading quiz about the concept, rationale, and evolution of guidance and counselling.Read prescribed reading and participate in pre-reading discussion using discussion forum.	digital literacy, reflective reading, critical thinking
In-module Activities	
<ol style="list-style-type: none">The teacher will deliver a presentation on the topic assigned for the day. In each class except the first one, a pair of students will be asked to make a 20–30-minute presentation on the matter discussed in the previous class based on assigned reading. Each discussion will be followed by comments both from students and the teacher.	Communication and collaboration

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Post-module Activities	
a. Each student will be asked to choose a learning theory and critically examine its implication in guidance and counselling and write a 1000 word-paper. They will upload their assignment in the Moodle and each student will be asked to read and provide feedback to at least two of their colleague's work. Each student will revise their work based on the suggestions from their friends and make a final submission.	Critical thinking, problem-solving, communication, metacognition, self-assessment

Recommended Resources

- Drake, J. K. (2013). Advising as Teaching and the Advisor as Teacher in Theory and in Practice. In J. K. Drake, P. Jordan, & M. A. Miller (Eds.), *Academic advising approaches: Strategies that teach students to make the most of college* (First edition, pp. 17–32). San Francisco: Jossey-Bass.
- Gysbers, N. C., & Henderson, P. (2012). *Developing & managing your school guidance & counseling program* (5th ed). Alexandria, VA: American Counseling Association.
- Myrick, R. D. (2011). *Developmental guidance and counseling: A practical approach* (5th ed). Minneapolis, MN: Educational Media Corporation (pp. 1-22)

Module II: Guidance and Counselling in Practice, 12 hrs. (5 weeks)

Module Contents

- Personal-social aspect (emotional intelligence, mindfulness, resilience, happiness empathy, yoga, meditation)
- Academic aspect (self-efficacy, feedback literacy, student engagement, student study skills, individual student planning)
- Career guidance and counselling (placement, career interest and personal strengths)

Learning Outcomes

After the completion of this module students will be able to:

- Reflect on their understanding of emotional states and needs.
- Practice yoga and meditation for personal well-being.
- Evaluate the role of self-efficacy, engagement, study skills, and student planning for enhancing educational achievement.
- Recognize the need for developing skills and strengths for succeeding in a chosen career.

Teaching and Learning activities

Pre-module activities	21 st cs Skills
a. Personal aspect: Students read the prescribed texts, watch a video, and write a brief (150 words) self-evaluation of the emotional aspect discussed.	digital literacy, reflective reading, critical thinking
b. Education aspect: The students will be divided into five groups. Each group will read the assigned text and collaborate with their friends using a google doc to prepare a quiz.	
c. Career aspect: Each Students will write and upload a brief description of their career interests and	

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competencies either they have or want to develop to pursue the career.	
In-module Activities	
The teacher will deliver a presentation on the topic assigned for the day. Students will <ol style="list-style-type: none"> Discuss the benefits of personal well-being Complete a quiz prepared by their friends Practice yoga and meditation 	Communication, collaboration, and self-understanding
Post-module Activities	
<ol style="list-style-type: none"> Each student will prepare an individual student plan including their self-appraisal, goals, plans, and strategies for achieving their academic aspect. 	Self-appraisal, goal setting, and decision making.

Recommended Resources

- Beard, A. (2017). Mindfulness in the age of complexity. In *Mindfulness (HBR emotional intelligence series)* (pp. 3-27). Harvard Business School Publishing Corporation.
- Chopra, D., & Simon, D. (2004). *The seven spiritual laws of yoga: A practical guide to healing body, mind, and spirit*. Hoboken, N.J: John Wiley & Sons.
- Cottrell, S. (2013). *The study skills handbook* (Fourth edition). Houndmills New York: Palgrave Macmillan.
- Coutu, D. (2017). How resilience works. In *HBR Emotional Intelligence Series. Resilience* (pp. 1-30). Boston, MA: Harvard Business School Publishing Corporation.
- Goleman, D. (2017). What is empathy? In *HBR Emotional Intelligence Series. Empathy*. (pp. 1-12). Boston, Massachusetts: Harvard Business School Publishing Corporation.
- Gysbers, N. C. (2008). Individual student planning in the united states: Rationale, practices, and results. *Asian Journal of Counselling, 15*(2), 117-139
- Hansen, E., International Labour Office, & ILO InFocus Programme on Skills, K. and E. (2006). *Career guidance: A resource handbook for low- and middle-income countries*. Geneva: ILO. Retrieved from <http://books.google.com/books?id=FDYmQAAMAAJ>
- Hattie, J., & Timperley, H. (2007). The Power of Feedback. *Review of Educational Research, 77*(1), 81-112.
- Moss, J. (2017). Happiness isn't the absence of negative feelings. In *HBR Emotional Intelligence Series. Happiness* (pp. 1-12). Boston, Massachusetts: Harvard Business Review Press.
- Vasudev, J. (2013). *Mind is your business*. Coimbatore, India: Isha Foundation.
- Verma, T. (2020). *22 Meditations for effortless relaxation, rejuvenation and reconnection*. Cayuga, Canada: RTV Yoga Inc.
- Webb, L. D., & Brigman, G. A. (2006). Student success skills: Tools and strategies for improved academic and social outcomes. *Professional School Counseling, 10*(2), 112-120
- Zimmerman, B., J. (1995). Self-efficacy and educational development. In A. Bandura (Ed.), *Self-efficacy in changing societies* (pp. 202-231). Cambridge: Cambridge University Press.

Module III: Responsive Guidance and Counselling, 12 hrs. (4 weeks)

Module Contents

- Assessing students' needs for guidance and counselling (personal-, educational-, and career-related issues)
- Responsive services (Individual counselling, group counselling, consultation, and referral)
- Ethical issues in guidance and counselling

Learning Outcomes

After the completion of this module students will be able to:

- Assess personal-, educational-, and career-related needs for counselling.
- Examine the importance of ethical considerations in guidance and counselling.
- Deliver guidance and counselling with due consideration to ethical aspects.

Teaching and Learning activities

Pre-module activities	21 st cs Skills
Reading materials will be based on a. Response service: Find and watch a YouTube video related to responsive counselling and write a brief description of the video and why they think it useful for others to watch.	digital literacy, reflective reading, critical thinking
In-module Activities	
a. The teacher will deliver a presentation on the topic assigned for the day. b. Various aspects of responsive counselling and ethical considerations will be discussed. c. Students will work in a group to prepare a list of interview questions to identify their colleague's personal or educational problems.	Communication and collaboration
Post-module Activities	
a. The students will prepare a case study about a student's personal-, academic-, or career-related problems. They will conduct a one-on-one counselling session considering ethical aspects to help the student deal with the identified problem(s) and write a report about it/ make a video-recording of the session.	Communication, problem identification, evaluation and problem solving

Recommended Resources

American School Counselor Association. (2016). *ASCA ethical standards for school counselors*. American School Counsellor Association. Retrieved from <https://www.schoolcounselor.org/getmedia/f041cbd0-7004-47a5-ba01-3a5d657c6743/Ethical-Standards.pdf>

American School Counselor Association. (2019). *ASCA Position statements*. American School Counsellor Association. Retrieved from <https://www.schoolcounselor.org/getmedia/f041cbd0-7004-47a5-ba01-3a5d657c6743/Ethical-Standards.pdf>

Corey, G. (2017). *Theory and practice of counseling and psychotherapy* (Tenth edition). Australia: Cengage Learning.

Gysbers, N. C., & Henderson, P. (2012). *Developing & managing your school guidance & counseling program* (5th ed). Alexandria, VA: American Counseling Association.

Nyutu, P. N., & Gysbers, N. C. (2008). Assessing the counselling needs of high school students in Kenya. *International Journal for Educational and*

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Further readings

- Drake, J. K., Jordan, P., & Miller, M. A. (Eds.). (2013). *Academic advising approaches: Strategies that teach students to make the most of college* (First edition). San Francisco: Jossey-Bass.
- Forgeard, M. J. C., & Eichner, K. V. (2014). Creativity as a target and tool for positive interventions. In A. C. Parks & S. M. Schueller (Eds.), *The Wiley-Blackwell handbook of positive psychological interventions* (pp. 137–154). Hoboken: Wiley Blackwell.
- Forsyth, P. (2009). *100 great time management ideas from leading companies and individuals around the world*. London: Marshall Cavendish.
- Gordon, V. N., Habley, W. R., Grites, T. J., & National Academic Advising Association (U.S.) (Eds.). (2008). *Academic advising: A comprehensive handbook* (2nd ed). San Francisco, CA: Jossey-Bass.
- Harvard Business School Publishing Corporation. (2017a). *Empathy*. Boston, Massachusetts: Harvard Business School Publishing Corporation. Retrieved from
- Harvard Business School Publishing Corporation. (2017b). *Happiness*. Boston, Massachusetts: Harvard Business Review Press.
- Harvard Business School Publishing Corporation. (2017c). *Mindfulness (HBR emotional intelligence series)*. Harvard Business School Publishing Corporation.
- Harvard Business School Publishing Corporation. (2017d). *Resilience (HBR Emotional intelligence series)*. Harvard Business School Publishing Corporation.
- Heen, S., & Stone, D. (2017). *Find the coaching in criticism*. Boston, MA: Harvard Business School Publishing Corporation.
- Hughes, P. M. (1971). *Guidance and counselling in schools: A response to change* (1st ed.). Oxford, New York: Pergamon Press
- Kopans, D. (2017). *How to evaluate, manage, and strengthen your resilience*. Boston, MA: Harvard Business School Publishing Corporation.
- Leonard, M. J. (2008). Advising Delivery: Using Technology. In V. N. Gordon, W. R. Habley, T. J. Grites, & National Academic Advising Association (U.S.) (Eds.), *Academic advising: A comprehensive handbook* (2nd ed, pp. 292–306). San Francisco, CA: Jossey-Bass.
- Rashedi, R. N., Weakley, M., Malhi, A., Wajanakunakorn, M., & Sheldon, J. (2020). Supporting positive behaviors through yoga: An exploratory study. *The Journal of Positive Psychology*, 15(1), 122–128.
- Wong, Y. J., Zounlome, N. O. O., Goodrich Mitts, N., & Murphy, E. (2020). “You can do it!” An experimental evaluation of an encouragement intervention for female students. *The Journal of Positive Psychology*, 15(4), 427–437.

Evaluation

Internal Evaluation 60%

Internal assessment will be done by the course teacher. S/he will evaluate the students' academic activities and performance of course work based on the following criteria and weightage:

13. In-semester, Midterm, Pre-board Examinations 30
14. Class-room Activities (Class Presentations, Group Works, Discussion etc.) 10

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15. Assignments/Seminar/Quiz 10

16. Class Attendance 10

External Evaluation 40%

At the end of semester, written examination will be conducted by Dean's Office. The breakdown of the items and weightage is as follows:

10. Multiple Choice questions (10 x 1 points)	10
11. Short answer questions (5 x 2 points)	10
12. Long answer questions (2 x 10)	20

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First Semester: Digital Education Related Courses

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Course Title: **Digital Skills for Teacher**
Nature of Course: **Theoretical and Practical**
Course Code: DEd. 514

Credit Hours: 3
Teaching Hours: 48

Semester: First

Course Description

This course is designed to enable the students to integrate digital technologies into the pedagogy. The contents of this course are designed in such a way that produce digitally competent teacher for 21st century. The intent of this course is to transform the teachers' authoritative teaching methodology into students' self-directed learning through the integration of various ICT tools and techniques in online teaching learning and also seeks to develop the awareness to work ethically in the digital world. The content of this course covers ICT fundamental skills, communication and collaboration skills, digital content creation skills, safety and security skills, and digital resource management skills. The contents of this course are divided into the modular form. There are four modules with module objectives, learning outcomes, module contents, teaching and learning activities, assessment strategies, expected twenty-first century skills, and prescribed readings.

Course Objectives

At the end of this modular course, students will be able to

1. Communicate and collaborate using digital tools (computers, email, internet) in teaching-learning activities.
2. Develop and manage digital learning resources such as text (slides, pdf, word), media (Video, Audio) and interactives (animation and simulation).
3. Examine the security issues and principles, then apply them ethically in a working environment.
4. Explore and apply various e-resource management strategies for digital resource management. search engine for quality e-resources.

Module I: Digital Literacy and Fundamental ICT Skills

Module Objective

This module is designed to help the students to develop an understanding about the scope of digitalization in/of education. In addition, they will develop skill that is required to work, communicate and collaborate through cloud and computer.

Learning Outcomes

After the completion of this module students will be able to

- a. Critically analyze the concepts, issues and scope of digitalization of education in the context of Nepal.
- b. advocate the issues of the digital divide, digital inclusion, and media selection in education.
- c. download, install and operate general and subject-related applications for the teaching and learning process.
- d. communicate and collaborate in synchronous and asynchronous environments.

Module Contents

I. Digital Literacy

- Concept of digitalization in education
- Media Literacy in digital age

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- Digital inclusion and digital divides
- Teaching and media selection

II. ICT for Teachers

- Fundamental computer skills: Operating computer applications
- Email and social media as pedagogical tools
- Utilizing cloud services in teaching and learning activities

Online Class Hour: 15 hrs. (5 weeks)

Suggested Teaching and Learning activities

Learning activities are divided into three phases: pre-module, in-module and post-module activities. Pre-module activities comprised some activities that are assigned to learners for independent study, in-module activities are the real-time classroom activities, in this period both instructors and learners work together on the assigned contents, and post-module activities is particularly for the assessment of learning achievement purpose on learners after the completion of module activities.

<p>Pre-module activities In the pre-module setting, students will be provided reading materials that help to develop the conceptual understanding on learning contents. These learning materials will provide in weekly format using LMS (Moodle).</p>	21 st CS
<p>Pre-module readings</p> <ul style="list-style-type: none"> • Media literacy, digital divide and inclusion. • Fundamental computer skills: Work and communicate with computer. • Use of cloud services in teaching and learning activities. • Features of mobile apps. <p>Pre-module activities:</p> <ul style="list-style-type: none"> • Writing essays on issues related to media literacy, digital divide, digital inclusion etc. 	<i>Ways of thinking.</i>
<p>In-module Activities In-class activities will be based on</p> <ol style="list-style-type: none"> Individual and Group presentation: Digital media, issues of digital divide and inclusion. Practical activities: Working on cloud and computer. Group work: Each group will present in the class. One member of the group will conduct the practical activities and other will support. After the presentation, another group member (at least 1 member from each group) will reflect on the activities. 	<i>Ways of thinking Ways of working, Collaboration and communication skills, Reflective thinking</i>
<p>Post-module Activities The teacher will provide a task for assessment- Assessment task can be given to the individual students or to the group.</p> <ul style="list-style-type: none"> • Quiz for individual work: computer and accessories, mobile computing, media literacy. • Discussion questions: Digital divide, digital literacy, inclusion and competencies etc. 	<i>Ways of working and thinking</i>

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<ul style="list-style-type: none"> Group presentation: Asynchronous and synchronous working platform. 	
Learning Evaluation Group Work	<i>Collaboration, communication, and critical thinking</i>

Recommended Sources

- Bates, A.W. (2019). *Teaching in a Digital Age – Second Edition*. Vancouver, B.C.: Tony Bates Associates Ltd. Retrieved from <https://pressbooks.bccampus.ca/teachinginadigitalagev2/> [page: 457-515 - teaching and media selection]
- Manzoor, A. (2016). Media Literacy in the Digital Age: Literacy Projects and Organizations. In Yildiz, M. N., & Keengwe, J. (Eds.), *Handbook of Research on Media Literacy in the Digital Age* (pp. 249-274). IGI Global. <http://doi:10.4018/978-1-4666-9667-9.ch012>.
- Silberschatz, A., Gagne, G. & Galvin, P.B. (2018). *Operating System (10th Ed.)*. Wiley.
- Srinivasan, A. & Suresh, J. (2014). *Cloud Computing: A Practical Approach for Learning and Implementation*. Pearson.
- van Dijk, J. A. G. M and van Deursen, A. J. M (2014). *Digital skills unlocking the information society*. Palgrave Macmillan: New York. [page. 1-42]

Module II: Digital Resource Development

Module Objective

This module aims to support the students to develop the digital resources. Particularly, it will focus on to produce text content, audio-visual content, simulation and animation that are useful for teaching and learning activities for particular field. Besides these students will also enable to develop the course blog and share the developed resources in the blog.

Learning Outcomes

At the end of this module, students will be able to

1. develop text files using the text development tools used in the specified field of education.
2. publish teaching-learning material embedded with images, audio, and video.
3. design and manage the e-learning content using different e-learning portals.

Module Contents

- a. Developing Text.
- b. Producing Infographics, Podcasting, and Vodcasting [image, audio, and video].
- c. Integrating simulation and animation
- d. E-learning content creation, management and sharing

Online Class hour: 15 hrs. (5 weeks)

Suggested Teaching and Learning Activities

Pre-module readings and activities

In the pre-module setting, students will be provided reading materials that help to develop the conceptual understanding on

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learning contents. These learning materials will provide in weekly format using Moodle.	
<p>Pre-module readings</p> <ul style="list-style-type: none"> • Basic features of word processing and power-point presentation. • Text generating tools used in the specific field. • Audio and video editing tools. • Concept of simulation and animation. <p>Pre-module activities</p> <ul style="list-style-type: none"> • Observe any four classes of teachers who have been integrating ICT in their teaching-learning activities. Also, take an interview with them about how they are using digital tools in classroom activities • Students will write a short report and share with peers. Each peer will give feedback on the issue generated in the report. <p>Note: Moodle platform will be used to share, discuss and feedback on the content.</p>	<p><i>Ways of thinking (critical thinking, learning to learn, metacognition)</i></p> <p><i>Ways of working (ICT literacy, collaboration and cooperation)</i></p>
In-module Activities	
<p>Teacher Presentation: Teacher will give the presentation on pedagogical differences between media, media characteristics, different types of digital media and their pedagogical use and approaches in the first class.</p> <p>Practical Activities: In the following weeks, teachers and students will work simultaneously in the development and management of certain media contents. Students will voluntarily present the digital content and teacher will give the feedback instantly.</p> <p>Group work: Group of students will form according to their background. Same background's students will put in the group. After that, different task will be given to the different group. Task will be on the development of digital content file [must include: text, audio, video, animation and simulation]. Each individual of the group should work on specific digital content.</p>	<p><i>Ways of working and thinking (collaborative, commutative, cooperative and problem-solving skills)</i></p>
Post-module Activities	
<p>Home assignment: Develop the digital content resources from any topic of specified field. Digital content will include text, video, animation and simulation.</p> <p>Individual Presentation: Each student will present digital content in a small group and upload the presentation video in moodle.</p>	<p><i>Ways of thinking (innovation, creativity, communication)</i></p>
Learning Evaluation Assignment	<p><i>Ways of working, creativity and innovation.</i></p>

Recommended Sources

Bates, A.W. (2019). *Teaching in a Digital Age – Second Edition*. Vancouver, B.C.: Tony Bates Associates Ltd. Retrieved from

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<https://pressbooks.bccampus.ca/teachinginadigitalagev2/> [page: 369-405, Pedagogical differences between media].

Gibson, D., C. Aldrich, and M. Prensky (2007), *Games and Simulations in Online Learning: Research and Development Frameworks*. Idea Group Inc. (IGI).

GoodFirms.(n.d.). *Top 7 Free and Open Source Animation Software Tools*. Retrieved April 27, 2021, from <https://www.goodfirms.co/blog/top-7-free-and-open-source-animation-software-tools>

GoodFirms.(n.d.). *The Top 8 Free and Open Source Simulation Software*. Retrieved April 27, 2021, from <https://www.goodfirms.co/blog/the-top-8-free-and-open-source-simulation-software>

Microsoft.(n.d.). *Word help & learning - Microsoft Support*. Retrieved April 27, 2021, from <https://support.microsoft.com/en-us/word>

Microsoft.(n.d.). *Excel help & learning - Microsoft Support*. Retrieved April 27, 2021, from <https://support.microsoft.com/en-us/excel>

Microsoft.(n.d.). *PowerPoint help & learning - Microsoft Support*. Retrieved April 27, 2021, from <https://support.microsoft.com/en-us/powerpoint>

Module III: Security Skills for Teachers

Module Objective

This module seeks to develop the essential internet security skills on students when working in the virtual world. This knowledge would help the perspective teachers to conduct their teaching and learning activities in safe environment.

Learning Outcomes

At the end of this module, students will be able to

- analyzing the importance of security and privacy components in teaching-learning environment.
- protecting themselves from social engineering and bots.
- blocking network access to apps that are intended not to use network or are not in use or unwanted.
- applying and configuring the wireless security

Module Contents

I. Security and privacy in online teaching.

II. Managing security issues

- Protecting yourself (Social Engineering, Legal Solutions),
- Malicious programs (Malware, Protecting programs, Bots),
- Protection of personal devices
- Netizen and social ethics

Online Class hour: 9 hrs. (3 weeks)

Suggested Teaching and Learning Activities

Pre-module readings and activities

In the pre-module setting, students will be provided reading materials that help to develop the conceptual understanding on learning contents. These learning materials will provide in weekly format using Moodle.

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<p>Pre-module readings</p> <ol style="list-style-type: none"> Security and privacy, social media and crowd sourcing Dimensions of network security Wireless network and wireless security <p>Pre-module activities</p> <ul style="list-style-type: none"> Prepare a 3 mins video on topic Security threats, social media and crowd sourcing in a group of 2 or 3 co-learners and upload it in video sharing platform Prepare list of electronic devices that you are currently using and note down how much time you spend in each of those devices and why? Prepare list of account that you are using in web and purpose of each List the no of spam mails in your mailbox in last 15 days and why you've received that? 	<p><i>Ways of Thinking</i></p> <p><i>Collaboration, Communication and Critical thinking</i></p>
<p>In-module activities</p>	
<ol style="list-style-type: none"> Teacher prepares the lesson in different forms: Presentation slides, interactive video and audio books to teach contents and involve students in quiz, puzzles, class works in individual or in group activities to take feedback of the lesson. Students' work: Student prepares the same lesson on another day in group of 4 and integrates with other group members iteratively until the whole classroom divides in 2 groups. Then final 2 groups provide constructive feedback to each other. In the whole process teacher acts as facilitator only. 	<p><i>Critical thinking, Creativity, Collaboration, Communication</i></p>
<p>Post-module activities</p>	
<p>Project work:</p> <ul style="list-style-type: none"> Gather information about Web Bugs, Botnets and Web Mining with their pros and cons and how they are being used by internet giants (google, Facebook etc.) individually and then aggregate the contents with 4 co-learners and present the contents to the class. Evaluate the work of at least 3 peers and provide feedback. 	<p><i>Critical thinking, Creativity, Collaboration, Communication</i></p> <p><i>Career and Learning, Computing technology</i></p>
<p>Learning Evaluation Peer-graded assignment</p>	<p><i>Critical thinking, meta-cognition</i></p>

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Recommended Sources

- Kurose J.F. & Ross K.W. (2018). *Computer Networking: A Top-Down Approach (6th Ed.)*. Pearson. (p. 671 - 739).
- Laudon K. C. & Laudon J. P. (2014). *Management Information System: Managing Digital Firm (13th Ed.)*. Pearson. (p. 323 - 363).
- Silberschatz A., Gagne G. & Galvin P.B. (2018). *Operating System (10th Ed.)*. Wiley. (p. 621 - 697).

Module IV: E-resources Management and Ethical Issues

Module Objective

This module intends to develop the understanding on the students about the crux of e-resources and their pedagogical implications. It also develops the awareness on students while managing e-resources in their teaching and learning environments.

Learning Outcomes

At the end of this module, students will be able to

- applying the e-resource management strategies in searching, accessing and managing the resources for pedagogical uses.
- googling and reviewing open learning and open educational resources.
- maintaining the academic ethics and integrity in using the digital resources.

Module Contents

1. E-resources and learning

- i. E-resource management strategies
- ii. Open learning and Open educational resources (Example: MOOC,

2. Ethical Dimensions

- i. Copyright and Licensing
- ii. Moral and Ethical Issues (Privacy, Cyber law in Nepal, Intellectual Property Rights and Copyright Laws)
- iii. Academic ethics and plagiarism

Online Class hour: 9 hrs. (3 weeks)

Learning Activities

Pre-module readings and activities: In the pre-module setting, students will be provided reading materials that help to develop the conceptual understanding on learning contents. These learning materials will provide in weekly format using Moodle.	21st CS
Pre-module readings: <ul style="list-style-type: none">• e-Resource and open learning sites.• Digital Library• e-Databases• Laws• Pedagogy of online learning Pre-module activities: <ul style="list-style-type: none">• Prepare presentation file for basic concepts, features and application of e-resources and learning strategies	<i>Ways of thinking</i> <i>Ways of working</i>

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<ul style="list-style-type: none"> List the ethical consideration, issues of e-Journals, e-Books, Digital Library, e-Databases for academic ethics, Access mechanisms and restriction. The students will form a forum for their works and each student will post their view into that forum and provide feedback to the others. 	
<p>In-module activities</p> <p>Presentation from Teachers and students:</p> <ul style="list-style-type: none"> Use of Internet in library as well as licensing of e-resources and information centers Explore the innovative information searching tools and techniques Evaluate e-resources and their management Types of e-resources and managing e-resources (life-cycle of e-resources) <p>Group work - The teacher will provide three questions, each from the E-resources, E-pedagogy and Ethical dimensions for learning. The students will work in group of 3 or 4, discuss the issues in their group, and come up with their answer and comments of these questions.</p>	<p><i>Ways of working Communication and collaboration</i></p>
<p>Post-module activities</p> <ul style="list-style-type: none"> Each student will be asked to choose open learning resources and critically examine its implication in academic environment and prepare a short video for ethical use of the resource. They will upload their video in the Moodle and each student will be asked to watch and provide feedback. Case study: Implication of laws in online working environment Assessment of Case study from peers and teachers. 	<p><i>Critical thinking, problem solving, communication, self-reflection</i></p>
<p>Learning Evaluation Written Examination</p>	<p><i>Problem-solving, meta-cognition, learning to learn.</i></p>

Recommended Sources

- Bates, A.W. (2019). *Teaching in a Digital Age – Second Edition*. Vancouver, B.C.: Tony Bates Associates Ltd. Retrieved from <https://pressbooks.bccampus.ca/teachinginadigitalagev2/> [for MOOC, pp. 215-25, for open learning and open educational resources, pp. 561-597].
- Government of Nepal (2017). *Intellectual Property Rights (IPR) Policy* (2017). Kathmandu: Author.
- Laudon K. C. & Laudon J. P. (2014). *Management Information System: Managing Digital Firm (13th Ed.)*. Pearson. (p. 323 - 363).
- Sarojadevi, K. & Padmamma, S. (2011). Digital resource management strategies. In M. Khosrow-Pour (Ed.). *Digital Multimedia: Concepts, Methodologies, Tools,*

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and Applications (pp. 68-81). Retrieved from <https://doi.org/10.4018/9781599049533.ch002> [for e-resource management strategies]

The Electronic Transactions Act, 2063 (Nep.). Retrieved from <https://www.lawcommission.gov.np/en/wp-content/uploads/2018/10/electronic-transaction-act-2063-2008.pdf>

Tribhuvan University (2019). *TU Electronic Communication Management Act 2077*. Kathmandu: Author.

Evaluation

Internal Evaluation 60%

Internal assessment will be done by the course teacher. S/he will evaluate the students' academic activities and performance of course work based on the following criteria and weightage:

17. In-semester, Midterm, Pre-board Examinations 30
18. Class-room Activities (Class Presentations, Group Works, Discussion etc.) 10
19. Assignments/Seminar/Quiz 10
20. Class Attendance 10

External Evaluation 40%

At the end of semester, written examination will be conducted by Dean's Office. The breakdown of the items and weightage is as follows:

- | | |
|---|----|
| 13. Multiple Choice questions (10 x 1 points) | 10 |
| 14. Short answer questions (5 x 2 points) | 10 |
| 15. Long answer questions (2 x 10) | 20 |

Recommended Sources

Bates, A.W. (2019). *Teaching in a Digital Age – Second Edition*. Vancouver, B.C.: Tony Bates Associates Ltd. Retrieved from

<https://pressbooks.bccampus.ca/teachinginadigitalagev2/> [Module I, II, IV]

Gibson, D., C. Aldrich, and M. Prensky (2007), *Games and Simulations in Online Learning: Research and Development Frameworks*. Idea Group Inc. (IGI).[Module II]

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Government of Nepal (2017). *Intellectual Property Rights (IPR) Policy* (2017). Kathmandu: Author. [Module IV]

Kurose J.F. & Ross K.W. (2018). *Computer Networking: A Top-Down Approach* (6th Ed.). Pearson. (p. 671 - 739). [Module III]

Laudon K. C. & Laudon J. P. (2014). *Management Information System: Managing Digital Firm* (13th Ed.). Pearson. (p. 323 - 363). [Module III and IV]

Manzoor, A. (2016). Media Literacy in the Digital Age: Literacy Projects and Organizations. In Yildiz, M. N., & Keengwe, J. (Eds.), *Handbook of Research on Media Literacy in the Digital Age* (pp. 249-274). IGI Global. <http://doi:10.4018/978-1-4666-9667-9.ch012>. [Module I]

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- Microsoft.(n.d.). *Excel help & learning - Microsoft Support*. Retrieved April 27, 2021, from <https://support.microsoft.com/en-us/excel> [Module II]
- Microsoft.(n.d.). *PowerPoint help & learning - Microsoft Support*. Retrieved April 27, 2021, from <https://support.microsoft.com/en-us/powerpoint> [Module II]
- Sarojadevi, K. & Padmamma, S. (2011). Digital resource management strategies. In M. Khosrow-Pour (Ed.). *Digital Multimedia: Concepts, Methodologies, Tools, and Applications* (pp. 68-81). Retrieved from <https://doi.org/10.4018/9781599049533.ch002> [for e-resource management strategies] [Module IV]
- Silberschatz, A., Gagne, G. & Galvin, P.B. (2018). *Operating System (10th Ed.)*. Wiley. [Module I, III]
- Srinivasan, A. & Suresh, J. (2014). *Cloud Computing: A Practical Approach for Learning and Implementation*. Pearson. [Module I]
- GoN (2063 B.S.). *The Electronic Transactions Act, 2063 (Nep.)*. Retrieved from <https://www.lawcommission.gov.np/en/wp-content/uploads/2018/10/electronic-transaction-act-2063-2008.pdf> [Module IV]
- Tribhuvan University (2019). *TU Electronic Communication Management Act 2077*. Kathmandu: Author. [Module IV]
- van Dijk, J. A. G. M and van Deursen, A. J. M (2014). *Digital skills unlocking the information society*. Palgrave Macmillan: New York. [page. 1-42] [Module I]

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Course Title: **Innovative Technology in Education**

Course Code: DEd. 515

Semester: First

Credit Hours: 3
Teaching Hours: 48

Course Introduction:

This course enables students to conceptualize innovative technologies and integration into the teaching-learning process in a pedagogical way to support learning and instructional design. It also covers the issues involved in developing innovative educational technologies, best practices of integration and practical application of innovative technologies skills as required to promote 21st Century teaching and learning.

Course Objectives:

After completion of the course, students should be able to:

- Identify and explore the innovative technology used in the teaching-learning process and paradigms shifting in digital pedagogy.
- Examine the impact of innovative technology integration and its management issues in educational institutes.
- Integrate the recent appropriate educational innovative technologies for the design and development of learning materials/resources.
- Integrate the emerging appropriate educational innovative technologies for face-face and virtual classroom management.

Module 1: Introduction of Innovative Technologies and Educational Application (12 Hrs.)

Module objectives:

This module aims to help students understand the concept of innovative technology and explore the use of appropriate innovative technologies education system.

Learning Outcomes

After the completion of this module students will be able to:

- Classify the key concepts and principles of educational technology
- Define the roles of innovative technologies in education system.
- Explore the application area Artificial Intelligence, AR/VR/MR in teaching learning.
- Explore the application area Internet of Things (IoT) in teaching learning.
- Explore the application area Bigdata and cloud Computing in teaching learning.

Module contents

- Introduction to Innovative Technology.
- Evolution of emerging technology and changing context in education system.
- Applications of AI (NLP, Machine Learning, Deep Learning) in education
- Applications AR/VR/MR in education
- Application of IoT and Big Data in education
- Application of Cloud Services and simulation environment in education.

Suggested Teaching and Learning activities

Learning activities are divided into three phases: pre-module, in-module, and post-module activities. Pre-module activities comprised some activities that are assigned to learners for independent study, in-module activities are the real-time classroom activities, in this period both instructors and learners work together on the assigned contents, and post-module activities is particularly for the assessment of learning achievement purpose on learners after the completion of module activities.

Pre-module activities	21 st cs Skills
Reading materials will be based on b. Innovative Technology and trends c. Dimension of Technology and Educational d. Evolution of emerging technology and changing context e. Major innovative technology overviews videos/audio.	Ways of thinking
In-module Activities In-class activities will be based on a. Group work and presentation: Evolution of emerging technology and changing context and its impacts in education. b. Case study and simulation: Application of AI (NLP, Machine Learning, Deep Learning) in education, Application AR/VR/MR in education, Application of	Ways of Thinking Ways of Working Tools of Working

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IoT in education, Application of Big Data and Business Intelligence, Application of Cloud Services and simulation environment in education	
Post-module Activities	
Post-module activities will be based on a. Quiz: Definition of AI, Machine learning, AR/VR, IoT, Cloud services. b. Discussion: AR/VR/MR and Education c. Assignment: Cloud services/Simulation in Education	Ways of Working Ways of Living

Recommended Resources

Educational technology. (2019). New York, NY: Springer Berlin Heidelberg.
Industry 4.0. (2018). Springer Berlin Heidelberg.
The Educational Intelligent Economy : Big Data, Artificial Intelligence, Machine Learning and the Internet of Things in Education, edited by Tavis D. Jules, and Florin D. Salajan, Emerald Publishing Limited, 2019.
<https://elearningindustry.com/augmented-reality-in-education-staggering-insight-into-future>

Module 2: Managing of Technology in Education (12 Hrs.)

Module objectives

This module aims to analyze the socio-economic and learning impacts on educational system with influence of innovative technology. This module also provides ability to technology management issues including its evolutionary pattern, acquires. adoption, forecasting and self-innovational practices of innovative technology.

Learning Outcomes

After the completion of this module students will be able to:

- Analyze the impact of innovative technology on 21st century skills and educational system.
- Define technology management issues.
- Describe Technology life cycle and adoption cycle.
- Draw a methods and process to acquire, forecast and diffusion of innovative technology.

Module contents

- Impact of Innovative technology on educational system
- Introduction to technology management
- Technology life cycle
- Technology Adoption cycle
- Methods and Methods Technology acquire, forecast, diffusion.
- Innovation and development

Suggested Teaching and Learning activities

Learning activities are divided into three phases: pre-module, in-module, and post-module activities. Pre-module activities comprised some activities that are assigned to learners for independent study, in-module activities are the real-time classroom activities, in this period both instructors and learners work together on the assigned contents, and post-module activities is particularly for the assessment of learning achievement purpose on learners after the completion of module activities.

Pre-module activities	21st cs Skills
Reading materials will be based on a. Education Impact of innovative Technology b. Introduction educational Technology and it cycle c. Technology adaptation cycles d. Concept of technology adaptation, acquire, forecast, diffusion.	Ways of thinking
In-module Activities	
In-class activities will be based on a. Group work and presentation: Educational Innovative technology and impact of developing countries. b. Case study and simulation: technology acquire, forecasting, diffusion practices in higher education system. c. Group Discussion: in-house technology innovation and development in higher education.	Ways of Thinking Ways of Working Tools of Working
Post-module Activities	
Post-module activities will be based on a. Quiz: Definition of Technology management terminology. b. Discussion: Technology adaptation cycle c. Assignment: Impact of innovative technology in higher education.	Ways of Working Ways of Living

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Prescribed resources

Technology Management in Business Education, Emerald Publishing Limited, 2017. *ProQuest Ebook Central*,

Module 3: Integration of appropriate Innovative Technology for material design (12 Hrs.)**Module objectives**

This module aims to integration of innovative technology for design the instructional materials, apply the collaboration and communication tools and assessment, evaluation and feedback for teaching learning activities.

Learning Outcomes

After the completion of this module students will be able to:

- Apply innovative technology to design instructional materials.
- Apply innovative tools for collaboration and communication.
- Integrate innovative technology to assessment, evaluation and feedback.

Module contents

- Integration on instructional materials design such as simulation, gaming, AR/VR/MR, Deep Learning etc.
- Integration on collaboration and communication such as chatbot, AI tools, cloud services.
- Integration on assessment and evaluation such as gaming, quiz, puzzles, rubrics, automated evaluation tools, learning analytics, BI
- Integration on Feedback such BI, instant messaging, email, portfolio automation,

Suggested Teaching and Learning activities

Learning activities are divided into three phases: pre-module, in-module, and post-module activities.

Pre-module activities comprised some activities that are assigned to learners for independent study, in-module activities are the real-time classroom activities, in this period both instructors and learners work together on the assigned contents, and post-module activities is particularly for the assessment of learning achievement purpose on learners after the completion of module activities.

Pre-module activities	21 st cs Skills
Reading materials will be based on a. Application and tools about simulation, gaming, AR/VR/MR b. Application and tools about Collaboration and communication. c. Application and tools about feedback and portfolio management.	Ways of thinking
In-module Activities In-class activities will be based on a. Demonstration and presentation: simulation, gaming, AR/VR/MR b. Demonstration and presentation: Collaboration and communication c. Demonstration and presentation: Collaboration and communication: feedback and portfolio management.	Ways of Thinking Ways of Working Tools of Working
Post-module Activities Post-module activities will be based on a. Quiz: Application of innovative technology used on instructional materials design. b. Project work: innovative technology Integrated materials development and assessment model. c. Assignment: innovative technology collaboration and communication.	Ways of Working Ways of Living

Prescribed resources

The Educational Intelligent Economy: Big Data, Artificial Intelligence, Machine Learning and the Internet of Things in Education, edited by Tavis D. Jules, and Florin D. Salajan, Emerald Publishing Limited, 2019.

<https://www.oecd.org/education/cei/GEIS2016-Background-document.pdf>

Module 4: Integration of appropriate Innovation Technology for classroom/virtual (12 Hrs.)**Module objectives**

This module aims to integration of innovative technology in classroom management and virtual class room for teaching learning activities. It also focusses on how to empower tools based professional development to the teachers.

Learning Outcomes

After the completion of this module students will be able to:

- Demonstrate innovative technology to smart classroom.

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- Apply innovative tools for collaboration and communication.
- Integrate innovative technology to assessment, evaluation and feedback.
- Discuss the teacher professional development and innovative technology.

Module contents

- Integration on classroom management such as IoT (Automated door Lock, Identity management, Attendance), machine visioning (Face Detection), AR/VR/MR (Chatbot, HoloLens etc.), project management tools.
- Integration on collaboration and communication such as chatbot, AI tools, cloud services.
- Teacher Professional development and Innovative technology (Calendaring tools, smart wear etc.),

Suggested Teaching and Learning activities

Learning activities are divided into three phases: pre-module, in-module, and post-module activities. Pre-module activities comprised some activities that are assigned to learners for independent study, in-module activities are the real-time classroom activities, in this period both instructors and learners work together on the assigned contents, and post-module activities is particularly for the assessment of learning achievement purpose on learners after the completion of module activities.

Pre-module activities	21 st cs Skills
Reading materials will be based on a. Application and tools about IoT, Machine Learning and Project management tools which is used in classroom. b. Application and tools about Collaboration and communication in classroom. c. Application and tools about teacher professional development.	Ways of thinking
In-module Activities In-class activities will be based on a. Demonstration and presentation: IoT, Machine Learning and Project management tools which is used in classroom b. Demonstration and presentation: Collaboration and communication in classroom. c. Demonstration and presentation: teacher professional development.	Ways of Thinking Ways of Working Tools of Working
Post-module Activities Post-module activities will be based on a. Quiz: classroom management Innovative tools. b. Project work: innovative technology Integrated teacher professional application. c. Assignment: Collaboration using Innovative tools.	Ways of Working Ways of Living

Prescribed resources

Educational technology. (2019). New York, NY: Springer Berlin Heidelberg.

<https://elearningindustry.com/augmented-reality-in-education-staggering-insight-into-future>

Evaluation

Internal Evaluation 60%

Internal assessment will be done by the course teacher. S/he will evaluate the students' academic activities and performance of course work based on the following criteria and weightage:

21. In-semester, Midterm, Pre-board Examinations 30
22. Class-room Activities (Class Presentations, Group Works, Discussion etc.) 10
23. Assignments/Seminar/Quiz 10
24. Class Attendance 10

External Evaluation 40%

At the end of semester, written examination will be conducted by Dean's Office. The breakdown of the items and weightage is as follows:

- | | |
|---|----|
| 16. Multiple Choice questions (10 x 1 points) | 10 |
| 17. Short answer questions (5 x 2 points) | 10 |
| 18. Long answer questions (2 x 10) | 20 |

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