# Computer
## Engineering

# Computer Engineering

Computer engineers work on components, devices, programs, algorithms and systems that are used in computers, and on techniques of computation, analysis and implementation that are applicable to single computers or to systems of computers.

In the past, work in this area used to be compartmentalized between hardware and software, but the boundaries between these two categories have become less distinct. Many computer engineers (and electronics engineers) are well versed in both hardware and software, and provide "hybrid" solutions on a regular basis.

Due to the wide use of computers across industries and applications, we find computer engineers in many diverse areas. For example, computer engineers design application-specific integrated circuits (ASICs) for use in cellular phones; they devise and program field-programmable gate arrays (FPGAs) for control systems in manufacturing plants and power stations; they develop microprocessors for personal computers; they introduce embedded systems into diverse applications such as digital watches, portable music players, traffic control systems, and systems that control nuclear power plants. Many computer engineers work on the design of very large systems that integrate many components and many computers. One example is computational grids, which harvest the resources of hundreds, even thousands of computers for performing intensive computations that are beyond the capability of a single computer. Another example is data grids which allow sharing and management of large amounts of distributed data (such as health information of patients in a country by hospitals, or meteorological and other environmental information collected by thousands of sensors in the ocean). Many computer engineers are involved with communication networks that connect multiple computers, sensors, actuators, and special-purpose devices.
Computer engineering thus provides society with many critical utilities. Computers and computer engineers have impact on public welfare and safety, as well as on health and healthcare, the environment, quality of life, transportation, the food supply, computing, and leisure.

## Career

A computer engineer, also called a software engineer, is responsible for developing, testing and evaluating the software that make our computers work. They may help in the development of new computer games, business applications or even in the design of entirely new operating systems. A computer engineer may also be responsible for constructing and managing an organization's computer system and supplying technical support. A computer engineer typically works in an office or laboratory environment as part of a team and enjoys a traditional work schedule.

In Nepal the software market is blooming in an exponential way. This brings a lot of job opportunities to the computer engineers. Various software giants like Microsoft, Google have also recruited Nepalese developers in their company.

## Choose Computer Engineering if:

Not everybody who dives into computer engineering manages to become a successful professional. So, before deciding to study computer engineering, a student must think deeply about his/her interests and aptitude.

Do you have a passion for computers and technology as a whole?
Would you be willing to work 8 hours a day in front of a computer screen?
Have you learned any type of programming language? If so, do you like programming and see yourself as a computer programmer in the future?

**If your answer to these questions was a resounding "yes", then come aboard! The amazing world of software awaits you.**

# **Why NCE** for Computer Engineering?

Bringing a change is what our graduates are doing in the society. Our graduates are involved in various multi-national software companies, have received scholarships in various reputed universities around the globe and the best thing is, many of them are entrepreneurs in Nepal with their own software company and are serving country for making a prosperous Nepal. Students here not only learn theoretical knowledge but also are trained to work in a team. The teamwork by NCEans are always praised in various software fields. From basic web designing to advanced level cloud processing, NCEans are no lesser than any international professional. This is what we deliver to our students. Excellence is what we target and we do everything to get it. We have special shell known as department of research and development which is typically set to incubate students the research methodology so that they can make a great impact in industries.

So for your bright future, we never compromise. We'll deliver everything we can to make you a good professional. So, for your bright future, enroll into computer engineering at NCE.

## Resources

Department of electronics and computer engineering has a complete set of infrastructures needed for a person to be a good electronics and computer engineer. We have fully equipped laboratories of computer with high speed internet facilities.

A highly experienced full time and part time faculty is dedicated to provide high quality education in a very convincible way. Professors and lecturers here not only teach the course but also make you understand the practical applications so that your knowledge horizon enlarges. The textbooks and other manuals necessary for the curriculum is provided by the library. Besides that, the department also provides necessary facilities and aids for participating in several kind of hardware and software competitions.

## Participation and Achievements

The department is always focused on providing handy practical experiences to the students and for that frequent field visits to various software companies, internet service providers is provided. Beside this Students are encouraged to participate in the semester projects and are obligated to report their work at the end of their project, which enhances presentation skills of student and makes them socially involved in extra-curricular activities.
Yearly, various groups of students are sent to various software competitions. The achievements made in these competitions have also shown the quality of our students to the industries. Direct participation in such works help students develop their self-confidence which is required to compete with other students of similar fields.

## ACHIEVEMENTS

2nd Position Child App Nepal - 2014

2nd Position 11th National Technical Festival LOCUS – Software Competition - 2014

3rd Position 10th National Technical Festival LOCUS – Software Competition - 2013

1st Position 9th National Technical Festival LOCUS – Software Competition - 2012

3rd Position Locus Code Camp – 2011

Engineering is such a crucial field for the development of society and nation. And for those who wants to develop their future career in this field, they should be very careful while choosing the right academic institution or engineering studies. National College of Engineering is one of such institution which provides you with best faculty members, flexible and friendly learning environment. Being a student of NCE I felt that the teachers and seniors are helpful to a greater extent. As you all know this is one of the most important turning point in your life so make your decision worthy.

Bibek Shrestha
071 BCT

# Computer Engineering Curriculum

### 1st Semester
- Engineering Mathematics I
- Computer Programming
- Engineering Drawing I
- Engineering Physics
- Applied Mechanics
- Basic Electrical Engineering

### 2nd Semester
- Engineering Mathematics II
- Engineering Drawing II
- Basic Electronics Engineering
- Engineering Chemistry
- Fundamental of Thermodynamics & Heat Transfer
- Workshop Technology

### 3rd Semester
- Engineering Mathematics III
- Object Oriented Programming
- Electric Circuit Theory
- Theory of Computation
- Electronics Devices and Circuits
- Digital Logic
- Electromagnetics

### 4th Semester
- Electrical Machines
- Numerical Methods
- Applied Mathematics
- Instrumentation I
- Data Structure and Algorithm
- Microprocessor
- Discrete Structure

### 5th Semester
- Communication English
- Probability and Statistics
- Control System
- Instrumentation II
- Computer Organization and Architecture
- Advanced Electronics
- Computer Graphics

### 6th Semester
- Engineering Economics
- Artificial Intelligence
- Object Oriented Analysis and Design
- Embedded Systems
- Operating System
- Database Management System
- Minor Project

### 7th Semester
- Project Management
- Organization and Management
- Energy Environment and Society
- Computer Network
- Distributed System
- Digital Signal Analysis and Processing
- Elective I
- Project (Part A)

### 8th Semester
- Engineering Professional Practice
- Internet and Intranet
- Information System
- Simulation and Modeling
- Elective II
- Elective III
- Project (Part B)

### Elective Courses
- Satellite Communication
- Data-Mining
- RADAR Technology
- Biomedical Engineering
- Broadcast Engineering
- Avionics
- Optical Fibre Technology
- IPV6
- Remote Sensing
- Telecommunication
- Agile Software Development
- Enterprise Application Design
- Advanced JAVA
- Image Processing