Electrical Engineering

Associate Professor Dr Banlue Srisuchinwong

27 April 2019
Faculty Members
**Chairperson of EE Program**

**Asst. Prof. Dr. Prapun Suksompong**

**Research:**
Wireless communications, Indoor positioning principles and localization techniques, Computational neuroscience, Energy-efficient coding, Poisson process and Poisson convergence

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**Assoc. Prof. Dr. Banlue Srisuchinwong**

**Research:**
Microelectronics, Chaotic circuits and systems, Nonlinear dynamics, Filters, and Oscillators.

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**Assoc. Prof. Dr. Waree Kongprawechnon**

**Research:**
$H\infty$ control, Control theory, Robust control, System identification, Modeling, Adaptive control, Learning control, Neural network and Fuzzy control.

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**Assoc. Prof. Dr. Chalie Charoenlarpnopparut**

**Research:**
Multidimensional systems and signal processing, Robust control, Image processing, Wavelet and filter bank, Signal processing for communication, Convolutional code design.
**EE Faculty Members**

**Assoc. Prof. Dr. Toshiaki Kondo**

**Research:**
Digital image processing, feature detection and segmentation in 2-D and 3-D, computer vision, depth estimation, motion estimation. Pattern recognition, Human face recognition.

**Asst. Prof. Dr. Itthisek Nilkhamhang**

**Research:**
Robust and adaptive control, System identification, Nonlinear systems, Mechatronics, Robotics, Electrical power systems, Fuzzy and neural network control theories, Haptic interfaces

**Asst. Prof. Dr. Somsak Kittipiyakul**

**Research:**
Wireless communications and networking, Resource allocation and scheduling, Performance analysis of queuing systems, Stochastic control.
The 2018 EE Curriculum

The 2018 EE Curriculum is to be certified by The Council of Engineers:

In Electrical Engineering (Communications), or In Electrical Engineering (Power)
EE Courses (150 Credits)

1. General Basic Courses (30 Credits)
2. Major Courses (114 Credits)
3. Free Elective Courses (6 Credits)
1. General Basic Courses

General Basic Courses (30 credits)

- Social Science
- Humanities
- Science and Mathematics
- Languages
2. Major Courses

(2.1) Basic Courses

(2.2) Specialized Courses
2.1. Basic Courses (38 credits)

- Basic Mathematic and Science Courses
- Basic Engineering Courses
(2.2) Specialized Courses

2.2.1. Compulsory Engineering Courses (64 credits)
Option I : Communication Engineering
Option II : Power Engineering

2.2.2. Elective Engineering Courses

(i). Special Studies (6 credits)
   Track I : Senior Project Track
   Track II : Foreign Exchange Track
   Track III : Extended Training Track

(ii). Technical Elective Courses (6 credits)
# (2.2) Specialized Courses

## 2.2.1. Option I: Communication Engineering

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<thead>
<tr>
<th>Courses</th>
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<td>Circuit Analysis</td>
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<td>Basic EE Lab</td>
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<td>Computational Tools in EE</td>
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<td>Electrical Measurement and Instrumentation</td>
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<td>Electronic Circuits I</td>
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<td>Probability and Random Processes</td>
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<td>Microprocessors and Embedded Systems</td>
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<tr>
<td>Feedback Control Systems</td>
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<td>Feedback Control Lab</td>
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<td>Principles of Communications</td>
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<td>Digital Signal Processing</td>
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<td>Broadband Communications</td>
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<td>EE Project Design I</td>
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<td>EE Project Design II</td>
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2.2.1. Option II: Power Engineering

- Circuit Analysis
- Basic EE Lab
- Computational Tools in EE
- Electrical Measurement and Instrumentation
- Electromagnetics
- Signals and Systems
- Electronic Circuits I
- Electronic Circuits II
- Electronic Circuits Lab
- Digital Circuits
- Digital Circuit Lab
- Probability and Random Processes
- Electrical Machines
- Electrical Machines Lab

- Microprocessors and Embedded Systems
- Feedback Control Systems
- Feedback Control Lab
- Principles of Communications
- Renewable Energy
- Energy Conservation and Management
- Electrical Power Systems
- Electrical System Design
- Power Electronics
- Electrical Safety
- EE Project Design I
- EE Project Design II
(i) Special Studies

In the last semester, students can choose from three main tracks:

**Track I: Senior Project**

**Track II: Foreign Exchange**

**Track III: Extended Training**

### 4th Year (S.2)

- EES498 Electrical Engineering Project
- XXXxxx Free Elective
- XXXxxx Free Elective
- EES496 Special Studies in Electrical Engineering I
- EES497 Special Studies in Electrical Engineering III
- XXXxxx Free Elective
- EES499 Extended Electrical Engineering Training
- XXXxxx Free Elective
- Foreign Exchange Track
- Extended Training Track
Select 6 Credits from the list of courses offered by EE program, except basic courses.

(The number of students must be more than 15).
3. Free Elective Courses

Students may choose any free elective courses (not less than 6 credits in total) offered by SIIT or TU, including general basic courses, except:

1. General Basic Courses in Science and Mathematics.
2. General Basic TU Courses.
3. Courses with contents similar to those of other courses in the Curriculum already taken by students.
Examples
VDO: How an electrical signal is generated
VDO: How electrical signals are measured!
VDO: How electrical signals are displayed!
Measures of the PM1, the PM2.5, the PM10

By an EE Student

Phatham Loahavilai
CERN, Switzerland
EC#25
Mobile Communications
Digital and Analog Communications
Satellite Technology
Internet Infrastructure
Unmanned Vehicles
Intelligent Cars
Transmission Lines
Smart Grid Technology
Renewable energy
EE Internship
Internship aboard

Nattaya Yongpongsan
IMTEK, Germany
EC#24

Neeranuch Sangaphanthavorn
Osaka Institute of Technology, Japan
EC#24

Pitakta Subpoolpech
Haneishi Laboratory, Chiba University, Japan
EC#24

Chatchamon Phoojaroenchanachai
TeleGroup Ltd, Belgrade, Serbia
EC#24
Supakan Prunsinchai
Osaka Institute of Technology, Japan
EC#24

Phatham Loahavilai
CERN, Switzerland
EC#25

Thanapon Thanapongsak
Osaka Institute of Technology, Japan
EC#25

Waljira Srisil
Chiba University, Japan
EC#25

Phrimphissa Kraikhun
School of Engineering, University of Tokyo, Japan
EC#25

Chutimon Cherdpongtagit
Osaka Institute of Technology, Japan
EC#25
EE
Further Studies
Further Studies
Anwida Prompijit
Fulbright Scholarship
University of Michigan
EE#10

Jadesada Maneeratanaporn
MEXT Scholarship
Keio University
TC#15

Wattanit Hotrakool
Sheffield Merit Scholarship
University of Sheffield
TC#15

Suthira Limkul
JASSO Scholarship
Tokyo Institute of Tech
EC#16

Chernroj Sawasdivorn
Panasonic Scholarship
Tohoku University
EC#16

Thitipong Sansanayuth
Sievert Larsson Scholarship
Chalmers University of Tech
EC#17

Witchapong Daroontham
Intouch Scholarship
University College London
EC#18

Veerachart Srisamosorn
MEXT Scholarship
University of Tokyo
EC#18
EE
Future Careers
Thongchai Watanasoponwong
Country Manager (Thailand, Indochina)
EE#4

Boonsarn Pitakdumrongkija
Assistant Manager (Research)
EE#7

Puripong Thepchatri
Product Line Manager
EE#7

Channunchida Theerasilp
Financial Controller
EE#9

Vudhipong Jirapanjavat
Telecommunications Engineer
EE#7

Worpong Sinsukthavorn
Vice President (Asset)
EE#8

Nokia

AXIS

NEC

EGCO Group

Fabrinet
Appendix
Major Courses

Overview

1st Year
- SCS139 Applied Physics II
- MAS210 Mathematics III
- SCS138 Applied Physics I
- TU102 Social Life Skill
- GTS202 English Language Structures

2nd Year (S.1)
- EES216 Circuit Analysis
- EES210 Basic Electrical Engineering Lab
- EES211 Electrical Measurement and Instrumentation
- EES212 Electromagnetic

2nd Year (S.2)
- EES221 Computational Tools in EE
- EES281 Signals & Systems
- EES271 Digital Circuit
- GTS202 English Language Structures

3rd Year (S.1)
- EES331 Electronic Circuit I
- EES381 Feedback Control Systems
- EES341 Electrical Machines

3rd Year (S.2)
- EES332 Electronic Circuit II
- EES380 Feedback Control Laboratory
- EES342 Electrical Power System

3rd Year (S.3)
- EES333 Electronic Circuits Laboratory
- EES343 Electrical Energy and Management

4th Year (S.1)
- EES300 Electrical Engineering Training
- EES301 Electronic Circuit II
- EES315 Probability and Random Processes

4th Year (S.2)
- EES498 Electrical Engineering Project
- EES496 Special Studies in Electrical Engineering
- EES497 Special Studies in Electrical Engineering

Foreign Exchange Track
- XXXxxx Free Elective

Extended Training Track
- XXXxxx Free Elective

Senior Project Track
- XXXxxx Free Elective
- XXXxxx Free Elective

Extended Training Track
- TU101 Thailand, ASEAN, and the World
- XXXxxx Free Elective

Senior Project Track
- TU101 Extended Electrical Engineering Training
### Major Courses

#### (1) Basic Courses

(2) Specialized Courses

The courses are designed to provide students a broad understanding of the principles, illustrated by current applications, in electrical engineering. The compulsory courses include four laboratory courses, providing hands-on learning of electric circuits, digital circuits, electronics, and feedback control.
Major Courses

(1) Basic Courses
(2) Specialized Courses
Two Options

By the end of the first semester of their third year, students complete the study of most compulsory courses. The students then choose to study in one of the two options.

Option I: Communication Engineering

Option II: Power Engineering

Each option include one laboratory course and six lecture courses covering several important areas in the corresponding options.

3rd Year (S.2)

- EES452 Digital Communication Systems
- EES455 Mobile Communications
- EES472 Digital Signal Processing
- EES451 Data Communications and Networks
- EES342 Electrical Power System
- EES441 Electrical System Design
- EES446 Energy Conservation and Management
- EES448 Electrical Safety

4th Year (S.1)

- EES454 Communication Networks and Transmission Line
- ESS457 Broadband Communication
- EES450 Signal Processing and Communication Laboratory
- EES442 Power Electronic
- ECS445 Renewable Energy
- EES340 Electrical Machines Laboratory
In the last semester, students can choose from three main tracks:

- **Track I: Senior Project**
- **Track II: Extended Training**
- **Track III: Foreign Exchange**
EE World.