

**TRIBHUVAN UNIVERSITY  
INSTITUTE OF ENGINEERING**

**MASTER PROGRAMS GUIDELINES  
(ACADEMIC ADMINISTRATION)**

**2018**

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# **1. INTRODUCTION**

## **1.1 History of IOE**

History of engineering education in Nepal can be traced since 1942, when Technical Training School was established. Engineering section of the school offered only trades and civil sub-overseers programs. In 1959, Nepal Engineering Institute, with the assistance of the government of India, started offering civil overseer courses leading to Diploma in Civil Engineering. The Technical Training Institute established in 1965, with the assistance from the Government of Federal Republic of Germany, offered technician courses in General Mechanics, Auto Mechanics, Electrical Engineering and Mechanical Drafting.

In 1972, the Nepal Engineering Institute at Pulchowk and the Technical Training Institute at Thapathali were brought together under the umbrella of the Tribhuvan University to constitute the Institute of Engineering and the Nepal Engineering Institute and the Technical Training Institute were renamed as Pulchowk Campus and Thapathali Campus respectively.

Since then, the Institute of Engineering has expanded considerably. The technician programs in Electrical, Electronics, Refrigeration/Air-conditioning Engineering were started in the Pulchowk Campus, with the assistance from UNDP/ILO. The Architecture Technician program was started by the IOE in its own effort. With the assistance of the World Bank and UK, later, the existing technician level courses were strengthened and Bachelor's Degree level course in Civil Engineering was started. Similarly, with the assistance of the World Bank, the Swiss Government, and the Canadian Government, Bachelor Degree level courses in the Electronics, Electrical Engineering were started in 1994 and Mechanical Engineering and Architecture were started in 1995 in the Pulchowk Campus. From academic year 1998/99 IOE has started Bachelor's Degree program in Computer Engineering.

The existing Bachelor's programs were extended as well as new Bachelor's programs were initiated in other constituent campuses. Bachelor's Program in Agriculture Engineering was started at Purwanchal Campus since 2001. In 2006, Bachelor's Program in Industrial Engineering, and in 2015, Bachelor's Program in Automobile Engineering was started at Thapathali Campus. Similarly Bachelor's Degree in Geomatics Engineering was started in Pashchimanchal Campus, Pokhara.

From the year 2014, all the diploma level programs were phased out and the IOE concentrated its programs spanning from Bachelor through Master to Ph.D. levels.

## **1.2 Initiation of (Post Graduate) Master Programs in IOE**

In 1996 Pulchowk Campus, with support from the Norwegian Government, has started M.Sc. Courses in Structural Engineering and Urban Planning. Environmental Engineering program was started in 1997 and Water Resources Engineering was started in 1998. Since then several M. Sc.

Programs were added in different streams. Now 19 different M. Sc. programs are being offered by different departments of Pulchowk Campus. From 2014 onwards other constituent campuses have also started different master programs. Now Thapathali Campus is offering two master programs and Pashchimanchal Campus, Pokhara is also offering three master programs.

Institute has also started regular Ph D admission from academic session 2010/11 in all departments.

### 1.3 List of Master Programs

List of master programs offered by different departments of the constituent campuses are given below.

#### Master Programs at Pulchowk Campus

S. No.	Program	First Intake	Offering Department
1.	Urban Planning	1996	Department of Architecture
2.	Energy for Sustainable Social Development	2016	
3.	Energy Efficient Buildings	2017	
4.	Structural Engineering	1996	Department of Civil Engineering
5.	Water Resources Engineering	1998	
6.	Environmental Engineering	1997	
7.	Geotechnical Engineering	2002	
8.	Transportation Engineering	2010	
9.	Disaster Risk Management	2011	
10.	Construction Management	2012	
11.	Power System Engineering	2001	Department of Electrical Engineering
12.	Information & Communication Engineering	2001	Department of Electronics and Computer Engineering
13.	Computer Systems and Knowledge Engineering	2013	
14.	Renewable Energy Engineering	2001	Department of Mechanical Engineering
15.	Technology and Innovation Management	2010	
16.	Energy Systems Planning and Management	2012	
17.	Mechanical Systems Design and Engineering	2017	
18.	Climate Change and Development	2013	Department of Science and

<b>19.</b>	Material Science & Engineering	2015	Humanities
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#### **Master Programs at Thapathali Campus**

<b>S. No.</b>	<b>Program</b>	<b>First Intake</b>	<b>Offering Department</b>
<b>1.</b>	Earthquake Engineering	2014	Department of Civil Engineering
<b>2.</b>	Mechanical Engineering Design and Manufacturing	2017	Department of Mechanical & Automobile Engineering

#### **Master Programs at Western Region Campus**

<b>S. No.</b>	<b>Program</b>	<b>First Intake</b>	<b>Offering Department</b>
<b>1.</b>	Communications and Knowledge Engineering	2015	Department of Electronics and Computer Engineering
<b>2.</b>	Distributed Generation Engineering	2015	Department of Electrical Engineering
<b>3.</b>	Infrastructure Engineering and Management	2015	Department of Civil Engineering

#### **Proposed Master Programs for Academic Year 2074/75 (2018 AD)**

The M. Sc. Programs introduced from this academic year of 2074/75 in different constituent campus of IOE are:

<b>S. N.</b>	<b>Program</b>	<b>Offering Campus</b>	<b>Offering Department</b>
<b>1.</b>	Hydropower Engineering	Pulchowk	Department of Civil Engineering
<b>2.</b>	Applied Mathematics	Pulchowk	Department of Science and Humanities
<b>3.</b>	Land and water Resources Engineering	Purwanchal	Department of Civil and Agriculture Engineering

## 2. FEE STRUCTURE

Fees arrangements for Masters' Program are listed in Table below.

**Table: Fee Distributions for M.Sc. Programs**

<b>Descriptions</b>	<b>Regular</b>	<b>Full Fee</b>	<b>Sponsored</b>	<b>Foreign Student</b>
Tuition fee (Per Semester)	12,180/-	51,000/-	1,35,000/-	US \$ 1,800/-
Exam Fee (Per Semester)	1,000/-	1,000/-	1,000/-	US \$ 10/-
Refundable Deposit				
Campus Deposit	1,000/-	1,000/-		US \$ 10/-
Lab Deposit	1,000/-	1,000/-		US \$ 10/-
Library Deposit	1,000/-	1,000/-		US \$ 10/-
Nonrefundable Fund				
Campus development Fund	3,000/-	3,000/-		US \$ 200/-
Maintenance Fund	2,000/-	2,000/-		
ID Card Fee	175/-	175/-	175/-	US \$ 20/-
At the time of Admission	21,355/-	60,175/-	❖ 5,46,175/-	US \$2,060/-
TU Registration fee Rs 500/- (Rs 1000/- for the students passing B. E. or equivalent from abroad) and Graduate Conference fee of Rs 5,000/- for all students.				
❖ The candidates under sponsored category have to pay the fee for full course duration (two years) at the time of admission. Also payment of fees by the candidate under sponsored category shall be received only by cheque of the sponsoring agency. The cash transaction shall not be entertained.				

The candidates should pay extra charge for internet access and conference publication separately during admission as per Campus rule and any extra services as specified by TU. The given fee structure is for completing the minimum specified courses within two years of academic session. Candidates willing to secure extra credit courses or failing to complete the courses within the specified time frame should pay extra fee accordingly as per campus regulation.

### 3. COURSE STRUCTURE

The curriculum is organized in the framework of credit system. Each course has a certain number of credits which indicates the weight. The number of credits depends on the contact hours for the course. Normally a course of 4 credits is designed for 4 contact hours of lecture classes plus tutorial, laboratory and assignment works per week, for 15 weeks of one semester. The tutorial on each course may include laboratory, simulation works, assignment and seminar works as prescribed by the course instructor.

Semester	Core	Elective	Project	Thesis	Total (Credits)
I	16 credits	0-4 credits			16 – 20
II	8 credits	4-12 credits			12 – 20
III*		0-8 credits	4 credits		4 – 12
IV				16	16
<b>TOTAL</b>					<b>60</b>

\* Thesis proposal defense should be completed within third semester.

- Any student should take 24 credits of core courses, 16 credits of elective courses 4 credits of project and 16 credits of thesis.

### 4. CONDUCTION OF CORE AND ELECTIVE COURSES

Course instructors conducting core and elective courses should be assigned at least one week before the beginning of the semester. Course instructor should prepare the lesson plan for the respective course and submit to the respective program coordinator within one week from the beginning of the semester. Lesson plan should include at least 40 contact hours (including lectures, presentations, specific lab works, etc.), 5 assignments and two internal tests. Research paper review, case study and presentations appropriate to the course should also be included.

Course instructor should submit attendance, details of internal evaluation (minor tests, assignments, presentations, etc.) and feedback about the course to the program coordinator at the end of the semester. The program coordinator should compile the same for all courses and submit to the head of the department.

#### 4.1 Elective Course Registration

Students should register themselves in the elective courses offered by the programs in that semester before the beginning of the class. Students may switch the elective with the permission of program coordinator in case of any valid reason within the first week of the beginning of the semester. List of students for each elective course should be finalized by the program coordinator

within first two weeks from the beginning of the semester and submit to academic administration unit of the campus through the department head. Minimum number of students for each elective course should not be less than 6.

#### **4.2 Provision for Open Elective**

Any student can take a maximum of 8 credits of open elective offered by any other departments or offered by the other master programs of the same department. For the open electives students of each program should apply to their respective program coordinator and he/she will precede it to the related program/department.

#### **Annex 1: Form for open elective registration**

#### **4.3 Provision for Extra Credits**

If any student is interested to take elective courses more than specified credits (16 credits in current structure), S/he has to register for those courses with the registration fee of Rs 2000 per credit for the extra course. Program coordinator should permit student to take extra credits after payment of necessary fees to account section of campus.

Similarly, any professional can also take the M. Sc. Courses as a training course with registration fee of Rs 5000 per credit to account section of campus.

After paying all necessary fees in account section of campus a candidate will get an approval letter from academic administration of campus for enrollment. By using this approval letter he/she can enroll in elective course of corresponding M. Sc. program.

Any candidate who has successfully completed extra credit will get certificate from the campus after recommendation from the course instructor and program coordinator about his/her success in the course.

#### **Annex 2: Form for extra credit course registration**

#### **Annex 3: Sample certificate for extra credit course**

## **5. CONDUCTION OF PROJECT WORK**

Students should perform research work for the fulfillment of requirement of project work. Students should present their proposals for their project work within first two weeks from beginning of the third semester. Students should also submit reports and attend presentations on findings from their project work within the third semester.

Activities related to project work are carried by program supervisory committee. The program supervisory committee may conduct four meetings for proposal presentation, mid-term presentation, final presentation and finalization & submission of marks of the project work.

Supervisor for the project work will get remuneration of Rs 5000 for each project carried by a student. If same project work has two or more students 60 % will be added as remuneration for each additional student. Letter regarding remuneration of supervisors assigned for the project should be forwarded to campus administration by the program coordinator through department administration.

Any faculty could take maximum 4 project titles for a batch at the same time the total number students that a faculty can have should not exceed 10. If required faculties are not available, to assign more than four project titles, program coordinator should take permission from the campus chief with recommendation of the respective head of the department. This permission remains valid for that academic session only.

## **6. CONDUCTION OF THESIS WORK**

Students should pass all the core courses before registering for the thesis and have to pass all the core courses, elective courses and project work before attending the final thesis defense.

The topics of thesis to be offered by the different faculty members may be floated. The students will be asked to give their preferences of the topics offered. Alternatively, the students will be asked to give their own topics of interest. Students should submit thesis proposals to the respective Program Coordinator. They can consult with the available faculties for the preparation of thesis proposal. Proposal defense of thesis should be completed by the end of second year first part (third semester).

The thesis supervisor assignment for the candidates who has successfully completed proposal defense will be completed within first week of fourth semester.

The program supervisory committee, considering the preferences given by the students and the availability of faculty supervisors, will finalize the thesis topics and thesis supervisors. Different activities associated with thesis will be carried out by the decision of program supervisory committee.

The program supervisory committee will be formed by the campus chief as:

**Coordinator:** Respective Master Program Coordinator for corresponding program

**Member 1:** Head of the respective department or faculty of the related area nominated by the Head

**Member 2:** Instruction Committee Chairman of the related area or faculty of the related area nominated by the Instruction Committee Chairman. If there is no instruction committee of the respective area, member will be nominated by the Coordinator.

The program supervisory committee will carry mainly the following activities:

- Conduction of proposal defense and the appointments of the supervisors
- External examiner appointment and evaluation of midterm thesis defense
- External examiner appointment and evaluation of final thesis defense
- Approval of the final marks of the thesis

The program supervisory committee should invite other professors of the related field during proposal defense, mid-term defense and final defense of the thesis.

The gap between the midterm thesis defense and the final thesis defense should not be less than 4 weeks.

Schedule for the final exam and thesis related activities will be included in the academic calendar of IOE.

**Any faculty could take maximum 4 theses for a batch. If required faculties are not available; to assign more than four theses, program coordinator should take permission from the campus chief with recommendation of the respective head of the department. This permission remains valid for that academic session only.**

It is the responsibility of the students to manage the resources for their thesis work.

## **7. EVALUATION OF CORE AND ELECTIVE COURSES**

The evaluation is based on the internal evaluation and the final examination. The students have to pass separately in the internal evaluation as well as in the final examination. The minimum pass marks for the internal assessment is 50%.

The internal evaluation is based on the continuous assessment by the course instructor. It is carried out by internal assessments, assignments, seminar works and other such activities.

The final evaluation is conducted at the end of semester by Examination Control Division, Institute of Engineering, Tribhuvan University. The minimum pass marks for the final examination is also 50%.

Marks of internal evaluation should be forwarded to the academic administration of the campus by the program coordinator through department head before the beginning of the semester end exam.

#### **Annex 4: Submission of internal mark**

## **8. PROJECT WORK EVALUATION**

Evaluation of each project will be carried out by:

Committee Members 40%

Supervisor 60%

(both for midterm and final presentation.)

## **9. THESIS EVALUATION**

Evaluation of each thesis will be carried out by:

### **(a) Midterm Evaluation**

Committee Members 20%

Supervisor 60%

External Examiner 20%

### **(b) Final Evaluation**

Committee Members 20%

Supervisor 60%

External Examiner 20%

**Internal Marks of 60:** Average of Evaluation by supervisor in both Midterm and Final evaluation

**Final Marks of 40:** Average of Evaluation by committee members and external examiner in both Midterm and Final evaluation

Distribution of marks for thesis evaluation is found to be different for different programs. It is recommended to have uniform distribution as prescribed.

Final presentation: Final evaluation of thesis will be conducted at the end of each semester that is published in Academic Calendar of IOE. The mid-term evaluation of thesis will be held at least one month prior to final thesis defense.

A student is allowed to attend the mid-term thesis defense if he/she has completed at least 70% of the research work i.e. he/she can assure the achievement of expected output.

For the completion of thesis; at least one publication that is related with thesis work is mandatory. The publication might be on any international journal or national journal or international conference or national level conference.

Student should consult with corresponding department about the journal or conference before publishing his/her paper. All journal paper or conference proceedings may not be accepted by the corresponding department.

Schedule for academic activities i.e. final exam and thesis related activities will be published in the academic calendar of IOE.

The compiled marks of thesis (internal marks at 60 and final marks at 40 as specified above) should be submitted by corresponding M. Sc. Program within specified date as published in academic calendar of IOE. While submitting the marks a copy of final thesis report is mandatory. The thesis report must be in specified format and it should also contain the published paper by the student.

#### **Requirements for Thesis Supervisor**

Thesis supervisor should be expert of the related field.

#### **Requirements for External Examiner of Thesis**

External examiner should be expert of the related field. He/she should have academic qualification of PhD or should have at least three years of experience in the field after completion of his/her Masters Degree. He/she should not be from any department of same campus. The number of thesis that can be assigned for an external examiner in one session should not exceed three.

## **10. DURATION OF THE COURSE AND BARRIER SYSTEM**

The normal duration of the course for the fulfillment of the degree is two academic years. The maximum period within which a student is allowed to complete the course is four academic years.

Only students able to secure minimum 50% of the total credit of any semester will be allowed to admit for the next semester.

If a student has not submitted the examination form with necessary fee for any semester, he/she will not be allowed to admit for next semester. Similarly, if a student is not able to secure 50% of total credit he/she will not be allowed to admit for next semester. In such conditions a student has to apply to academic administration section of campus for re-registration prior to start of

semester with recommendation from corresponding program coordinator and necessary fee i.e. dues up to that day as well as course registration fee of Rs 2000 per credit (for repeating the course) in which he/she failed.

If a student is not qualified (NQ) for any course in a semester, he/she should pay the registration fee of Rs 2000 per credit for re-enrollment on the course in same semester of following year.

After paying all necessary fees in account section of campus a student will get an approval letter from academic administration of campus for re-enrollment. By using this approval letter he/she can re-enroll in corresponding program.

#### **Annex 5: Application for reregistration of a semester**

Normally a student is expected to complete the course including final thesis defense within two academic years from the date of registration. With some genuine reason he/she can extend up to additional one semester for completion of thesis with written recommendation of corresponding supervisor.

#### **Annex 6: Application of extension for additional one semester**

At any condition if all coursework including thesis defense is not completed within two and half academic years from the date of registration the corresponding student should register for each additional semester by paying the registration fee of Rs 20000 per semester. Program coordinator should allow such student to participate in thesis related activities only after the payment of necessary fees to account section of the campus.

#### **Annex 7: Application for continuation of thesis after fee payment**

## **11. DEGREE AWARD**

To qualify for the M.Sc. Degree, a student must satisfactorily complete 60 credits of all required course works and an individual thesis work.

The percentage is calculated from the following criterion:

$$Total\ Percentage = \frac{\sum(Credit \times Mark\ obtained)}{\sum Credits}$$

Depending upon the final weighted aggregate percentage scored by a student, a division is awarded as follows:

80 % and above:	Distinction
65 % or above and below 75 %:	First
50 % or above and below 65%:	Second

**Annex 1: Form for Open Elective Registration**

Date:.....

To the Program Coordinator

.....

Department of .....

..... Campus

Dear sir

I would like to request you to grant permission to take the elective course [Title of the course] offered under [name of the program] of [name of the department].

Sincerely,  
[Signature]  
[Name]

[Roll No]

The above mentioned student is interested to take elective course in your program. Please acknowledge me whether you can arrange him/her to take the elective course in your program or not.

.....

Program Coordinator  
[Home Program]

For above mentioned student we can/cannot arrange to take the specified elective course in our program.

.....

Program Coordinator  
[Offering Program]

**Annex 2: Form for extra credit course registration**

Date:.....

To the Program Coordinator

.....

Department of .....

..... Campus

Dear sir

I would like to request you to grant permission to take extra credits of the course [Title of the course] offered under [name of the program] of [name of the department] after the payment necessary fees.

Sincerely,  
[Signature]  
[Name]

[Roll No]

Recommended/ Not recommended to pay fee for the extra credit course registration.

[Sign]

[Name of Program Coordinator]

Program Coordinator

**Annex 3: Sample certificate for extra credit course**

**TRIBHUVAN UNIVERSITY  
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.....CAMPUS**

**Certificate for Successful Completion of an Extra Credit Course**

**This certificate has been awarded to [Name of the student] for successfully completing the course [Title of the course] having weightage of [] credits offered under [name of the program] of [name of the department]. He/She has fulfilled all the requirements of the course.**

[Sign]  
[Name of Course Instructor]  
**Course Instructor**

[Sign]  
[Name of Program Coordinator]  
**Program Coordinator**

[Sign]  
[Name of Campus Chief]  
**Campus Chief**

[Date]

**Annex 4: Submission of internal mark**

**TRIBHUVAN UNIVERSITY**  
**INSTITUTE OF ENGINEERING**  
..... Campus  
Department of ..... Engineering  
**M. Sc. In Mechanical Systems Design and Engineering**

**Internal Assessment Marks**

**Batch:** 073

**Credit Hours:** \_\_\_\_

**Code No:** \_\_\_\_\_

**Subject:** \_\_\_\_\_

**Year/Part:** \_\_\_\_

**Full Marks:** \_\_\_\_

**Pass Marks:** \_\_\_\_

S. No.	CRN	NAME	Marks Obtained		Remarks
			In Figure	In Words	
1					
2					
3					
18					
19					
20					

[Signature]

[Name of Course Coordinator]

Course Coordinator

Date:

[Signature]

[Name of Program Coordinator]

Program Coordinator

Date:

**Annex 5: Application for reregistration of a semester**

Date:.....

To the Campus Chief,  
..... Campus

Dear sir

I would like to request you to grant permission to continue my study in following semester of specified program and department. I am ready to pay all dues and necessary fees as per rule. I have also included the recommendation form the program coordinator of corresponding M. Sc. Program.

Name:  
Campus Roll No.:  
Year/Part [in which candidate wants to reregister]:  
M. Sc. Program:  
Department:

.....  
Signature of candidate

It is Recommended/ Not recommended for above student for reregistration in mentioned semester of this M. Sc. Program.

.....  
Signature of Program Coordinator

[Name of Program Coordinator]

[Name of M. Sc. Program]

**Annex 6: Application of extension for additional one semester**

Date:.....

To the Program Coordinator

.....

Department of .....

..... Campus

Dear sir

I would like to request you to grant permission to continue my thesis work on [Title of Thesis] supervised by [Name of Supervisor] for one additional semester.

Comments of the Supervisor

[Supervisor should provide valid reasons for extension.]

Recommended for extension

Not recommended for extension

[Signature]

[Name of the Supervisor]

Supervisor

Sincerely,

[Signature]

[Name]

[Roll No]

**Annex 7: Application for continuation of thesis**

Date: .....

To the Program Coordinator

.....

Department of .....

..... Campus

Dear sir

I would like to request you to grant permission to continue my thesis work on [Title of Thesis] supervised by [Name of Supervisor] for the coming semester 20.. [odd/even semester]. I am ready to pay all dues and necessary fees as per rule. I have also included the recommendation form the program coordinator of corresponding M. Sc. Program.

Name:

Campus Roll No.:

M. Sc. Program:

Department:

.....

Signature of candidate

It is Recommended/ Not recommended to above student for continuation of thesis work.

.....

Signature of Program Coordinator

[Name of Program Coordinator]

[Name of M. Sc. Program]