The new curriculum

The Computer Engineering (CPE) Department of King Mongkut’s University of Technology Thonburi (KMUTT) has revised its curriculum from 144 credits to only 128 credits to give way to the implementation of the Problem-Based Learning (PBL). PBL will allow students to have more time to study really deeper as the Bachelor’s Degree program in Computer Engineering is a program aimed at producing qualified engineers for the computer technology market. The class and laboratory sessions allow the students to acquire skills from a broad range of areas such as Software Engineering, Hardware Design, Information Management, and Network Communications.
The International Bachelor’s Degree in Computer Engineering
Study Plan
First Year
First Semester
Calculus and Analytic Geometry I
General Physics I
Fundamental English I or II
Computer Engineering Exploration
Introduction to Computer Programming

Second Semester
Calculus and Analytic Geometry II
Introduction to Chemistry
Fundamental English II or III
Discrete Mathematics for Computer Engineers
Algorithms and Data Structures

Second Year
First Semester
Linear Algebra and Vector Calculus
Fundamental English III or Content-based Language Learning I
Engineering Economics
Digital System Design
Digital System Laboratory
Programming Languages

Second Semester
Statistics for Engineers
Physical Education
Man and Ethics for Quality of Life
Signals and Systems
Circuits and Electronics for Computer Engineers
Circuit and Electronic Laboratory
Third Year
First Semester
- Introduction to Social Sciences
- Computer Architectures and Systems
- Computer System and Interfacing Laboratory
- Database and ERP Systems
- Communication Systems
- Computer Engineering Elective I

Second Semester
- Software Engineering
- Operating Systems
- Computer Networks
- Computer Network Laboratory
- Computer Engineering Elective
- Free Elective I

Summer Session
- Industrial Training

Fourth Year
First Semester
- Environment and Development
- Industrial Organization and Management
- Computer Engineering Project I
- Computer Engineering Elective III
- Computer Engineering Elective IV
- Free Elective II

Second Semester
- Computer Engineering Project II
- English for Employment
- Humanities/Social Science Elective
- Computer Engineering Elective V
- Computer Engineering Elective VI
Problem-Based Learning

As the Computer Engineering Department aims to create an engineer who is able to think and be more creative more than just following the textbook, Problem-Based Learning (PBL) has been adopted. That’s why there was a need for the department to reduce the number of credit hours in the new curriculum.
PBL is a controversial term. It stands for either “problem-based learning” or “project-based learning”. Either ways, PBL is a natural way of learning. It can be learning by questioning or learning by doing. Young children learn by asking “what?” and “why?”. Similarly PBL encourages learner to learn by asking “what?”, “why?”, and “why not?” The Centre for Development of Teaching and Learning defines that, “In PBL, students learn using carefully designed scenarios from which the issues are identified and the objectives developed. Students learn whatever relevant to their learning objectives. They learn what they need and when they have to know.” The key issues are “objectives”, “designed scenarios”, “what they need” and “when they have to know”. In PBL, the objectives of each class must be obviously set as well as the well-prepared class environment and resources. The objectives later will be broken down into sub-tasks according to “what students need” and “when they need to know”. The instructor plays a coach role to guide students how they would achieve the goals. No one can tell someone else to learn but one must learn what they need and when they actually need to know. The success is not what students achieve but how they achieve it. PBL is exactly what a competent computer engineer needs to acquire necessary and practical skills.
2+2 Program

You can choose between Missouri University, USA and University of Regina, Canada.

The Computer Engineering Program at KMUTT is currently affiliated with the department of Computer Engineering, University of Missouri – Columbia (MU), USA and University of Regina (UR), Canada. These twinning programs offer third year students the option of completing their degree at MU or UR, in which the students will be entitled to degrees from both KMUTT and the affiliated University.

Qualifications of Applicants

Missouri applicants must be a sophomore in the international program of the Department with a minimum GPA of 2.70. Must score a minimum of 500 on the paper-based TOEFL, 61 on the IBT.

Regina applicants must be sophomores in the international program of the Department with a minimum GPA of 2.50 and a TOEFL score of 550 on the paper-based, and 80 on the IBT.
Be an International Student Exchange Student in Germany!

The Computer Engineering Department in the Faculty of Engineering at King Mongkut’s University of Technology Thonburi and the University of Bremen in Germany offer an Exchange Student Program in computer engineering. The agreements between the two institutions allow students at the undergraduate level (only the international program) and the Master’s level to spend one semester at the University of Bremen. Course credits earned at Bremen can then be transferred back to the Department at KMUTT. The Department offers 3 full scholarships each year to qualified students. For more information on the University of Bremen, please visit www.uni-bremen.de

Required Documents
A letter of intention to join the exchanged program. A letter indicating courses of interest offered at the University of Bremen. A curriculum vitae. A copy of the entire passport.

Steps in the Application
Students submit applications to the Department 10 weeks before a new semester begins at Bremen. The Department will process and coordinate the application with the University of Bremen. Applicants will receive official approval letters and related documents from the University of Bremen. Students apply for a student visa at the German Embassy and prepare their trips.
Admission Requirements

Applicants from secondary school must have an M6 secondary school certificate, a Grade-12 certificate, or a high-school certificate showing good academic standing. Candidates must be fluent in English. An English proficiency test is given before the academic year opens and those who get a score below 500 are required to take English as a Second Language (ESL) courses to strengthen their language skills.

The department allows two criteria for admission:

Students may apply directly at the Admissions Office.
Students may also apply through the selection process of the Ministry of University Affairs (MUA) via the general Entrance Examination, and must follow the procedures and examination requirements specified by MUA for each academic year.
Tuition Fees

About 112,000 baht/year with 2 semesters/year
High-Caliber Faculty

Besides the strong infrastructure offered by our modern facilities and online research volumes at our university library, we owe our program’s high quality to its people. Our department has 13 faculty members with international Ph.D. degrees, 3 are American citizens.
Dr. Booncharoen Sirinaovakul
Associate Professor
D.Eng. (KMITL)
M.S. (The Wichita State U., USA)
B.Eng. (KMITL)

Dr. Bundit Thipakorn
Assistant Professor
Ph.D. (Missouri-Columbia, USA)
Research Interests
Signal Processing and Image Processing,
Mechanics and Transport in the Microcirculation,
Biomedical Signal and Image Analysis
Fluorescence Microscopy
Optical Sensors and Optical M29Sensors

Dr. Naruenon Wattanapongsakorn
Associate Professor
Ph.D. in Electrical Engineering, University of Pittsburgh, PA, USA
Research Interests
Software Fault-tolerant Techniques
Optimization Algorithms
Digital Embedded System Modeling
Statistical Analysis of System Reliability

Dr. Natasha Dejdumrong
Lecturer
Research Interests
Computer Aided Geometric Design
Object-Oriented Programming
JAVA Technology
Animation

Dr. James Finn
Foreign Expert
Ph.D., Computer Science, Princeton University, 1982

Dr. Naruemon Wattanapongsakorn
Associate Professor
Ph.D. in Electrical Engineering, University of Pittsburgh, PA, USA
Research Interests
Software Fault-tolerant Techniques
Optimization Algorithms
Digital Embedded System Modeling
Statistical Analysis of System Reliability

Dr. Nuttanart Muansuwan
Assistant Professor
Ph.D. (Linguistics, The State U. of NY)
Research Interests
Natural Language Processing

Dr. Peerapon Siripongwutikorn
Assistant Professor
Ph.D. in Telecommunications, University of Pittsburgh, 2003
Research Interests
Quality of Service
Ad hoc networks
Performance Analysis of Communication network

Dr. Sally E. Goldin
Foreign Expert
PhD, Carnegie-Mellon University, 1979
Research Interests
Software Engineering Processes and Tools
Software Visualization
Project Management
User Interface Design and Usability Engineering
Biometrics: Facial Recognition
Geoinformatics
Image Processing
GIS
Spatial Simulation
Knowledge-base Systems, Knowledge Engineering and Expert Systems
Computer Applications for International Development
Dr. Songrit Maneewongvatana
Assistant Professor
Ph.D. (U. of Maryland, USA)
Research Interests
Data Mining
Information Retrieval
Pattern Recognition
Database

Dr. Yongyuth Permpoontanalarp
Assistant Professor
Ph.D. in Computer Science, Department of Computing, Imperial College, University of London, U.K.
Research Interests
Applied Cryptography
Cryptographic Protocols
Formal Methods for Cryptographic Protocols and Network Security

Dr. Suthep Madarasmi
Associate Professor
Ph.D. (U. of Minnesota, USA)
M.Sc. (Michigan State U., USA)
B.Sc. (Michigan State U., USA)

Dr. Thumrongrat Amornraksa
Associate Professor
Ph.D. Degree in Electronic and Electrical Engineering Centre for Communication Systems Research (CCSR) University of Surrey, UK
Research Interests
Data Security
Data Communications
Digital Image Processing

Dr. Tiranee Achalakul
Assistant Professor
Ph.D. in Computer Engineering, Syracuse University, New York, 2000
Research Interests
High Performance Parallel Distributed Processing and Applications
Grid Computing
Remote Sensing and GIS
Image/Information Fusion and Analysis
Software Engineering
Web/Internet and Java Technologies

Dr. Yongyuth Permpoontanalarp
Assistant Professor
Ph.D. in Computer Science, Department of Computing, Imperial College, University of London, U.K.
Research Interests
Applied Cryptography
Cryptographic Protocols
Formal Methods for Cryptographic Protocols and Network Security

Mr. Kurt T. Rudahl
Foreign expert
M.S., Computer Science, University of Wisconsin, Madison, 1971
Research Interests
Geoinformatics
Biomedical
Embedded/Real-time Systems
Intelligent Databases
Autonomous Agents

Mr. Sanan Srakaew
Lecturer
M.S. (George Washington U., USA)
Research Interests
Computer Graphics

Mr. Surapont Toomnark
Assistant Professor
B.Eng. (KMITT)
Research Interests
Digital Systems
Microcontroller Applications
Embedded Systems

Cluster Computing for Geoinformatics
Tools for Software Development and Project Management
Use of Computer Technologies for Rural Population and Lesser-developed Countries
Software Internationalization
Facilities

Internet cafe and Study area

The department’s central study area and Internet cafe are open to all students who may use the facilities for reading, for relaxing between classes, and for other activities. Moreover, computers are available in the hallway right outside the Department, providing free services to students and visitors. Log-in names and passwords are not required to use the service. This computer facility is open Monday through Friday between 8:30 – 21:00, and is closed on the weekends and public holidays.

Instructional Computer Lab1

Instructional Computer Lab1 provides computer services for teaching and learning to students and faculty members. Students may contact the system administrator for a log-in name and a password. In addition, typing services are also available to students in the department. The lab facility is open Monday through Friday between 8:30 – 21:00, and is closed on the weekends and public holidays.
Facilities

Instructional Computer Lab2

Instructional Computer Lab2 is used primarily for teaching courses offered by the department during an academic year.

Seminar room

Seminar Room is used by faculty members for course lectures and seminars in the department.
Bus Routes Passing through KM9 (Entrance to Prachauthid Road)
20 82 138 140
141 142 506 510
that can be taken to change to the following buses into Prachautid Road

Bus Routes Passing KMUTT
21 Siam - Hualumpong - Wongwianyai - Daokanong - KMUTT - Tungkhru
75 Hualumpong - Taksin BTS - Daokanong - KMUTT - Puthabucha
83 Tadindaeng - Wongwianyai - Bukkalo - Ratburana - KMUTT - Tungkhru

Inside KMUTT
CPE is on the 8th floor of Classroom Building 4 located at the back of the campus

Where's KMUTT?

KMUTT
CB4 Building, 8th Floor
91 Prachauthid Road, Bangmod, Tungkhru, Bangkok 10140
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