ENGINEERS LADKRABANG

INTERNATIONAL PROGRAMS

FACULTY OF ENGINEERING AT KMITL

http://eneng.kmitl.ac.th/

1, Soi Chalong Krung 1, Chalong Krung Road, Ladkrabang Sub-district, Ladkrabang district, Bangkok 10520

INTERNATIONAL PROGRAMS
FACULTY OF ENGINEERING KMITL

GENERAL INFORMATION

Tuition fee/semester	Computer Innovation Engineering 150,000 THB (4,240 $USD)/semester Others: 90,000 THB (2,570 $USD)/semester
Living Expenses/ month	- Books: Approximately 5,000 THB /semester - Food and other expenses: <10,000 THB /month (apart from room rent, a meal is on average is 50-100 THB) - Dormitory: ≈ 6,000 THB /month (including electricity and water rates) Remark: Exchange Rate: USD 1 = THB 35.4 (as of February 2017)
Facilities	- Medical Services - Bank - Dormitory - Library - Sport Facilities and swimming pool - Internet Services - Service for International Students and Scholars
Entrance Requirement	The applicant must satisfy at least one of the following: 1) Graduated or studying in the final year of high school or equivalent. 2) Graduated or studying in an accredited college or higher-education institutions. 3) Obtained or expect to obtain a qualification equivalent to Matthayom 6 as approved by the Ministry of Education before the start Academic Year 2017. The applicant must submit at least one of the following standardized tests. 1) National higher education or board exam results (GAT/PAT. IGCSE, GCE A-level, Gaokao, or equivalent exams) 2) SAT 3) ACT 4) IB The application should submit at least one of the following English proficiency test results. 1) GAT Part 2 (English) 2) TOEFL 3) IELTS 4) IB
Entrance Examination	Interview Examination
Website Facebook Admission website	http://eneng.kmitl.ac.th https://www.facebook.com/kmitl001/ http://eneng.kmitl.ac.th/inter-admission/

Contact Person Contact Email	For additional information, please contact Faculty of Engineering, KMITL Phone: +66(0)2329-8309 or +66(0)2329-8000 ext. 3848, 3485, 3484, 3445 Email: eng-inter@kmitl.ac.th • Biomedical Engineering Phone: +66(0)83-449-7543 Contact person: Assoc.Prof.Dr. Chuchart Pintavirooj • Chemical Engineering Phone: +66(0)81-404-1894 Contact person: Dr. Narisara Thongboonchoo • Civil Engineering Phone: +66(0)81-654-3000 Contact person: Assoc.Prof.Dr. Nunthawat Charusrojthanadeeh • Industrial and Management Systems Engineering Phone: +66(0)95-765-4796 Contact person: Dr. Jarotwan Koiwanit • Computer Innovation Engineering Phone: +66(0)90-292-0977 Contact person: CIE Admission Team Email: cie@kmitl.ac.th Facebook: https://www.facebook.com/CIEatKMITL Official website: https://cie.kmitl.ac.th/
Scholarships	1) There are two categories of scholarships: Full tuition fee waiver and half tuition fee waiver. 2) Students who are eligible for scholarship application, are - new students with GPA higher than 3.50 for full scholarship and 3.25 for half scholarship. 3) Each scholarship is for one academic year only. Students must reapply for scholarships at the beginning of each academic year. 4) The number of scholarships is based on the total number of students in each program (approximately 10%).

HIGHLIGHTS OF PROGRAMS

Industrial and Management System Engineering	The program prepares students for industry 4.0 Environment, (Smart operations, Smart Factories, Smart Products) and covers recent topics in both technical areas (such as Operations Research, Data Science and Analytics, Simulation, System Modelling, Process Analysis and Redesign, Data Warehouse, Cloud Computing, etc.), as well as business – related areas (Supply chain management, Health Care and Service Management, Enterprise Resource Planning, Customer/User Experience, Entrepreneurship, and Innovative design, etc.)
Chemical Engineering	Students who graduate from the program can work in the fields of exploration and production of petroleum, energy and fuel industries, petroleum refinery, chemical and petrochemical industry, food and drink industry, paper and pulp industry, the productions of rubber, synthesized rubbers, soaps, detergents, toothpastes, cosmetics, polymers, plastics, and glass, automotive factory, electronics industry.

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Civil Engineering	The program provides unique or thematic knowledge with the focus on innovative advancements in technology, applications, tools, and software. By combining theoretical foundations with hands-on experience and project-based learning, the students will learn the skills required for nowadays. The program also offers opportunities for students to participate in, the Civil Engineering Cooperative Program, the Oversea Training, and a number of international academic competitions.
Computer Innovative Engineering	The Computer Innovation Engineering Program (CIE) is the platform for academic advancement of the 21st century. By combining theoretical foundations with hands-on experience and project-based learning, the students will learn the computing skills required for today's workforce. The program offers state-of-the-art knowledge in computing technologies; including Internet of Things, Cloud Computing, Cyber-Physical System, Cyber Security, Data Analytics and Virtual/Augmented Reality. Most courses are 4 credits. These courses usually contain 3 hours of lecture or discussion per week. The courses are also accompanied with 1 additional hour of recitation or 3 hours of laboratory work per week. Our engineering curriculum also deeply integrates with the study of innovation process to help students transform their explored ideas into startups that will drive our future.
Biomedical Engineering	The program maintains the distinguished identity of the previous KMITL biomedical engineering, which emphasizes on the practical based and hand-on experiences. Students those graduate can perform biomedical engineering practices immediately. The program has research collaboration with Glasgow University, Tokai University, and Joseph Fourier.

STUDY PLAN: CHEMICAL ENGINEERING

	1st Semester	2nd Semester
1ST YEAR	- INTRODUCTION TO CALCULUS - PHYSICS I - CHEMISTRY - INTRODUCTION TO ENGINEERING PROGRAMMING - ENGINEERING MATERIALS - INTERPRETATION AND ARGUMENTS - ACADEMIC LISTENING AND SPEAKING	- PHYSICS II - ADVANCED CALCULUS - ENGINEERING DRAWING - ENGINEERING MECHANICS - ORGANIC CHEMISTRY - ORGANIC CHEMISTRY LABORATORY - INNOVATIVE COMMUNICATION - ACADEMIC READING AND WRITING
2nd YEAR	- DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA - PRINCIPLE CALCULATIONS IN CHEMICAL ENGINEERING - THERMODYNAMICS - INTRODUCTION TO CHEMICAL ENGINEERING AND MULTIDISCIPLINARY ENGINEERING - FLUID DYNAMICS - BIOCHEMISTRY - CRITICAL THINKING	- DESIGN AND ANALYSIS OF EXPERIMENTS - CHEMICAL ENGINEERING THERMODYNAMICS - HEAT AND MASS TRANSFER - ANALYTICAL INSTRUMENTATION AND ANALYSIS - ANALYTICAL CHEMISTRY LABORATORY - DESIGN METHODS FOR INNOVATIONS - CREATIVE THINKING

3rd YEAR

1st Semester

- CHEMICAL PROCESS INSTRUMENTATION
- SEPARATION PROCESSES
- CHEMICAL ENGINEERING LABORATORY 1
- CHEMICAL ENGINEERING KINETICS AND REACTOR DESIGN
- WASTE TREATMENT AND POLLUTION CONTROL
- PROCESS OPERATIONS AND BUSINESS INFORMATION

2nd Semester

- CHEMICAL ENGINEERING LABORATORY 2
- PROCESS EQUIPTMENT DESIGN
- PROCESS DYNAMICS AND CONTROL
- SAFETY IN CHEMICAL ENGINEERING
- ENGINEERING ECONOMICS AND DECISION TOOLS FOR BUSINESS
- PROCESS SIMULATORS IN CHEMICAL ENGINEERING
- PLANT VISIT
- PRE-PROJECT

SUMMER

INDUSTRIAL INTERNSHIP

4th YEAR

- ALTERNATIVE STUDY

- CHEMICAL ENGINEERING PLANT DESIGN
- CHEMICAL ENGINEERING ELECTIVE COURSE
- FREE ELECTIVE COURSE
- FREE ELECTIVE COURSE
- LEADERSHIP AND PERSONAL DEVELOPMENT

STUDY PLAN: INDUSTRIAL AND MANAGEMENT SYSTEMS ENGINEERING

1ST YEAR

1st Semester

- INTRODUCTION TO CALCULUS
- PHYSICS 1
- CHEMISTRY
- INTRODUCTION TO ENGINEERING PROGRAMMING
- ENGINEERING MATERIALS
- ACADEMIC LISTENING AND SPEAKING
- INTERPRETATION AND ARGUMENT

2nd Semester

- PHYSICS 2
- ADVANCED CALCULUS
- ENGINEERING DRAWING
- ENGINEERING MECHANICS
- ACADEMIC READING AND WRITING
- INNOVATIVE COMMUNICATION

2nd YEAR

- NUMERICAL METHODS
- DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA
- INTELLIGENT DEVICE AND DIGITALS
- PROCESS ANALYSIS AND REDESIGN
- INTRODUCTION TO DATABASE DESIGN AND IMPLEMENTATION
- CREATIVE THINKING

- OPERATIONS RESEARCH
- ENGINEERING ECONOMY
- DISCRETE EVENT SIMULATION
- AUTOMATION SYSTEMS
- CRITICAL THINKING
- PROBABILITY AND STATISTICS

3rd YEAR

- COMPUTER AND INFORMATION TECHNOLOGY FOR INDUSTRIAL ENGINEERING
- SUPPLY CHAIN MODELLING
- MANUFACTURING LOGISTICS AND WAREHOUSE MANAGEMENT
- HUMAN FACTORS IN ENGINEERING AND DESIGN
- QUALITY ENGINEERING

- DATA SCIENCE AND DATA ANALYTICS
- DECISION MODELLING AND RISK ANALYSIS
- ARTIFICIAL INTELLIGENCE IN INDUSTRIAL ENGINEERING
- PRODUCTION PLANNING AND CONTROL
- DESIGN METHODS FOR INNOVATIONS

Or

- DATA SCIENCE AND DATA ANALYTICS
- DECISION MODELLING AND RISK ANALYSIS
- ARTIFICIAL INTELLIGENCE IN INDUSTRIAL ENGINEERING
- PRODUCTION PLANNING AND CONTROL
- DESIGN METHODS FOR INNOVATIONS

SUMMER

INDUSTRIAL INTERNSHIP

4th YEAR

1st Semester

- IMSE ELECTIVE
- IMSE PROJECT PREPARATION

Or

- COOPERATIVE EDUCATION

Or

- STUDY ABROAD

2nd Semester

- PROJECT MANAGEMENT
- IMSE ELECTIVE
- IMSE PROJECT

Or

- PROJECT MANAGEMENT
- IMSE ELECTIVE
- IMSE ELECTIVE
- IMSE PROJECT

STUDY PLAN: BIOMEDICAL ENGINEERING

1ST YEAR

1st Semester

- INTRODUCTION TO ENGINEERING PROGRAMMING
- INTRODUCTION TO CALCULUS
- PHYSICS I
- CHEMISTRY
- ENGINEERING MATERIALS
- ACADEMIC LISTENING AND SPEAKING

2nd Semester

- ADVANCED CALCULUS
- PHYSICS II
- ENGINEERING DRAWING
- ENGINEERING MECHANICS
- PRINCIPLE OF BIOMEDICAL ENGINEERING
- ACADEMIC READING AND WRITING

2nd YEAR

- DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA
- BIOLOGY
- BIOMEDICAL ENGINEERING LAB I
- PHYSIOLOGY
- MEASUREMENT AND INSTRUMENTATION FOR BIOMEDICAL ENGINEERS

- COMPUTER-AIDED DESIGNS IN BIOMEDICAL APPLICATIONS
- BIOMEDICAL SIGNAL AND SYSTEM
- ELECTRIC CIRCUIT ANALYSIS FOR BIOMEDICAL ENGINEER
- BIOMEDICAL ENGINEERING LAB II
- DIGITAL ELECTRONIC AND MICROCONTROLLER
- BIOCHEMISTRY

3rd YEAR

MAJOR: BME-BMI-A, BME-BMI-B

- BIOMEDICAL INSTRUMENTATION
- BIOSTATISTICS
- CONTROL SYSTEM FOR BIOMEDICAL ENGINEERS
- BIOMEDICAL ELECTRONICS
- ADVANCED ELECTRIC CIRCUIT ANALYSIS OF BIOMEDICAL ENGINEERS
- BME PROBLEM BASED TRAINING LAB I
- BIOMEDICAL ENGINEERING APPLICATION

MAJOR: BME-HIT-A, BME-HIT-B

- BIOMEDICAL INSTRUMENTATION
- BIOSTATISTICS
- FUNDAMENTAL OF DATABASE SYSTEM
- COMPUTER COMMUNICATION NETWORKS
- ANDROID PROGRAMMING IN BIOMEDICAL ENGINEERING APPLICATION
- BME PROBLEM BASED TRAINING LAB I
- BIOMEDICAL ENGINEERING APPLICATION

MAJOR: BME-MS

- BIOMEDICAL INSTRUMENTATION
- BODY MOVEMENT AND CONTROL- LOCOMOTOR SYSTEM
- BODY FLUID HOMEOSTASIS I – BLOOD AND CIRCULATION
- BODY HEALTH AND HEALTHY LIVING
- BME PROBLEM BASED TRAINING LAB I
- BIOMEDICAL ENGINEERING APPLICATION

MAJOR: BME-BMI-A, BME-BMI-B

- BME PROBLEM BASED TRAINING LAB II
- ADVANCED BIOMEDICAL INSTRUMENTATION
- ELECTRONIC ENGINEERING
- PRINCIPLE OF COMMUNICATION
- ELECTROMAGNETICS

MAJOR: BME-HIT-A, BME-HIT-B

- BME PROBLEM BASED TRAINING LAB II
- PRINCIPLE OF HEALTHCARE INFORMATION TECHNOLOGY
- FUNDAMENTAL OF BIOMEDICAL IMAGING
- FINITE ELEMENT ANALYSIS AND APPLICATION IN BIOMEDICAL ENGINEERING
- THERMODYNAMICS

MAJOR: BME-MS

- BME PROBLEM BASED TRAINING LAB II
- BRAIN AND MIND
- BODY DEFENSE SYSTEM
- SEX, GENDER AND REPRODUCTION
- HUMAN GENETICS AND EPIDEMIOLOGY
- WOMAN AND CHILD HEATH

SUMMER

INDUSTRIAL INTERNSHIP

4th YEAR

1st Semester

MAJOR: BME-BMI-A, BME-HIT-A

- BME ELECTIVE
- BME ELECTIVE
- BME CAPSTONE DESIGN

MAJOR: BME-MS

- BODY HOMEOSTASIS II – PULMONARY AND RENAL SYSTEMS
- BODY ENERGY SYSTEM-GI ,LIVER, NUTRITION AND METABOLISM
- BODY REGULATORY SYSTEM – AUTONOMIC NERVOUS & ENDOCRINE SYSTEMS
- BME CAPSTONE DESIGN

2nd Semester

MAJOR: BME-BMI-A, BME-HIT-A, BME-MS

- BME ELECTIVE
- BME ELECTIVE
- BME SENIOR PROJECT

STUDY PLAN: CIVIL ENGINEERING

1ST YEAR

1st Semester

- INTRODUCTION TO ENGINEERING PROGRAMMING
- INTRODUCTION TO CALCULUS
- PHYSICS I
- CHEMISTRY
- ENGINEERING MATERIALS
- ACADEMIC LISTENING AND SPEAKING

2nd Semester

- ADVANCED CALCULUS
- PHYSICS II
- ENGINEERING DRAWING
- ENGINEERING MECHANICS
- ACADEMIC READING AND WRITING

2nd YEAR

- NUMERICAL METHODS
- DIFFERENTIAL EQUATIONS AND LINEAR ALGEBRA
- SURVEYING
- MECHANICS OF MATERIALS I
- HYDRAULICS
- HYDRAULICS LABORATORY
- INTRODUCTION TO ENVIRONMENTAL PRINCIPLES

- ADVANCED MATHEMATICS FOR CIVIL ENGINEERING
- CONCRETE AND CIVIL ENGINEERING MATERIALS
- CIVIL ENGINEERING MATERIALS TESTING LABORATORY
- HYDROLOGY
- THEORY OF STRUCTURES
- PROBABILITY AND STATISTICS
- SURVEYNG CAMP

3rd YEAR

- STRUCTURAL ANALYSIS
- SOIL MECHANICS
- SOIL MECHANICS LABORATORY
- TRANSPORTATION ENGINEERING
- REINFORCED CONCRETE DESIGN
- CE ELECTIVE

- HYDRAULIC ENGINEERING
- TIMBER AND STEEL DESIGN
- FOUNDATION ENGINEERING AND DESIGN
- CE ELECTIVE

Or

- HYDRAULIC ENGINEERING
- TIMBER AND STEEL DESIGN
- FOUNDATION ENGINEERING AND DESIGN
- CE ELECTIVE

SUMMER

INDUSTRIAL INTERNSHIP

4th YEAR

- CE ELECTIVE
- CE ELECTIVE
- CE PROJECT PREPARATION

Or

- COOPERATIVE EDUCATION

Or

- STUDY ABROAD

- CONSTRUCTION ENGINEERING AND MANAGEMENT
- CE ELECTIVE
- CE PROJECT

Or

- CONSTRUCTION ENGINEERING AND MANAGEMENT
- CE ELECTIVE
- CE ELECTIVE
- CE PROJECT

STUDY PLAN: COMPUTER INNOVATION ENGINEERING

Minimum credits required for graduation 128 credits + Innovative Internship requirements
Credit notation: (L – E – S) L = Lecture / Learning hours, E = Laboratory hours, S = Self-study hours

1ST YEAR

1st Semester

- Discrete Mathematics	4(4-0-8)
- Fundamentals of Programming	4(3-3-8)
- Introduction to Calculus	3(3-0-6)
- Physics I	4(3-3-8)
- (GenEd Elective)	3(3-0-6)
- (ESL) Academic Listening and Speaking **Audits**	4(4-0-8)

2nd Semester

- (GenEd) Interpretation and Arguments	4(4-0-8)
- Intelligent Devices and Digital Systems	4(3-3-6)
- Advanced Calculus	3(3-0-6)
- Physics II	4(3-3-8)
- (ESL) Academic Reading and Writing **Audits**	4(4-0-8)

2nd YEAR

- Emerging Trends in Engineering	1(1-0-2)
- (GenEd Elective)	3(3-0-6)
- (GenEd) Innovative Communication	4(4-0-8)
- Principles of Computation and Applications	4(3-3-8)
- Cyber-Physical System Design	4(3-3-8)

- (GenEd) Design Methods for Innovations	4(4-0-8)
- (GenEd Elective)	3(3-0-6)
- (Science&Math) Probability and Statistics	4(4-0-8)
- Computer Systems	4(3-3-8)
- Information Network and Cyber Security	4(3-3-8)

For Regular Students

3rd YEAR

1st Semester

- (Science & Mathematics Elective)	4(4-0-8)
- Database Technology	4(3-3-8)
- Elements of Software Construction	4(3-3-8)
- Cloud Computing	4(3-3-8)

2nd Semester

- (GenEd) Lean Startup and Agile Business	4(4-0-8)
- (Science & Mathematics Elective)	4(4-0-8)
- (Free Elective)	X(x-x-x)
- Internet of Things and Smart Systems	4(3-3-8)
- Data Analytics	4(3-3-8)

4th YEAR

- (Free Elective)	X(x-x-x)
- (CIE Elective)	4(3-3-8)
- Capstone Design Preparation	6(3-6-12)

- (CIE Elective)	4(3-3-8)
- (GenEd) Innovation Management	4(4-0-8)
- Computer Innovation Engineering Capstone Design	4(3-4-10)

For Co-Op/Study Abroad Students

3rd YEAR

1st Semester

- (Science & Mathematics Elective)	4(4-0-8)
- Database Technology	4(3-3-8)
- Elements of Software Construction	4(3-3-8)
- Cloud Computing	4(3-3-8)

2nd Semester

- (GenEd) Lean Startup and Agile Business	4(4-0-8)
- (Science & Mathematics Elective)	4(4-0-8)
- Internet of Things and Smart Systems	4(3-3-8)
- Data Analytics	4(3-3-8)
- (CIE Elective)	4(3-3-8)

4th YEAR

Cooperative Education	6 (0-45-0)
or	
Study Abroad	

- (CIE Elective)	4(3-3-8)
- (Free Elective)	X(x-x-x)
- (Free Elective)	X(x-x-x)
- (GenEd) Innovation Management	4(4-0-8)
- Computer Innovation Engineering Capstone Design	4(3-4-10)

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