

Kathmandu University
Department of Computer Science and Engineering
Dhulikhel, Nepal



Graduate (ME and MTech Program) Catalog

November 2020

cse@ku.edu.np

OUTLINE OF THE PROGRAM

AIM OF THE PROGRAM:

- To provide engineering manpower of high academic excellence well suited to the job market
- To attain academic excellence in engineering education and research
- To continuously develop research facilities for both individual and institutional research.
- To help students become result-oriented and stimulate their creativity.
- To provide consulting services in related areas.

NAME OF THE DEGREE:

Master of Engineering (ME) in Computer Engineering

Master of Technology (MTech) in Information Technology (IT)

DEGREE AWARDING INSTITUTION:

Kathmandu University (KU)

PROGRAM DURATION:

4 Semesters (24 Months)

COURSE COMMENCES FROM:

December 2020

COURSE MANAGEMENT BY:

Department of Computer Science & Engineering (KU)

COURSE TYPES:

Regular and/or Crash

TOTAL CREDIT HOURS:

60 credits

Master of Engineering (ME) in Computer Engineering

Intake capacity: 10 (9 + 1 quota seat for Nepal Government employees)

Application Eligibility Criterion: Candidate with four-year Bachelor Degree in Computer Engineering with 50% marks on aggregate or CGPA of 2.0 out of 4.0 grading system from any recognized institution.

Duration: 2 years (4 semesters) full-time study program which will run in Dhulikhel campus, KU. The admission is open for Nepalese as well as foreign students.

Selection procedure: Admission Test/ Interview: A written admission test of 1.5 hours would be conducted focusing on core computer subjects. The test would comprise both objective and subjective questions and would weigh 70% of marks. Only those securing a minimum of 40 marks in the written test would be selected for the interview. Successful candidates passing both the written test and the interview would be selected for admission on the basis of merit list.

Master of Technology (MTech) in Information Technology (IT)

Intake capacity: 10(9+1 quota seat for Nepal Government employees)

Application Eligibility Criteria: Candidates with score of at least 50% in aggregate or CGPA 2.0 out of 4.0 grading system from any recognized institution, and

- Undergraduate in Engineering / Technology / Architecture / Computer Application (with honors), or
- Total of at least 16 years of education with science background, or
- M.Sc. in Physics, Chemistry, Mathematics, Statistics or any other related field.

Duration: 2 years (4 semesters) full-time study program which will run in Dhulikhel campus, KU. The admission is open for Nepalese as well as foreign students.

Selection procedure: Admission Test/ Interview: A written admission test of 1.5 hours would be conducted focusing on core computer subjects. The test would comprise both objective and subjective questions and would weigh 70% of marks. Only those securing a minimum of 40 marks in the written test would be selected for the interview. Successful candidates passing both the written test and the interview would be selected for admission on the basis of merit list.

Fees and Payment Information:

Total course fee for the two year (4 semesters) study period is **NRs 370,000/-** (ordinary Nepalese

student fee, which excludes NRs 10,000/- caution money and NRs 1000/- per year medical insurance) for ordinary Nepalese students. The fee for sponsored candidate is 1.5 times the ordinary fee. Fee for SAARC country international candidate is 1.5 times the regular fee and for other country is 2.0 times the regular fee. Extension of period of study may subject to requirement of payment of additional fees for the extended study period.

Fee to be paid at the time of admission for ordinary Nepalese student is **NRs. 136,000/-** that includes first installment of first semester fee. Rest of the fee shall be paid in two installments per semester.

Payment Mode: Check Appendix A

Financial Aid and Scholarship/Assistantship:

After admission, students can apply for UGC formula funding based scholarship as stated in the MoU between KU and UGC. Under the MoU, to attract bright and needy students, university may waive fees for up to 20% of the students in specific Master Programs. The government subsidy will cover the amount of fees waived. The Government may however choose to cap the maximum enrolment for which this arrangement will apply.

Graduate students are in general given opportunity of teaching assistantships or research assistantship based on their status, ability, experience, and need of the enrolled departments. The assistantships are generally provided to cover part of the fees of the student unless otherwise agreed.

Additional sponsorship, scholarship or assistantship may be available depending on availability of such provision for any particular program. Contact the responsible department for such provisions.

Provisional Application

Candidates who are awaiting the final results of their highest qualifying degree and expect that the result will be published within a month of admission can also apply on a provisional basis.

Right of Suspension/Delay of Any Program

In case, the number of seats filled is less than 50% of the intake capacity of any program by two

weeks of start of academic session for the master programs, the School may decide to suspend the program and return all the fees paid by the admitted students within a week of declaration of suspension of the program. The School may also inform in advance selected candidates about possibility of suspension of any program due to expectation of less than 50% of the intake capacity occupancy and withheld admission process of the selected candidates until further notice.

Tentative Schedule of Admission Process

Schedule	Date/Period/Deadline
Complete Application Submission	TBD
Admission Test/Interview/Result	TBD
Admission of Selected Candidate	TBD
Orientation program	TBD

Course Structure of GRADUATE PROGRAM (ME in Computer Engineering)

Semester I		Semester II		Semester III		Semester IV	
MAPG 503	3	COMP 503	3	Prescribed 1	3	Thesis	15
COMP 502	3	COMP 505	3	Prescribed 2	3		
COMP 504	3	COMP 559	3	**Problem Assessment Project	9		
Specialized Course 1	3	Specialized Course 2	3				
Interdisciplinary Course 1	3	Interdisciplinary Course 1	3				
Total Credit	15		15		15		15

Course Code	Course Title
MAPG 503	Mathematical Foundation for Computer Science
COMP 502	Design and Analysis of Algorithm
COMP 504	Software Engineering
COMP 503	Advanced Database Management System
COMP 505	Computer Network and Architecture
COMP 559	Distributed System

Course Structure of GRADUATE PROGRAM (MTECH in Information Technology)

Semester I		Semester II		Semester III		Semester IV	
MAPG 503	3	ITPG523	3	Prescribed 1	3	Thesis	15
ITPG 502	3	ITPG503	3	Prescribed 2	3		
COMP 504	3	COMP559	3	**Problem Assessment Project	9		
Specialized Course 1	3	Specialized Course 2	3				
Interdisciplinary Course 1	3	Interdisciplinary Course 1	3				
Total Credit	15		15		15		15

Course Code	Course Title
MAPG 503	Mathematical Foundation for Computer Science
ITPG 502	Data structure and Algorithm
COMP 504	Software Engineering
ITPG 523	Database Management System
ITPG 503	Computer Network
COMP559	Distributed System

The following **elective courses** are considered to be **specialized courses** and will be offered according to the department's decision.

Specialized Course1				Specialized Course 2	
Course Code	Course Title	Credit	Course Code	Course Title	Credit
COMP591	Software Dependability	3	COMP602	Software Process Improvement	3
COMP553	Software Process Management	3	COMP574	Knowledge Management	3
COMP564	Artificial Intelligence	3	COMP578	Artificial Neural Network	3
COMP560	Information security and cryptography	3	EPGC560	Information Theory and Coding	3
COMP 576	Natural Language Processing	3	COMP570	Machine Learning	3
COMP576	Cloud Computing	3	COMP573	e-Governance	3
ITPG547	Emerging Technology	3	COMP 558	Management Information System	

The department offers some courses which can be taken as interdisciplinary courses.

Interdisciplinary Course 1			Interdisciplinary Course 2		
Course Code	Course Title	Credit	Course Code	Course Title	Credit
COMP568	Tools and Techniques for Research	3	ITPG 528	Computer Simulation and modeling	3
ITPG533	Research Methodology	3	MEPG513	Project Management	3
COMP 558	Management Information System	3	COMP570	Machine Learning	3

**Department will give the course code for Problem Assessment Project later.

EVALUATION SCHEME

COURSES

The academic performance of the students will be judged through

- Continuous assessment, and
- Final assessment

The continuous assessment of the student will be made by the concerned faculty member in any or a combination of the following:

- Written tests
- Assignments and reports
- Seminars
- Term papers
- Any other deemed suitable by the concerned faculty member.

The final assessment will normally be conducted according to the examination schedule. The mode of evaluation in a given course is decided by the concerned faculty member who may assign varying weights to one or more of the evaluation modes. The faculty member shall normally announce such weights in the beginning of the course.

DISSERTATION

A dissertation in a topic connected with a student's special discipline is a necessary requirement for the successful completion of a Master of Engineering degree. The candidate must have achieved a result of significance in the dissertation work and must indicate an ability to express oneself in satisfactory style, both in written and oral.

Normally the dissertation shall be submitted at the end of the final semester. However, upon the recommendation of the supervisor, and subject to the approval of the School, only one term extension of six months can be granted to a student if he/she requires so. The student will receive a satisfactory or unsatisfactory grade and must have a satisfactory to qualify.

GRADING MODES

In each course, student will be evaluated on a 4 point scale as follows:

Grade letter	A	A-	B+	B	B-	C+	C	F
Grade value	4	3.7	3.3	3	2.7	2.3	2	0

The grades indicate the quality of students' performance as follows:

A=	Outstanding
A=	Excellent
B+=	Very good
B =	Good
B.=	Fair
C+=	Poor
C=	Very Poor
F=	Failure

Apart from the letter grades mentioned above, the following letter grade can also be awarded

W	=	Withdrawn
NC	=	Non Credit Course
INC	=	Incomplete
S	=	Satisfactory
U	=	Unsatisfactory
AU	=	Audit

- W - Indicates that a student has officially withdrawn from a course without grade or penalty. During the regular semester, a student seeking to withdraw from a course must do so before the final examination with the permission of the concerned faculty member. 'W' may not be processed after the final examination.
- NC - Indicates that student has officially attended a course till the end and completed it successfully but for which no credit will be given. A student can take a non-credit course

only in addition to the credit hours required for the fulfillment of Master of Engineering/Masters of Technology in Information Technology degree.

INC - Indicates that a student has not completed all the assignments required in the particular course. 'INC' becomes 'F' if the student does not complete the required work before the deadline agreed upon with the concerned faculty. A maximum of 6 months will be allowed for 'INC' removal.

S - Indicates completion of dissertation at satisfactory level. 'U' designation indicates dissertation was not completed at a satisfactory level.

AU – Indicates completion of credit course on top of the required credited courses.

GRADUATION REQUIREMENT

To graduate a student must achieve the following

1. Completion of the minimum number of required course credit hours with not less than C grade in each course.
2. A minimum grade point average (GPA) of 2.5 in every semester and a cumulative grade point average (CGPA) of at least 3.0.
3. Completion of oral defense of dissertation at satisfactory level.

FAILURES AND DISMISSAL

A student must maintain a semester grade point average (GPA) of 2.5 or above at the end of each semester failing which the student will be subject to dismissal from the program.

There will be no re-examination for any student who is absent during the final assessment. Absence will be considered incomplete.

Appendix A

Payment Mode

Students are informed to deposit the fee amounts through any of the following processes on the account of Kathmandu University

1. Bank Deposit

Deposit the fee amounts on any of the following bank accounts on the name of Kathmandu University.

Account No: 2001524044147071

Bank Name: Machhapuchchhre Bank Ltd

Account No: 0 1100 1095 5102

Bank Name: Nabil Bank Ltd

Account No: 00501030250009

Bank Name: Nepal Investment Bank Ltd.

Account No: 01500100050584000002

Bank Name: Nepal Bank Ltd.

Account No: 01815116234

Bank Name: Siddhartha Bank Ltd.

2. Esewa

Transfer fee amounts through esewa.

Login to eSewa.

Click on School Fee icon.

Click on College Fee Payment

Click on Kathmandu University School of icon

Fill the details and click on proceed.

3. Connectips

Transfer fee amounts on any of the above mentioned bank account on the name of Kathmandu University through Connectips.

Login to ConnectIPS

Enter beneficiary information and transaction details for transfer.

Select your bank account from which to pay and confirm with the credential (PIN/OTP).

SUCCESS!!

You are done.

Email scan copy of Payment Receipt/ deposit voucher to Central Finance (kufinance@ku.edu.np) and School Finance for record keeping.

Appendix B

1. Syllabus of the Graduate Admissions Entrance test

The meeting finalized the syllabus of the entrance test as follows:

a. Programming

Basic structured programming concepts (Data Types, Operators), Object Oriented Programming Concepts (Objects, Class, Inheritance, Polymorphism)

b. Data Structure and Algorithms

Stack, Queue, Lists, Hash table, Sorting and Searching algorithms

c. Database Management Systems

Relational Database Concepts, ER Diagram, Normalization, Transaction

d. Software Engineering

Software Process Models, Planning & Scheduling, Testing

e. Computer Networks

Basics of Computer Networks, TCP/IP, Physical Layer, Network Layer, Data Link Layer, Concepts of IP Addressing

Note: All five subjects carry equal weightage.

Updated: Monday, November 2, 2020