



# KATHMANDU UNIVERSITY

SCHOOL OF ENGINEERING

*Department of Computer Science and Engineering*

## Graduate Programs

### KU

The Kathmandu University is one of the foremost teaching and research institutions in Nepal. It was founded in 1991 to provide higher quality education.

The Kathmandu University is an autonomous, non-profit, non-government public institution of higher learning.

The mission of the university is to:

- Promote all round development of students' abilities and personalities.
- Develop an awareness of the role of science and its application in understanding problems of society.
- Extend and disseminate knowledge and to encourage its application, and
- Develop a community of scholars.

### **School of Engineering**

The school of engineering was established in September 19, 1994, and has been running undergraduate and graduate level programs in many areas.

The aims of the School of Engineering are:

- To produce engineering manpower of high academic standard, well suited to the job market.
- To attend academic excellence in engineering education 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.

### Department of Computer Science & Engineering

Department of Computer Science and Engineering runs under the School of Engineering of Kathmandu University. The Department offers bachelors and masters degree programs in Computer Science and Engineering fields.

### **Graduate Programs**

The department offers three graduate programs. They are:

- ME in Computer Engineering
- MTech in Information Technology
- M.S. by Research
- Ph.D. Program

### **ME in Computer Engineering**

The Master of Engineering in Computer Engineering prepares students for leadership roles in all facets of computer engineering education and research activities. This program aims to provide engineering manpower of high academic excellence well suited to the job market.



## Program Structure of ME

Semester I	15 Credits
Mathematical Foundation for Computer Science Advanced Software Engineering Computer Networks and Architecture Elective 1 Elective 2	
Semester II	15 Credits
Advanced Programming Techniques Design and Analysis of Algorithms Elective 3 Elective 4 Project 1	
Semester III	15 Credits
Advanced Database Management System Elective 5 Elective 6 Project 2	
Semester IV	15 Credits
Dissertation	

The elective subjects include Tools and Techniques for Research Projects, Information Theory and Coding, Human Computer Interaction. Artificial Intelligence, Operating Systems, Geographic Information System, Computer Graphics, Software Architecture, Microprocessor-based system Design, High Speed Networks, Software Reuse, Theory of Computation, Compiler Design, Distributed Systems, Cryptography, Knowledge Engineering and Expert Systems, e-Commerce, Social Impacts of Engineering System, Network Programming, Object Oriented Analysis and Design, Information Privacy and Accuracy, Management of Information System, Engineering Economics, Random Processes.

### Admission Requirements

Completion of a four year undergraduate program in the field of Computer Engineering / Electronics and Communication Engineering with the score of at least 50% in aggregate or CGPA 2.5.

### MS by Research

This course is specially designed for those who have special aptitude for research on a part time (minimum 3 years) and full time (2 years) basis. The candidates may have to undergo about 3 to 5 courses depending up on the requirements. The major responsibility is to carry out a suitable research project in related area and submit a dissertation at the end.

### Admission Requirements

Completion of a four year undergraduate program in the relevant field with the score of at least 50% in aggregate or CGPA 2.5.

## MTech in Information Technology

This program aims at developing IT professionals with proper tools and skills who can take care of the current and the future needs of IT industries, research development and production activities. The primary notion of this program is to provide IT specialization to the candidates from varied science background. The duration of this program is 2 years.

### Program Structure of MTech IT

Semester I	15 Credits
Mathematical Foundation for Computer Science Advanced Software Engineering Data Structures and Algorithms Elective 1 Elective 2	
Semester II	15 Credits
Database Management System Elective 3 Elective 4 Elective 5 Project 1	
Semester III	15 Credits
Elective 6 Elective 7 Elective 8 Project 2	
Semester IV	15 Credits
Dissertation	

The elective section includes Adaptive Web Technology, Computer Networks, Computer Architecture, Computer Graphics, management of Information System, Information Security, OOAD, Technical Entrepreneurship, Ingredients for Innovation, Artificial Intelligence, Multimedia Technology, e-Government, Software Project Management, Research Methodology, Software Quality Assurance, Software Architecture, e-Commerce, Human Computer Interaction.

### Admission Requirements

Candidates with score of at least 50% in aggregate or CGPA 2.5, 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.

## Collaboration Effort

Engineering program at School of Engineering has close links with Norwegian Institute of Science & Technology, Birla Institute of Technology & Science, Johannes Kepler University, Austria, Madan Puraskar Pustakalaya, Nepal. Experts from some of these institutions are working as visiting faculty since 1994. Deserving graduate students are facilitated to go abroad for thesis.

The MoU has been established between ITPF (Information Technology Professional Forum) and KU to promote Business Incubation activities, establish company with involvement of institutions and professionals interested in IT for initiating activities in IT Park, and run high end career camp for graduates, and for innovation promotional initiatives. ITPF has active participation in running the graduate programs by sharing the resources.

The MoU has also been established between KU and Simula Research Lab, Norway. Simula Research Laboratory's main objective is to generate new understanding and create vital knowledge about fundamental scientific challenges that are of genuine value for society. Important research with long-term impact in the fields of networks and distributed systems, scientific computing and software engineering constitutes the basis of Simula.

One of the major continual improvement efforts of DoCSE is the restructuring of the final year undergraduate course work. The followings are the companies having MoU with DoCSE for industrial internship.

- D2HawkEye services
- DASS Pvt. Ltd.
- Hi-Tech Valley Pvt. Ltd.
- Nexus Nepal
- IT-Himalaya
- F1 Soft International
- Web Search Professional
- Madan Puraskar Pustakalaya
- Lotus IT
- Bikalpa Software

## Research Activities

Research activities determine the gravity of academic entity. At Department of Computer Science and Engineering, faculty members and students devote significant amount of time in research activities, thus keeping themselves abreast with the state of the art technology. Current research areas identified by the department are as follows.

- Natural Language Processing
- Software Engineering
- Human Computer Interaction
- E-governance

## Academic Staff

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### Head of Department

1. Dr. Sanat Kumar Bista

### Assistant Professors

2. Mr. Manish Pokharel (on study leave)
3. Mr. Purosottam Kharel (UG Coordinator)
4. Mr. Niraj Shrestha
5. Mr. Bal Krishna Bal
6. Mr. Manoj Shakya

### Lecturers

7. Mr. Pankaj Raj Dawadi
8. Mr. Jenu Shrestha

### Visiting Faculties

9. Prof. Patrick Andrew Voss Hall
10. Prof. Karen Ann Lemone
11. Mr. Suresh Regmi (ITPF)
12. Dr. Jyoti Tandukar (ITPF)

### Teaching Assistants

13. Mrs. Jannatul F. Pradhan
14. Mr. Sameer Kharel
15. Mr. Vijit Atreya
16. Mr. Sangeet Dahal

## Fees

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Tuition fee for 2009/10 for full time student in each discipline is NRs. **215000**.

Fees for non-Nepali Students:

*SAARC country*: one and half times the normal fee.

*Any other country*: double the normal fee.

### Assistantships

Financial aid is available in the form of graduate teaching assistantships. The duties of the teaching assistant generally include lecturing or assisting in a programming laboratory for introductory undergraduate programming language courses.

**Simula Research Lab**, Norway, is offering a scholarship to MS by Research student. This scholarship includes stipend as well.

<http://simula.no/>

[ **simula** . research laboratory ]

- *by thinking constantly about it.*



**Contact us for further information:**

**KATHMANDU UNIVESITY**

School of Engineering

*Department of* **Computer Science & Engineering**

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