School of Engineering and Technology
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Learning Approach

Individualized Academic Advising. Every student at AIT has a faculty advisor. Advisors help their advisees devise their study plans and monitor their progress.

Small Class Sizes. Averaging 20 students, small classes maximize student-teacher interaction.

Lectures. In each of the first two semesters, full-time master’s students take an average of 12 credits of lectures and laboratory work in their chosen field. Most students take additional courses during the summer break while preparing their thesis proposal. Doctoral students normally complete one year of coursework before taking a qualifying examination to advance to candidacy.

Flexible Curriculum. In offering opportunity and choice, the school takes a flexible approach to teaching. Students choose their own study programs according to their interests and future career objectives in consultation with their advisors.

First-hand Research Experience. In laboratory courses and in research, students conduct experiments that clarify and complement theory covered in lecture.

Assessment and Examinations. Assessment is based on a mixture of assignments, laboratory work, examinations, projects, research reports and/or thesis.

Academic Support System

Internationally-Recognized Engineering Faculty. The School of Engineering and Technology faculty share their enthusiasm and expertise with the entire community. Faculty members participate in teaching, supervise research, serve as advisors, develop curriculum, serve on committees, participate in continuing professional development programs and are active members of professional organizations.


Computing services are available everywhere in AIT including dormitories, classrooms, laboratories, and study halls. The campus network makes it easy for students to communicate with faculty members and other students on and off campus through e-mail, net meetings and video conferences.

The Language Center offers a range of intensive language and academic preparation programs for students studying at AIT.

The Library is central to the academic life of every student. The institute boasts an integrated online system with more than 230,000 items and 900 journal subscriptions in science, engineering, technology and management. It offers in-depth reference services, inter-library loans and facilities for computerized literature search. It also provides microfilming, bibliography compilation and document delivery services.
THEMATIC GROUPS

Introduction to Fields of Study

CIVIL AND INFRASTRUCTURE ENGINEERING GROUP
Since the founding of AIT, its civil engineering fields have promoted modern methodologies, emerging technologies and innovative materials for the design and construction of safe and economical infrastructure in the region. The Civil and Infrastructure Engineering group includes the following field of studies:
- Construction, Engineering and Infrastructure Management (CEIM)
- Geotechnical and Earth Resources Engineering (GTE)
- Structural Engineering (STE)
- Transportation Engineering (TRE)
- Water Engineering and Management (WEM)
- Offshore Technology and Management (OTM)
- Disaster Preparedness, Mitigation and Management (DPMM)
- Gender, Transportation and Development

INDUSTRIAL SYSTEMS ENGINEERING GROUP
For several decades, AIT has served in the development of the region by equipping young engineers with the high-tech knowledge required to work in complex industrial environments. Since its inception, the Industrial Systems Engineering (ISE) thematic group at AIT has contributed to this mission by focusing on industrial competitiveness and innovation for sustainable growth in the region. The ISE group is comprised of the following field of studies:
- Mechatronics (MEC)
- Microelectronics and Embedded Systems (MES)
- Industrial and Manufacturing Engineering (IME)
- Nanotechnology

INFORMATION AND COMMUNICATIONS GROUP
Information and communications enable access, connections and sharing in turn enable knowledge creation and economic opportunity. The fields in the Information and Communications group are:
- Computer Science (CS)
- Information Management (IM)
- Remote Sensing and Geographic Information Systems (RS-GIS)
- Telecommunications (TC)
- Information and Communications Technologies (ICT)
CONSTRUCTION, ENGINEERING AND INFRASTRUCTURE MANAGEMENT

Civil and Infrastructure Engineering Group

The Construction, Engineering and Infrastructure Management (CEIM) field of study prepares students to become effective managers and decision-makers familiar with the modern techniques of construction management, engineering management and infrastructure management. It trains professionals to play leading roles in the international construction industry. It molds students to become active leaders in infrastructure development and management.

Areas of Specialization

Students may choose to either specialize in Construction Engineering and Management (CEM) or Infrastructure Management (IM).

Construction Engineering and Management covers advanced project management approaches to finance, plan, design, construct, monitor and control construction projects. This master’s degree program emphasizes in-depth construction project management approaches such as project organization management, construction planning and control, project procurement, contract management, productivity analysis and improvement, quality and safety improvement, IT in project management, sustainable construction, project financing, Public Private Partnership (PPP) project management, international construction joint venture and construction business strategy.

Infrastructure Management focuses on the processes necessary for the planning and development of new infrastructure, and on maintaining and operating mature infrastructure for sustainability. A wide variety of management topics are covered, such as infrastructure planning, infrastructure economics, infrastructure management systems, optimal maintenance management, reliability of infrastructure systems, asset valuation and utilization, and infrastructure planning under risk and uncertainty.

Research Center

CEIM hosts the EU-ASIA Network of Competence Enhancement on Public Private Partnership (PPP) in Infrastructure Development.

Computer Simulation Lab

- AROUSAL (Construction Project Management Simulator)
- STELLA (System Dynamics Simulation Software)
- Project Scheduling and Resources Management Software
- Contract and Cost Management Software
- @RISK Decision Tool (Risk Analysis)
- Virtual Reality

Coordinator

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Courses Offered

**Construction Engineering and Management**
- Engineering Cost and Financial Management
- Integrated Project Planning and Control
- Management of Construction Organizations
- Research Methodology in the Built Environment
- Legal and Contractual Risk Management
- Project Performance Management
- Safety and Health Management in Construction
- Infrastructure System Analysis and Management
- Project Financing

**Infrastructure Management**
- Engineering Cost and Financial Management
- Integrated Project Planning and Control
- Infrastructure System Analysis and Management
- Project Performance Management
- Computer Methods for Structural Analysis
- Public Transportation Systems
- Urban/Regional Transportation Analysis and Planning Methods
- Water Resources Systems
- Irrigation and Drainage Engineering

Faculty Members

Charoenngam, Chotchai
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The Geotechnical and Earth Resources Engineering (GTE) field of study educates students not only in the traditional areas of geotechnical engineering, such as foundation engineering, earth structures, underground excavation and slope engineering, but also in new dynamic areas such as tunneling, ground improvement, geosynthetic engineering, land reclamation, computational techniques, forensic engineering and offshore exploration. GTE students are also trained to solve increasingly challenging environmental problems involving engineering for provision of efficient waste disposal facilities, clean-up of contaminated sites as well as prevention and mitigation of geohazards such as landslides and erosion problems.

**Specialization Areas in Geotechnical Engineering:**
- Soil Engineering
- Rock Engineering Geology and Applied Geology
- Geoenvironmental Engineering

**Interdisciplinary Area of Specialization in:**
- Geo-Exploration and Petroleum Engineering (GEPG)

**Professional Master Engineering Programs:**
- PME in Geotechnical Engineering and Management (PME-GEM)
- PME in Geoexploration and Petroleum Engineering (PME-GEPG)
- PME in Soil Improvement and Geosynthetics Engineering & Management (PME-SIGMA)

**Laboratory Facilities**
GTE’s laboratories are among the best equipped and most active geotechnique laboratories in the Asia-Pacific region. They include the Soil Mechanics Laboratory, the Rock Mechanics Laboratory, the Engineering Geology Laboratory, the Geo-synthetic Material Laboratory, the Geophysics Laboratory and the Geoenvironmental Laboratory. GTE laboratories support teaching and research activities and also provide commercial testing services for many large national and international infrastructure development projects.

**Research Centers**
GTE hosts the Asian Center for Soil Improvement and Geosynthetics (ACSIG) to promote training and professional activities in these emerging areas. ACSIG is also the Secretariat of the International Geosynthetic Society-Thailand Chapter. GTE is also the home of the Southeast Asian Geotechnical Society (SEAGS) which was established 30 years ago at AIT as the catalyst for promotion of professional activities and cooperation among geotechnical engineers in the region. SEAGS publishes the well-established Geotechnical Engineering Journal.
Courses Offered

- Mechanics of Soils and Testing
- Foundation Engineering and Design
- Ground Improvement Techniques and Geosynthetics
- Analytical/Numerical Methods in Geotechnical Engineering
- Soil Dynamics and Earthquake Engineering
- Reliability Based and Soil Engineering Design
- Engineering Geology
- Rock Mechanics
- Underground Excavation and Tunneling
- Geoenvironmental Engineering
- Georisk Engineering
- Fundamentals of Geosystem Exploration
- Exploration Geophysics
- Petroleum Reservoir Engineering
- Groundwater Exploration and Engineering Geophysics

Faculty and Staff Members

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The Structural Engineering (STE) field of study teaches students to plan, design, and supervise the construction of infrastructure and facilities essential to modern life. Structural engineers investigate the behavior and design of all kinds of structures, including buildings, skyscrapers, bridges, elevated highways, tunnels, airports, dams, power plants, factories, stadiums, shopping complexes, oil rigs and aircraft. They must ensure that their designs satisfy a given design intent predicated on safety and on serviceability. They are also responsible for making efficient use of funds and materials to achieve these goals. As structures become more complex, structural engineers strive to find innovative solutions to improve the structural performance. Therefore, STE students are taught to keep abreast of the latest developments in advanced structural materials, computational modeling of structural systems, seismic-resistant design, building aerodynamics, construction planning and management and much more. Students are also taught to question and challenge general beliefs and practices in the field through basic and applied research.

The STE curriculum is kept up-to-date and relevant through the faculty’s ongoing active involvement in the solution of strategic real world problems outside the classroom. It offers two areas of specialization and the flexibility to construct personalized study programs, either broad-based and multidisciplinary or narrowly focused and highly technical. STE alumni form a strong network of regional leaders in private practice, government service, education and research.

Areas of Specialization
STE students may choose one of two areas of specialization.

**Structural Analysis, Mechanics and Computation** focuses on computational and applied mechanics, finite element methods, structural dynamics, wind and earthquake engineering, computer-aided design and expert systems.

**Structural Design and Materials** stresses advanced and low-cost construction materials, concrete technology, advanced design of reinforced and pre-stressed concrete structures, seismic design and wind-resistant design of structures, bridge engineering, and fire protection technology.
Courses Offered

- Computer Methods of Structural Analysis
- Structural Dynamics
- Continuum Mechanics
- Advanced Concrete Technology
- Advanced Steel Structures
- Finite Element Methods in Engineering
- Wind and Earthquake Engineering
- Advanced Concrete Structures
- Experimental Methods in Structural Engineering
- Forensic Engineering, Structural Evaluation and Retrofitting of Structures
- Tall Buildings
- Advanced Topics in Bridge Engineering

Laboratory Facilities

The Structural Engineering Laboratory has a long history of excellence in structural engineering and construction material research. The laboratory offers a wide range of facilities for students and faculty to conduct experimental research studies and collaborate with the construction industry. The laboratory facilities include:

- **A 1.5-meter-thick Strong Floor**, covering an area of 16x26 m², with a large number of high capacity anchorage slots. This facility provides versatility in the designing and mounting of experiments. Full-scale structural models can be loaded to destruction.

- **A Seismic Load Simulation Facility**, capable of performing various experimental seismic tests on near-full-scale structural models, such as quasi-static reversed cyclic loading tests, and pseudo-dynamic tests. Several high capacity, long-stroke hydraulic actuators with precision closed-loop servo value control, and several lateral and vertical loading frames are available with this facility.

- **A Boundary Layer Wind Tunnel Laboratory**, a state-of-the-art research facility for the study of wind loads and several complex wind-induced effects on buildings and structures. The laboratory was developed by a joint effort between Faculty of Engineering at Thammasat University and STE of AIT. This is the longest and largest wind tunnel in Thailand. It is well equipped with hot-wire anemometers, multi-component dynamic force sensors, simultaneous pressure transducers, and several other instruments. With this facility, various types of advanced experimental research study, student training, and industrial aerodynamic tests are currently being implemented.

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The Transportation Engineering (TRE) field of study trains students to solve challenging problems arising from the effects of industrialization and population growth on the movement of people and goods. In cities around the world, movement is hampered by traffic congestion, insufficiency of public transport facilities, traffic accidents, and other conditions. As manufacturing expands globally, businesses are seeking to reduce transportation costs by moving more goods through fewer distribution nodes. Concerns over congestion on highways, increasing pollution and hazardous materials all emphasize the need to maximize the efficiency of our transportation systems. TRE students learn to address these problems by applying advanced knowledge in transportation planning and economics, traffic engineering and the design of highways/pavements and other transportation facilities. Students in TRE acquire advanced skills in planning, design, operations, maintenance, rehabilitation, performance, and evaluation of transportation systems, including their economic and public policy aspects. The curriculum emphasizes development of analytic, problem-solving, design and management skills suitable for public and private sector professional work.

Areas of Specialization

TRE students may choose one of two areas of specialization.

Planning and Engineering trains students in planning and logistics as well as traffic and safety. Among other topics, they are immersed to issues relating to transportation systems, urban/regional transportation analysis and planning methods, airport planning & design, and traffic engineering.

Highways and Pavements focuses on design and operation as well as management systems and maintenance. Students in this specialization will become skilled in geometric design and highway safety, design/performance of highways and airport pavement as well as pavement management systems.

Laboratory Facilities

Laboratories in the TRE field of study provide students with up-to-date software, hardware, equipment and high speed Internet connections to ensure seamless research study. Students interested in working on pavement design have the access to the Thailand Department of Highways. TRE students may also use equipment and resources in the ACTS and TARC research centers.

Research Center/Sponsored Research/ Training

- Asian Center for Transportation Studies (ACTS)
- Thailand Accident Research Center (TARC)
- Logistics Management at the Intermodel Terminals
Courses Offered

TRE field gives students an opportunity to explore the technological, safety, political/economic, and energy/environment dimensions of Transportation Engineering. In offering opportunity and choice, students can design their own study programs according to their inclinations and future career objectives. In addition to the courses specified below, students, under the guidance of their academic advisors, can select courses from a wide range of electives from other fields/schools as part of an approved study plan.

- Transportation Systems
- Urban/Regional Transportation Analysis and Planning Methods
- Public Transportation Systems
- Transportation Policy and Environmental Limits
- Design and Performance of Highway and Airport Pavement
- Pavement Management Systems
- Urban Transportation Policy and Planning
- Transportation Economics and Project Evaluation
- Logistics Systems
- Airport Planning and Design
- Traffic Engineering
- Planning for Traffic Safety and Injury Prevention
- Intelligent Transportation Systems
- Geometric Design and Highway Safety

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Today’s major challenges for water engineers and managers include securing water for people and for food production, protecting vital ecosystems, and dealing with climate variability and change and uncertainty of water in space and time.

The Water Engineering and Management (WEM) imparts education and training towards an understanding of the complexity of water cycle, utilization, and management. It offers a balanced curriculum covering both engineering and management aspects of water resources. Students acquire knowledge and hands-on practice in tools and techniques to come up with viable and sustainable water management for water, food, energy, and environmental security. Students conduct research on country-specific water related problems, and have opportunities to join research and internship programs with industries and partners.

Academic Programs

Masters and Doctoral Degree Program

WEM offers academic programs leading to Masters Degree, Doctoral Degree, Professional Masters Degree, and Diploma and Certificates covering five focal areas: Agricultural Water, Coastal Water, Urban Water, Water Resources, and Extreme Events and Risk Management. For further details, please visit www.set.ait.asia/wem/

Double Degree Masters Program

The following Double Degree Masters programs are offered with renowned institutions under which students are awarded two Masters degrees: one from AIT and one from AIT’s partner institution.

- Urban Water Engineering and Management (UWEM) in collaboration with UNESCO-IHE, The Netherlands and Environmental Engineering and Management field of study at AIT
- Agricultural Water Management for Enhanced Land and Water Productivity (DD-AWELWP) in collaboration with UNESCO-IHE, The Netherlands
- Hydroinformatics and Water Management (HWM) in collaboration with The University of Nice, Sophia Antipolise, France

Distance-based Program

WEM also offers e-learning programs on:

- Integrated Water Resources Management (IWRM) in collaboration with UNU-INWEH, Canada
- Service Oriented Management of Irrigation Systems (SOMIS) in collaboration with UNESCO-IHE, The Netherlands
Courses Offered
- Watershed Hydrology
- Water Resources Systems
- Hydrodynamics
- Concepts in Water Modeling
- Irrigation and Drainage Engineering
- Irrigation and Drainage Systems Management
- Coastal and Estuarine Processes
- Coastal Zone Management
- Water Supply and Sanitation
- Urban Drainage Management
- Climate Change and Water Resources
- River Engineering and Modeling
- Groundwater Development and Management
- Integrated Water Resources Management
- Land and Water Conservation and Management
- Modeling of Water Resources Systems
- Floods and Droughts
- Flood Modeling and Management
- EIA and GIS Applications in Water Resources
- Research Design and Experimental Methods

Laboratory Facilities
- Hydraulics Laboratory
- Soil and Water Laboratory
- Irrigation Experimental Field
- Hydro-meteorological Station

Key Partners
- UNESCO-IHE, The Netherlands
- UNSA, France
- CIRAD, France
- UNU-INWEH, Canada
- UNU, Japan
- WRU, Vietnam
- K-Water, Korea
- DHI Water and Environment, Denmark
- BAPPENAS, Indonesia
- Tohoku University, Japan
- Kyoto University, Japan
- Yamanashi University, Japan
- TUBS, Germany
- IGES, Japan

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- Tingsanchali, Tawatchai
  D.Eng., M.Eng., Asian Institute of Technology
- Weesakul, Sutat
  D.Eng., M.Eng., Asian Institute of Technology

Outreach Activities
WEM also conducts customized training programs, short courses, seminars, and workshops by inviting experts and practitioners from the region and across the globe.
Due to the rapid rate of population growth, urbanization, poverty, climate change and geographical location, most of the Asian countries have become highly susceptible to natural disasters such as flood, cyclone, drought, earthquake, landslide, extreme temperature, heavy rain, epidemics, etc. It has been felt that there is limited capacity at global, regional and national levels in terms of knowledge base, skills training, long-term planning, emergency preparedness and policy development to respond to such severe disaster events. Consequently, this has given way to a new field of study at AIT to address these issues in innovative ways.

DPMM is an interdisciplinary academic program at AIT that aims to produce high quality of professionals for better contribution in disaster preparedness, mitigation and management. DPMM works closely with its partners/collaborators to enhance a much wider understanding and knowledge sharing from the international to local level. The program graduates will be ready to play leading roles in developing appropriate disaster management policies, strategies and techniques as well as in raising awareness in communities to protect people from the increasing disasters and helping build resilient communities.

Partners and Collaborators
- Asian Disaster Preparedness Center (ADPC)
- Coastal Resource Center (CRC), University of Rhode Island, USA
- Disaster Prevention Research Institute (DPRI), Kyoto University, Japan
- International Center for Urban Safety Engineering (ICUS), The University of Tokyo, Japan
- International Institute for Geo-information Science and Earth Observation (ITC), the Netherlands
- Japan Aerospace Exploration Agency (JAXA), Japan
- National Oceanic and Atmospheric Administration (NOAA), USA
- United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), Regional Office for Asia and the Pacific, Bangkok
- University of Washington (UW), International Tsunami Training Institute (ITTI), USA
- The Regional Integrated Multi-Hazard Early Warning System for Africa and Asia (RIMES)
- Télécoms Sans Frontières (TSF)
- The Asia Pacific Initiative (API) on Disaster Management and Humanitarian Assistance:
  - United Nations University, Japan
  - University of Hawaii, USA
  - University of Ryukus, Japan
  - Gadjah Mada University, Indonesia
  - TERI University, India
  - School of the Internet, Indonesia
  - Disaster Prevention Research Institute (DPRI), Kyoto University, Japan
Courses Offered

- Floods and Droughts
- Georisk Engineering
- Mitigation of Earthquake Disasters
- Tsunami Science and Preparedness
- Energy Technologies for Disaster Warning and Management
- Climate Prediction and Early Warning Systems
- Remote Sensing and GIS for Disaster Risk Management
- Geospatial Technology for Disaster Risk Mapping
- Human Conflicts and Humanitarian Emergency Management
- Health and Ecological Risk Management
- Coastal Resiliency and Natural Disaster Preparedness
- EIA Framework for Disaster Management
- Planning and Implementation of Disaster Emergency Management
- Community Based Disaster Risk Management
- Disaster Management in Urban Environmental Planning
- Managing Disasters
- Disaster Management & Humanitarian Assistance

Academic Program

- Doctoral Program
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  Prof. Ajit K Annachhatre
  Health and Ecological Risk Management
  
  Dr. Akiyuki Kawasaki
  Geospatial Technologies for Multidisciplinary Disaster & Water research
  
  Mr. A R Subbiah (RIMES)
  Climate Risk Management
  
  Mr. Aloysius Rego (ADPC)
  Disaster Management System
  
  Dr. Bhichit Rattakul (ADPC)
  Community Based Disaster Risk Management
  
  Dr. Cees van Westen (ITC)
  Landslide Hazards
  
  Prof. Chettiypappan Visvanathan
  Environmental Hazards Mitigation
  
  Dr. Dinand Alkema (ITC)
  Flood Hazards
  
  Dr. Jayaraman K V Potty
  Climate Prediction and Early Warning System
  
  Dr. Kiyoshi Honda
  Real-time Mapping and Simulation of Geological Processes
  
  Dr. Kyoko Kusakabe
  CBDRM & Gender Issues
  
  Dr. L A S Ranjith Perera
  Disaster Management in Urban Environmental Planning
  
  Dr. Lal Samarakoon
  Geospatial Technology for Disaster Management
  
  Dr. Manzul K Hazarika
  Disaster Risk Assessment
  
  Dr. Mokbul Morshed Ahmad
  NGO Management, Community and Rural Development
  
  Dr. Mukund Singh Babel
  Drought Forecasting and Management
  
  Dr. Nitin Kumar Tripathi
  Remote Sensing and GIS for Disaster Mitigation
  
  Dr. Noppadol Phien-wej
  Geological Hazards
  
  Dr. Oleg Shipin
  EIA & Disaster Management
  
  Dr. Roberto S Clemente
  Floods and Droughts
  
  Dr. Sutat Weesakul
  Tsunami and Coastal Engineering
  
  Prof. Sivanappan Kumar
  Climate Change Mitigation
  
  Dr. Vilas Nitivattananon
  Disaster Management in Urban Infrastructure Planning
  
  Prof. Jayant K Routray
  Regional and Rural Development Planning & Field Coordinator
  
  Dr. Pennung Warnitchai
  Earthquake Engineering & Field Coordinator

- Professional Masters’s Degree Program
  The target groups of Master’s Degree Program are those who are looking for a career in disaster preparedness, mitigation and management, along with the Faculty and Staff of universities and research institutions. The minimum entry requirement for this degree is a Bachelor’s degree from a recognized university. Total credit requirement of this course is 50 credits which include 28 credits course work and 22 credits thesis research. It is 22 months academic program distributed in 4 semesters.

- Masters’s Degree Program
  Those who are currently working in disaster-related institutions, and would like to expand their knowledge base to meet the present and future performance challenges are the target group of this degree. Credits earned in this degree can be transferred to regular master degree program in DPMM if the requirements are met. The entry requirement is a Bachelor’s degree plus 3 / 4 years work experience. Students will have to cover 33 credits plus a summer. This is 12 months academic program distributed in 2 semesters and 12 weeks internship in summer.

- Post-Graduate Certificate Program
  This program is designed for those with interest in disaster related activities. Students can transfer the credits to professional masters or regular master degree program in DPMM as well as to programs in appropriate fields of study. Bachelor’s degree is the minimum requirement of the course. It is a 12 credit course (4 courses of 3 credits each) with the duration of 15 weeks (1 semester).
OFFSHORE TECHNOLOGY AND MANAGEMENT

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Civil and Infrastructure Engineering Group

AIT’s Offshore and Technology & Management Program (OTM) is the first of its kind to provide regional post-graduate study in upstream oil and gas education, and is designed to combine application-oriented course work, field studies and internships into a curriculum from which graduates are equipped with the skills and knowledge-and-practice-readiness to work in the upstream sector of oil and gas industry. The one-year Professional Master of Engineering (PME) program in OTM is specifically designed to serve current professionals in the oil and gas industry that already have work experience and want to broaden their knowledge of the field while obtaining a master’s degree during a short leave of absence from their jobs. The two year MEng program follows a curriculum of one year of coursework, a 10 week internship and one year of thesis work, and is open to all students with relevant bachelors degrees.

Areas of Specialization
OTM offers three specializations in the upstream E&P sector of the oil and gas industry.
- Offshore Structural Design and Construction
- Oil and Gas Management

Admission Requirements
Admission for professional master degree requires at least 3 years of work experiences in the industry.

Partners
- Department of Mineral Fuels of Thailand (DMF)
- Petroleum Institute of Thailand (PTIT)

Collaborators
Academic Sector
- City University London (UK)
- Petronas University
- Chulalongkorn University (Thailand)

Industries
- Department of Mineral Resources of Thailand
- PTTEP of Thailand
- Chevron Thailand Exploration and Production Ltd.
- Schlumberger Overseas S.A.
- Total Exploration and Production Thailand
- Thai Oil Company Limited
- Mitsui Oil Exploration Co., Ltd.
- CUEL Limited
- Thai Nippon Steel Engineering and Construction Corp. Ltd.
- Palang Sophon Two Ltd.
- Bechtel International, Inc.
- Pearl Oil (Thailand) Ltd.
- Worley Parsons (Thailand) Ltd.
- Technip Engineering (Thailand) Ltd.
- Foster Wheeler International Corporation
- The Bangchak Petroleum Public Co. Ltd.
Courses Offered

- Workflow in Oil and Gas Operations
- Fundamentals of Geosystem Exploration
- Introduction to Offshore Structural Engineering
- Dynamics of Offshore Structures
- Fabrication and Marine Operation Engineering
- Design of Fixed Offshore Structures
- The Economics of Oil and Gas Projects
- Cost Management for Oil and Gas: EDP&D
- Advanced Steel Materials & Design for Offshore Structure
- Financial Management in Oil & Gas Industry
- Economics Risk and Decision Analysis for O&G Ind.
- Safety Aspects in Oil and Gas Industry
- Subsea Technology
- Computer Methods of Structural Analysis
- Finite Element Methods in Engineering
- Structural Dynamics
- Asset Management of Oil and Gas Facilities

Field Study

The curriculum structure is designed to combine course works in the class and practical study at field sites in order to enhance the student understanding and knowledge in bridging the gap between theory and practical works. Student can also benefit from the field trips for their future employment.

Minimum one trip for each semester is conducted to fabrication yard in order to directly watch the fabrication and load-out works of jacket and topside deck structures.

Internships

A number of oil and gas companies, partner universities and institutes either in Europe, Australia, Southeast Asia and Thailand can be selected for internship-place during the short-semester time from May to July. Petronas University, City University, London in UK, Thai Nippon Steel in Thailand, Singapore and Indonesia, CUEL in Thailand and others can be student destinations to acquire practical work experience.

Laboratories

Design and Computation Laboratories

The laboratories are facilitated with a number of computers and a number of softwares such as Schlumberger’s software package, SACS and in-house developed programs under the support of AIT-ACECOMS

OTM Reading Room

The room is equipped with latest offshore related magazines, books, computers, photocopy machine, table, sofa and pantry can be used as a place for discussion, reading and studying.
MECHATRONICS

The Mechatronics (MEC) field of study provides students with expertise not only as builders of components of engineering technologies but also system integrators. Mechatronics provides students with new insights into the field of automation through an integrated consideration of mechanics, electronics, and information technology. The curriculum is designed to provide multidisciplinary knowledge and to develop the ability to design mechatronics systems.

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Courses Offered

- Kinematics and Dynamics of Mechanisms and Robots
- Control Theory
- Sensing and Actuation
- Digital and Analog Circuit Design
- Artificial Intelligence and Neuro-Fuzzy Theory
- Pattern Recognition and Image Processing
- Automation Technology
- Microprocessor Systems
- Robust and Adaptive Control

Laboratory Facilities

The Mechatronics and Automation laboratory is well equipped with many PLC systems (S5, S7-200/300/400, INDRAMAT, BOSCH), distributed control systems (PCS7), operator panels (OP5, OP17/DP and OP35), a PC-based human machine interface package (WINCC) and networked field buses (PROFIBUS, INTER-BUS and SERCOS).

The lab has mobile robots (NOMAD, PIONEER 2), robot arms (CRS), an industrial robot (KUKA-KR15), a self-made open architecture CNC machine, CNC control systems (MTC200, SINUMERIK 8100/8400), image processing systems (DVT, MATROX) and FPGA’s (XILINX-1i VIRTEX PRO, ALTERA). Software such as SYNOPSYS IC Design, ANYSIM, ANSYS, ADAMS and many types of special sensors and actuators are also available for research use.

The Integrated Circuit Design laboratory gives students access to a wide variety of professional software applications including ANSYS, Orcad, ModelSim SE, Xilinx ISE, Synopsys, Leonardo Spectrum LS and Tanner (S-Edit for Schematic Capture, T-Spice and W-Edit for Simulation and L-Edit for Physical Layout). The laboratory’s facilities are used for analog and digital circuit design, microchip design and fabrication, MEMS, micro-actuators and micro-sensors design, computational electronics, and so on. Fabrication facilities are available through the National Electronics Technology Center and the National Science and Technology Development Administration located in nearby Science Park.

Mechatronics faculty and students work in close collaboration with industry and government sectors in the areas of industrial automation, robotics, control, system design and integration. Some examples of ongoing projects include a medical tele-analyzer, automated visual inspection systems, MEMS design, an autonomous flying robot, automating centrifuge machines, an autonomous underwater robot and automating crystallization processes.

Faculty and Staff Members

Afzulpurkar, Nitin
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Parnichkun, Manukid
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Assistant Professor
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M.Eng., Asian Institute of Technology

Manh, Hoang Hung
Senior Lab Supervisor
M.Eng., Asian Institute of Technology
MICROELECTRONICS AND EMBEDDED SYSTEM

Microelectronics (MIC) field of study addresses the increasingly critical demand for microelectronics expertise in the Asia-Pacific region’s rapidly growing industrial sector. Students study a balanced mix of technologies including analog and digital circuit design and processing-related topics such as failure analysis, as well as integrated circuit miniaturization and newly emerging specializations such as nanotechnology. The Microelectronics curriculum was designed and is constantly adapted in partnership with microelectronics companies and collaborating universities overseas.

Laboratory Facilities

The Integrated Circuit Design laboratory gives students access to a wide variety of professional software applications including ANSYS, Orcad, ModelSim SE, Xilinx ISE, Synopsys, Leonardo Spectrum LS and Tanner (S-Edit for Schematic Capture, T-Spice and W-Edit for Simulation and L-Edit for Physical Layout). The laboratory’s facilities are used for analog and digital circuit design, microchip design and fabrication, MEMS, micro-actuators and micro-sensors design, computational electronics, and so on. Fabrication facilities are available through the National Electronics Technology Center and the National Science and Technology Development Administration located in nearby Science Park.
Courses Offered

- Microelectronics Fabrication Technology
- Digital Integrated Circuit Design
- Advanced Semiconductor Device Theory
- Recording Head Technology
- Analog Integrated Circuit Design VLSI Design
- Micro-Electro Mechanical Systems
- Advanced VLSI System Design
- Optoelectronic Materials and Devices
- Mixed Signal IC Design
- Nanomaterials & Nanotechnology
- Failure Analysis of Devices
- Embedded Systems Architecture
- Embedded Systems Integration
- Real Time Systems

Faculty and Staff Members

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Punyasai, Chumnarn
M.Sc., University of Southwestern Louisiana, USA

Thanachayanont, Chanchana
Ph.D., Imperial College, London

Tuantranont, Adisorn
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Industrial and Manufacturing Engineering field of study prepares students for manufacturing management and decision support positions in industry and public sector, by equipping them with a broad range of decision making skills for a variety of applications. The IME curriculum reflects the objective of imparting fundamental knowledge to develop the ability to address complex industrial issues, emphasizing on how to design, run, control and optimize the production systems.

Laboratory Facilities

The Computer Integrated Manufacturing (CIM) laboratory provides hardware and software support for Industrial Systems Engineering. Many research activities have been undertaken in close collaboration with industry and government sectors in the area of Computer Aided Design (CAD), Computer Aided Manufacturing (CAM), Computer Numerical Control (CNC), Rapid Prototyping (RP) and Medical Technology. The CIM laboratory also provides specialized training and consultancy services in CAD, CAM, CNC machining, reverse engineering, rapid prototyping, packaging technology, flexible manufacturing systems (FMS), and development of a postprocessor for 5-axis CNC.

The CIM laboratory is equipped with production and training CNC machines including an EMCO TURN242 industrial production CNC lathe, an EMCO VMC200 CNC vertical machining center for universal production, a MAHO MH600E2 5-axis universal milling and boring machine, an EMCO compact 5 CNC, an EMCO F1 CNC, a LVD CNC press brake, a LVD water-jet cutting CNC, a ZOLLER tool presetting system, a Mondiale Gallic G-420 Industrial CNC lathe and an EMCO CNC training system. The available CAD/CAM software includes UNIGRAPHICS NX4, Master CAM 9.1, Mechanical Desktop 6, AutoCAD Inventor Series, SolidWorks 2005, CAM 2000, Mimics 6.3 and Magic 5.4.

The Metrology laboratory also provides hardware and software support for Industrial Systems Engineering. The Metrology Laboratory is equipped with measuring instruments including Zeiss CMM, Mitutoyo Profile Projector and a Taylor Hobson surface roughness tester, as well as LabVIEW hardware and software.
Courses Offered

- Deterministic Optimization Models
- Production and Operations Management
- Statistical Models and Design of Experiments
- Engineering Economy
- Quality Control and Management
- Industrial Project Management
- Multicriterion Decision Models
- Stochastic Decision Models
- Inventory and Logistic Management
- Scheduling and Sequencing
- Modeling and Simulation of Discrete Event Systems
- Reliability Theory and Maintenance
- Information Technology for Supply Chain Management
- Location Selection
- Warehouse Operations Management
- Advanced Manufacturing Processes
- Engineering Metrology
- Eco-Design and Manufacturing System
- Product Design and Development
- Industrial Packaging Design and Technology
- Flexible Manufacturing Systems
- Assembly Processes and Systems
- CAE/CAM
- Mold & Die Design
- Multi-axis Machine Tools

Faculty and Staff Members

Kachitvichyanukul, Voratas
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M.Eng., Asian Institute of Technology

Tabucanon, Mario T.
Professor
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Bohez, Erik L.J.
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Burgerlijk WerktuigKundig Electro-Technisch Ingenieur,
State University of Ghent, Belgium

Luong, Huynh Trung
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Parnichkun, Manukid
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Ph.D., M.Eng., University of Tokyo

Koomsap, Pisut
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Ph.D., Pennsylvania State University
M.Sc., University of Louisville

Adhikary, Dhruba
Lab Supervisor
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Industrial Systems Engineering Group

Nanotechnology is an interdisciplinary field and hence this programme is addressed to both engineering and science background students. The master of engineering program in nanotechnology focusing on advanced materials and nano-materials. It aims to prepare students to play an active role in shaping their career in the application of appropriate nanotechnology for the future growth of the economies in the region.

Laboratory Facilities

The Nanotechnology Laboratory consists of a chemistry lab, instrumentation lab, biology lab and electronics laboratory. The chemistry laboratory is equipped with standard chemical tables and hood for carrying out wet-chemical processing and several furnaces and humidity control chamber. The instrumentation room consists of equipments such as optical spectrophotometer, contact-angle measurement system, solar simulator, photocatalysis bench, gas-sensor test bench, CVD system, methanol reforming reactor, nanowire factory etc. The electronics lab is equipped with digital oscilloscopes, signal generators, power supplies, standard voltage and current meters as well as stocked with discrete devices for testing and research. Thin film deposition systems (dip-coating units) and custom ink-jet printing equipment is also available. The newly set up biolab consists of autoclave, centrifuge, incubation chamber, laminar airflow, incubator shaker, microscope etc. These facilities are used for teaching and research proposes at AIT.

Research Center/Sponsored Research/ Training

Nanotechnology Center of Excellence (CoEN)

Inaugurated in April 2006 the center is jointly supported by the Asian Institute of Technology and the National Nanotechnology Center (NANOTEC) of the National Science & Technology Development Agency (NSTDA), Ministry of Science and Technology (MOST), Royal Government of Thailand.

The Center of Excellence supports innovative research, education and training, increasing public and industrial awareness of nanotechnology in the region are the main objectives of this center. The research concept of the Center is to make use of inexpensive wet-chemical methods to fabricate innovative materials and futuristic device components. Activities of the CoE at AIT include, but not exclusively, research and development focused on the application of nanoparticles, nanomaterials, devices and nano sensors. The research encompasses working in “poor-man’s nanotechnology”
Courses Offered

- Self assembly and Molecular manufacturing
- Impact of Nanotechnology on the society
- Intellectual Property Rights for Technology Development and Management
- Solid State Physics for Nanotechnology
- Catalysis (including photocatalysis)
- Enzyme and DNA Technology
- NanoThermodynamics
- Nanomaterials and Nanotechnology
- Colloids and nanoparticles
- Microelectronics Fabrication Technology
- Microelectromechanical and Nanoelectromechanical Systems
- Characterization tools in Nanotechnology
- Membrane Technology in Water and Wastewater Treatment

Faculty and Staff Members

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Anal, Anil Kumar
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Faldt, Ake
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Ph. D., Imperial College, London

Gama, Francisco Miguel
Ph.D., Universidade do Minho, Portugal
M.Sc., Universidade Técnica de Lisboa, Portugal

Jabade, Siddharth
Ph. D., Indian Institute of Technology, Mumbai
The Computer Science (CS) field of study aims to meet the growing international demand for highly-skilled computer specialists by:

- Providing a curriculum that enables students to acquire the breadth required to function in the modern-day computer industry;
- Providing a state-of-the-art research environment;
- Encouraging students to specialize beyond the basic curriculum by initiating an individual research program;
- Fostering close relationships with both local industry and international organizations.

Area of Specialization

In addition to the traditional master’s program in computer science, the CS also offers a master’s degree in computer science with specialization in software engineering. The software engineering program is specially designed to fill the Asia-Pacific region’s need for highly-trained specialists in software development and the management of software development projects. Students in the program will:

- Receive in-depth training in the latest software development tools, techniques and trends;
- Learn the industry’s best practices for management of large software projects;
- Get experience on real problems in collaboration with public and private sector partners during internships.

The software engineering program is particularly aimed at students already having work experience in the software industry.
Courses Offered

- Data Structures and Algorithms
- Theory of Computation
- Web Application Engineering
- Computer Organization and Architecture
- Computer Networks
- Programming Languages and Compilers
- Operating Systems
- Computer Graphics and Animation
- Paradigms of Artificial Intelligence
- Personalization in E-Business
- Computer Security
- Advanced Topics in Internet Technology
- Computational Geometry and Applications
- XML: Foundations, Techniques and Applications
- Software Architecture Design
- Software Development and Quality Improvement

Laboratory Facilities

The CS laboratory facilities are organized around dedicated servers and desktop PCs, running Microsoft Windows and Unix operating systems, offering a full suite of engineering applications and software development tools to support the curriculum.

Through the A13 project, a broadband satellite link is available to Japan and networks worldwide. This link is primarily dedicated for research activities in the fields of internetworking, like the new generation of Internetworking such as IPv6, distributed education, video conferencing, and unidirectional routing.

The laboratories are associated with Thai National Grid Center. A powerful cluster computer is available for student use, providing resources for the parallel execution of large compute-intensive jobs and access to the nationwide computing grid.

The laboratories are sponsored by IBM, who, through its Academic Initiative, provides all students with free use of its Rational and WebSphere software products.

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The Information Management (IM) field of study is designed to prepare students to respond to four basic challenges confronting business, government and non-profit organizations today:

- Planning the effective use of information and communication technologies
- Developing corporate and government policies to maximize the benefits resulting from the widespread use of these technologies;
- Improving the strategic management of information resources
- Increasing the productivity and creativity of managers and executives who work with information resources.

Laboratory Facilities

The laboratories for IM are shared with the Computer Science field of study. The labs offer a complete selection of dedicated servers and desktop PCs running Windows and Unix. A variety of management software is available to support student coursework and research.

The laboratories are also sponsored by IBM, who, through its Academic Initiative, provides all students with free use of its Rational and WebSphere software products.
Faculty and Staff Members

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Nicole, Olivier  
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M.Sc., University Paris XIII  

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M.Sc., University of Paris VI  

Courses Offered

- Database Design
- Knowledge Management and Information Retrieval
- Decision Support Technologies
- Information Systems Development and Management
- E-Business Development and Technology
- Human-Computer Interaction
REMOTE SENSING AND GEOGRAPHIC INFORMATION SYSTEMS

Information and Communications Group

The Remote Sensing & Geographic Information Systems (RS&GIS) field of study focuses on the use of geoinformatics technologies such as Remote Sensing (RS), Geographic Information Systems (GIS), and Global Positioning Systems (GPS) for the planning, monitoring, and management of environmental and natural resources utilization at the country, regional, and global level.

Areas of Specialization

Geoinformatics comprising of Remote Sensing (RS), Geographic Information System (GIS) and Global Positioning System (GPS) provides extremely useful tools for environmental and natural resources management. They are widely recognized as supporting tools for the planning, monitoring, and management of the appropriate utilization of resources at the country, regional and global level.
Courses Offered

- Geographic Information Systems
- Remote Sensing
- Aerospace Technology
- Advanced Mapping Techniques
- Digital Photogrammetry
- Digital Image Processing in Remote Sensing
- Advanced Remote Sensing
- Microwave Remote Sensing
- Spatial Analysis Method in GIS
- Advanced Application Development in GIS
- Remote Sensing in Data Analysis

Laboratory Facilities

RS&GIS provides excellent laboratory facilities for teaching and research projects, including:

- Digital Image Processing for Remote Sensing
- GIS Laboratory
- Asian e-Learning Project Experimental Laboratory
- Geoinformatics Center Laboratory
- Digital Photogrammetry
- Facilities for Sensor Web GIS
- Facilities for RFID & Internet GIS

RS&GIS maintains an extensive computing infrastructure for its students, including network file servers for shared access to data and publicly-accessible Web servers for scientific communication.

The field of study also maintains a very good archive of over 600 scenes of SPOT, Landsat-TM, NOAA, ADEOS, ERS-SAR and JERS-SAR satellite imagery to serve students in their research and thesis studies. Other data such as regional topographic, land use, soil and geology maps, as well as aerial photographs, are also available.

The RS&GIS library provides students with specific books, journals, computer manuals and open source software.

Faculty and Staff Members

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Phonekeo, Vivarad
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Samarakoon, Lal
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Souris, Marc
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A lack of efficient telecommunications networks and the disparity between rural and metropolitan areas in telecommunications capacity are some of the most serious impediments to sustainable development and growth in the Asia-Pacific region. The Telecommunications (TC) field of study aims to foster national development and enhance economic productivity by educating students in the design, implementation and deployment of telecommunications networks and related applications.

**Dual Degree Program**

In addition to the standard program, TC offers dual degree programs in cooperation with two European universities. Students in a dual degree program receive two master’s or doctoral degrees, one from AIT and one from the partner university.

*Master Degrees:*
- Telecom SudParis, France
- Nice University, France

*Doctoral Degrees:*
- Centre for Wireless Communications, University of Oulu, Finland

*Professional Masters:*
- This was launched in 2007 for industry professionals to upgrade their knowledge. 1st batch was sponsored by EVN, Vietnam.

**Partnerships**

Students in Telecommunications have many opportunities to collaborate with specialists from industry, non-governmental organizations and other universities.

1. TSF - Télécoms Sans Frontières is a United Nations non-governmental organization which provides emergency telecommunication services during disaster response efforts. Students in Telecommunications may volunteer to work with TSF in real disaster situations.

2. Telecommunications hosts a certified training center for Nokia Symbian OS Mobile Application Development.

Telecommunications also maintains active research and student exchange collaborations with a number of universities around the world:
- Center for Personal Communication (CPK), Aalborg University, Denmark
- Helsinki University of Technology (HUT), Finland
- Brunel University, UK
- University of Alberta, Canada
- University of Tokyo, Japan
- University of Saskatchewan, Canada
- University of Texas-Dallas, USA
- Mie University, Japan
- National Institute of Information and Communications (NICT), Japan
- Yokosuka Research Park (YRP), Japan
- Tohoku University, Japan
Courses Offered
- Telecommunication Networks
- Signals, Systems and Stochastic Processes
- Data Communications
- Teletraffic Engineering
- Multimedia Communications and Systems
- Cellular Mobile Systems
- Network Planning
- Error Control Coding
- Cellular Network Planning
- Digital Modulation Techniques
- Switching Systems
- Fiber Optic Components and Systems
- Satellite Communications
- Digital Signal Processing
- Network Quality of Service
- Optical Networks
- Optimization for Communications and Networks
- Advanced Wireless Communication Systems
- Advanced Signal Processing for Wireless Communications
- Digital Transmission Technologies
- Discrete-Time Statistical Signal Processing
- Multiuser Detection
- UMTS/WCDMA Radio Access Network Planning
- Network Simulation and Modeling Using NS2 (Network Simulator 2)
- Mathematics for Telecommunications
- Probability Theory

Laboratory Facilities
The telecommunications laboratories are well equipped in the areas of transmission, switching, cellular network measurement and planning, wireless communications, optical fiber communications, broadband networks and data services. Nokia Telecommunications is a strong supporter of the telecommunications laboratories. Their donations include a large transmission/switching system composed of the DX220 and DX210 ISDN switching systems and a 3-node SDH-network. They have also donated the Nokia Wireless Network Planning tool (NPS/X) and Nokia Measurement Systems (NMS/X) for optimization of GSM wireless networks. In addition to the above there are high performance computing facilities available in the computer laboratories.

Faculty and Staff Members

Ahmed, Kazi M.
Professor
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Suzuki, Ryutaro
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Sato, Katsuyoshi
M.Eng., Tohoku University, Japan

Yazdandoost, Kamya Yekeh
Ph.D., M.Sc., Pune University
The Information and Communications Technologies (ICT) interdisciplinary program provides students with the opportunity to master a breadth of knowledge in a wide range of technologies, including:

- Information infrastructure (telecommunication networks, transmission technologies, switching and routing);
- Information technology (operating systems, programming languages, information storage and retrieval);
- Applications (e-services, knowledge creation and knowledge dissemination);
- Integration of communications, information services and applications with a national ICT infrastructure.

By educating students in this broad array of technologies, the ICT program promotes the emergence of effective national ICT infrastructures for accelerated social and economic development. ICT graduates at AIT are prepared to serve the varied needs of the higher-education, public and private sectors, as well as to play a leading role in the sustainable development of the region and its integration into the global economy.
Courses Offered

- Information and Communication Technology Applications: Users and Producers
- Human-Computer Interaction
- Design and Delivery of Web Education
- Designing Web Applications for Rural-Sector
- Strategies for ICT Development
- E-Business Development & Technologies
- Telecommunication Networks
- Signals and Systems
- Wireless Communications
- Satellite Communications
- Digital Transmission Technologies
- Data Communications
- Multimedia Communications & Systems
- Interactive Transmission over IP Networks
- Computer Organization and Architecture
- Database Design
- Computer Networks
- Computer Security
- Web Application Engineering
- Software Architecture Design
- Software Development and Quality Improvement
- XML: Foundations, Techniques and Applications
- Knowledge Management and Information Retrieval
- Network Planning
- Cellular Network Planning
- Tele-traffic Engineering
- Switching Systems
- Routing and QOS
- Network Security

Laboratory Facilities

Students of ICT have full access to the laboratories in CS, IM, Telecommunications, and RS&GIS to support hands-on training.

Faculty and Staff Members

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M.Sc. Eng., Leningrad, Russia

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M.Eng., Asian Institute of Technology

Kovalainen, Mikko
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Kurhila, Jaakko
Assistant Professor
Ph.D., M.Sc., Helsinki, Finland
**The Professional Masters’ program** and curriculum is designed to deliver an exceptional educational experience that include first-hand and close interactions with the relevant industries whereby students are given the opportunity to correlate current as well as advanced theoretical concepts gained in class to practical industrial dimensions in real time. Students are also able to benefit from the University’s highly experienced faculty academicians in addition to their strong relationships with the respective industries through prospective internship programs. Currently, the Professional Masters’ program is offered in Vietnam and Thailand and may include internship positions.

**Program Delivery**

The programs are conducted throughout the week: weekday (evenings) and weekends (full day).

**Professional Masters offered by SET**

1. Professional Masters in Geo-System Exploration and Petroleum Geo-Engineering (Vietnam)
2. Professional Masters in Geo-Technical Engineering and Management (Vietnam)
3. Professional Masters in Hard Disk Drive Engineering Technology (Western Digital) (Thailand)
4. Professional Masters in Industrial and Supply Chain Management (Vietnam)
5. Professional Masters in Project Management in Construction (Vietnam)
6. Professional Masters in Telecommunications Technology and Management (Vietnam)

**Requirements**

Potential Professional Masters students encompass industry professionals who aspire to advance their qualifications as well as develop authoritative expertise. The Professional Masters program requires a four-year bachelor’s degree with a minimum of three years’ working experience. As the education medium is conducted in the English Language, students are required to demonstrate their proficiency in the language as follows:

| IELTS/ AIT-EET (AIT Assessments) | 4.5 |
| TOEFL | Paper-based | 500 |
|       | Computer-based | 173 |
|       | Internet-based | 61 |
Academic centers connect the school with the world outside academia. The academic centers in the School of Engineering and Technology are:

**Asian Center for Engineering Computations and Software (ACECOMS)**

ACECOMS carries out the research and develops computer software for engineering applications. With 29 satellite centers in 21 cities in Asia and other regions, ACECOMS also conducts different training for the effective use of the latest computing technology.

Visit ACECOMS: http://www.acecoms.ait.ac.th/

**Asian Center for Soil Improvement and Geosynthetics (ACSIG)**

ACSIG provides a strategic location for advanced technological education, researches and outreach activities on the application and effective utilization of ground improvement techniques.

Visit ACSIG: http://www.set.ait.ac.th/acsig/

**Asian Center for Transportation Studies (ACTS)**

ACTS activities include modules on intelligent transportation systems, traffic simulation, transport logistics, urban road safety and road safety audit.

Visit ACTS: http://www.set.ait.ac.th/acts/

**Geoinformatic Center**

The Geoinformatic Center is dedicated to the development and promotion of remote sensing research and activities in the Asia-Pacific region by sharing satellite data, research results and experiences with researchers in the region.

Visit Geoinformatic Center: http://www.geoinfo.ait.ac.th/
Habitech Center

Habitech activities include research and outreach activities such as training in production and construction, provision of services associated with projects implemented by various organizations, agencies or the private sectors.

Visit Habitech: http://www.habitech-international.com/

Regional Network Office for Urban Safety (RNUS)

RNUS is a collaborative center jointly operated by STE and the International Center for Urban Safety Engineering (ICUS), the University of Tokyo for the promotion of urban safety engineering utilizing advanced engineering technologies including remote sensing and GIS.

Visit RNUS: http://www.set.ait.ac.th/rnus/

Thailand Accident Research Center (TARC)

TARC is an offspring of MOTC’s Road Safety Master Plan acknowledging the lack of information on accidents in Thailand and the need to establish TARC. The center provides academic backup and a base for road safety research.

Visit TARC: http://www.tarc.ait.ac.th/

AIT Center of Excellence in Nanotechnology (COEN)

The Center of Excellence in Nanotechnology is jointly supported by Thailand’s Nanotechnology Center (NANOTEC) and AIT to cultivate and foster multidisciplinary activities including research and education in the applications of nanotechnology in the developing world.

Current research focus is on dye-sensitized solar cells, piezoelectric devices, gassensors, bio-diagnostic tools, specific microbial sensors, heavy metal ion sensors for waste water, environmental mitigation through visible light photocatalysis, self-organization of nanoparticles, and layer-by-layer growth from colloidal particles etc.

Visit CoE: http://www.nano.ait.asia/
Civil & Infrastructure Engineering Group

Emeritus Professor
Das Gupta, Ashim
Balasubramaniam, Aramugan S.
Jones, John Hugh
Karasuadi, Pisidhi

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Kanok-Nukulchai, Worsak

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Clemente, Roberto S.
Charoenangam, Chotchai
Hadikusumo, B.H.W.
Phien-wej, Noppadol
Warnitchai, Pennung

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Kanitpong, Kunnawee
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Shrestha, Sangam

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Jourdain, Damien
Kato, Hironori
Kawasaki, Akiyuki

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Articharte, Sarunphong
Asavadorndeja, Pornpong
Athchanarongom, Suwat
Boonpramote, Thitisak
Chan-Urai, Polshom
Dimmitt, Nicholas J.
Johan, Johny
Kunatippapong, Burin
Likhithuangsilp, Weerasak
Minato, Takayuki
Nopayak, Watcharinpan
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Pheeraphan, Thanakorn

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Sahamitmongkol, Rakipong
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Tachapaisalkul, Wiboon
Tharachai, Theerathon
Udomranu, Chaermchai
Wan, Ng Eng
Widjaja, Joko H.
Woodward, Mike

Information and Communication Group

Information and Communication Group

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Luong, H. Trung
Pamichkun, Manukid

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Ekpanyapong, Mongkol
Koomsap, Pisut

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Adjunct Faculty
Israsena, Pasin

Adjunct Faculty
Anutariya, Chutiporn
Erke, Tapio
Haddawy, Peter
Issariyakul, Teerawat
Krishna, Iyanki. V. Murali
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Raghavan, Venkatesh
Suebnukarn, Siriwan

Affiliated Faculty
Hazareica, Manzul K.
Phonekeo, Vivad
Samarakoon, Lal
Tipdecho, Taravudh
INFORMATION FOR STUDENTS

Degree Programs
An AIT degree represents the completion of a rigorous course of study and so much more. Students develop skills on which to build continuing education and useful careers. One credit of coursework means 15 hours of lecture or 30 to 45 hours of practical work per course. One credit of research work has an equivalent number of contact hours. On average, students take 12 credits (a minimum of 6 and a maximum of 15 credits) during the regular semester and not more than six credits during the summer session.

Doctoral Degree
Full-time doctoral students are required to take a minimum of 84 credits that include at least 18 credits of coursework, including six credits of special study and 66 credits of thesis. Doctoral students are advised by a Program Committee of at least three members who are responsible for the conduct of the examination for advancement to candidacy and final examination. An external examiner is appointed for each candidate to provide an independent assessment of the research dissertation. Full-time doctoral candidates must complete all the requirements for the degree within five years after advancement to candidacy.

Non-resident doctoral students are required to spend at least one semester in residence at AIT, to be registered at all times until the completion of the doctoral program. Non-resident doctoral students must, during the period of the program, be in active contact with professional practice in fulfilling the coursework and dissertation requirements.

Master’s Degree
A master’s student requires 48 credits to complete the program. Students are given two options, either to pursue a Thesis Option or a Research Option. Students pursuing a master’s program under a Thesis Option are required to take a minimum of 24 to 27 credits of coursework and 24 to 21 credits of thesis. For the Research Option, students enroll for a total of 38 credits of coursework and 10 credits of research study.

Bachelor Degree
AIT takes pride in offering a new, four-year Bachelor of Science in Engineering (B.S.E.) and the Bachelor of Science in Engineering (B.Sc.) Program. The undergraduate programs are ideal for those aspiring to an international career in engineering.

Non-Degree Programs
Other than doctoral and master’s degrees, the institute offers non-degree certificate programs to those who want to prepare for a graduate degree or a diploma to those who want advanced training on specific selected topics. To qualify for diploma, a candidate must satisfactorily complete a minimum of 24 credits of coursework, including six credits of special study leading to the presentation of a project report in a period of one year (two semesters).

Academic Timetable
The AIT academic calendar consists of two regular semesters, beginning in January and August, and a summer session, beginning in June. While doctoral students can enter in either August or January, master’s students normally enter in August. Many programs, however, do offer a secondary master’s intake in January. A master’s program is completed in four semesters plus one summer session (22 months). Some advanced students may complete the requirements of the degree after the third semester with the consent of his/her advisor and program committee. A doctoral program covers six semesters or a minimum of three years.

Applicants are encouraged to submit applications at least six months before the start of the semester, especially if financial assistance is needed.
INFORMATION FOR STUDENTS

Study Cost

Students in full-time attendance are required to pay a registration fee of 20,000 Baht per semester and a tuition fee of 14,000 Baht per credit. Tuition fees assume the following minimum credit requirements and number of semesters: doctoral (84 credits/6 semesters), master’s (48 credits/4 semesters), diploma (24 credits/2 semesters), and certificate (9-12 credits/1 semester).

<table>
<thead>
<tr>
<th>Study Cost (Fixed Rate in Thai Baht)</th>
<th>Bachelor’s Program</th>
<th>Master’s Program</th>
<th>Diploma Program</th>
<th>Certificate Program</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(36 Months)</td>
<td>(48 Months)</td>
<td>(24 Months)</td>
<td>(12 Months)</td>
</tr>
<tr>
<td>Registration Fee @20,000 Baht per Semester</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thai Baht</td>
<td>120,000</td>
<td>80,000</td>
<td>40,000</td>
<td>20,000</td>
</tr>
<tr>
<td>US Dollars</td>
<td>3,094</td>
<td>2,063</td>
<td>1,031</td>
<td>516</td>
</tr>
<tr>
<td>Tuition Fee @14,000 Baht per Credit</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thai Baht</td>
<td>1,176,000</td>
<td>672,000</td>
<td>336,000</td>
<td>168,000</td>
</tr>
<tr>
<td>US Dollars</td>
<td>30,325</td>
<td>17,329</td>
<td>8,664</td>
<td>4,332</td>
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<tr>
<td>Sub-Total</td>
<td>1,296,000</td>
<td>752,000</td>
<td>376,000</td>
<td>188,000</td>
</tr>
<tr>
<td>(Living/ Accommodation/ Other Expenses @11,500 Baht per month)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thai Baht</td>
<td>414,000</td>
<td>253,000</td>
<td>138,000</td>
<td>57,500</td>
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<tr>
<td>US Dollars</td>
<td>10,676</td>
<td>6,524</td>
<td>3,559</td>
<td>1,483</td>
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<tr>
<td>Total</td>
<td>1,710,000</td>
<td>1,005,000</td>
<td>514,000</td>
<td>245,500</td>
</tr>
</tbody>
</table>

Financial Support

AIT offers a limited number of financial awards in the form of scholarships and fellowships for the master’s and doctoral programs, on a highly competitive basis, and for those who can show proof of financial need during their study at AIT. Students are expected to supplement the AIT support with their own resources.

Full Scholarships

AIT scholarships are provided by AIT’s partners: governments, international funding agencies, foundations and the private sector. Selection of recipients for scholarships is subject to partners’ conditions based on field of study, nationality and/or gender. Scholarships may cover tuition fees and in some cases also cover living expenses.

Fellowships

Fellowships for the master’s and doctoral programs are awarded to assist bright but financially needy students. Fellowships normally do not cover registration fees, associated fees, incidental expenses or living costs, which are the responsibility of individual fellows. Fellowship offers are not transferable to other applicants.

AIT Fellowships are offered based on merit or demonstrated financial need. Under this scheme, the students are charged tuition fees for the credits not covered by the fellowship in semesters immediate to admission, and AIT covers the assistantship credits granted in later semesters.

Royal Thai Government (RTG) Fellowships are offered to qualified applicants from Thailand and Thailand’s supported neighboring countries for all fields of study at AIT in the form of grants that cover tuition and registration fees for up to 100% of the study cost at AIT. Applicants must meet the following minimal CGPA requirements: for master’s scholarships and fellowships, the undergraduate CGPA must be 2.75 or above. For doctoral fellowship grants, applicants should have undergraduate CGPA of 3.00 or above and graduate CGPA of 3.50 or above.

Partnership with Other Universities

AIT has partnership agreements with a number of leading universities in Asia, in Europe and around the world. These partnerships provide SET students with opportunities for student exchange, two-stage degree programs, dual-degree programs and special student enrollment schemes.
WHEN APPLYING... 

The School of Engineering and Technology seeks applicants who show demonstrated commitment to and enthusiasm for intellectual growth.

To be eligible for admission to the degree and non-degree programs, a candidate should:

1. Hold a bachelor’s degree (normally from a four-year program) or its equivalent in an appropriate Engineering or related field as specified by the fields or area of study;
2. Hold the degree from an institution of recognized standing;
3. Have undergraduate grades significantly above average;
4. Have satisfactory physical and mental health to pursue academic studies at the graduate level; and
5. Possess an acceptable level of English language proficiency.

When applying for admission, applicants must submit:

1. AIT application form;
2. Two letters of recommendation;
3. An official attested transcript of undergraduate degree;
4. TOEFL (Internet-based: 61, Computer-Based: 173, or Paper-Based: 500), IELTS (4.5) or a Certificate of English proficiency; and
5. An essay on a possible research topic (for doctoral applicants only).

For application forms, please contact:
Admissions and Scholarships Office
Asian Institute of Technology
P.O. Box 4, Klong Luang
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Telephone: +66-2-5245031, +66-2-5245033
Facsimile: +66-2-5246326
E-mail: admissions@ait.ac.th
Web site: http://www.ait.ac.th/

Apply online or download application materials
Online application is simple at http://www.ait.ac.th/applyonline/
or you may download and print application materials from http://www.ait.ac.th/admissions/forms.html

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