

Master of Computer Science

Introduction

It is expected that the graduates Master of Computer Science Study Program have competency as a leader with vision and future insight, able to design and apply information technology that will improve work performance of organization.

It emphasizes on following aspects:

1. Advise
Able to provide an input about products, services, strategy and structure organization, particularly regarding to technical competency of Information and Communication Technology (ICT).
2. Value/Assess
Doing research on products, copy rights, facilities and human resource in context of organization business and the possibility of new potential business.
3. Vision
Building a vision about possible technology and its impact to organization business area, and how to use the benefit with its changes.
4. Communicate
Communicating organization's vision to the staff in supporting the change and increasing organization's profit.
5. Manage
Managing the development and operational of ICT division to support utilization of technology for organization and preparing the expert to new technology.
6. Innovate
Get involved into research and product development directly, especially for creative process and its utility evaluation.

Supplies for the Post-Graduate Study Program consist of two aspects: information technology and business knowledge where it is expected that the graduates will have a commanding view to the process and performance of business corporate. The supply focuses on information technology referring to research, management and latest technology update.

Process management in development of information technology is the core of subject given, including IT Services, IT Strategic Planning, Enterprise architecture, Advanced Software Engineering, and Information Technology Project management. Technical aspect which has become new trend, such as Service Oriented Architecture, Big data analytics, Cloud Computing & Mobile Technology and Computer security turn into varieties in delivering the materials.

Vision

A world class ICT Graduate Program which delivers visionary and innovative leaders in the advancement of ICT knowledge and applications.

Mission

The mission of Master of Computer Science are to:

1. Preparing outstanding visionary ICT leaders for industry and government which are capable in facing the challenge of the future in Information Communication Technology.
2. Providing an excellent advanced education/research and professional services in information technology, recognized globally, that attracts and retains a talented and creative student body and faculty.

3. Generating innovative technologies leading to new products and improved business processes, thus enhancing the quality of life.

Program Objective

The objectives of the program are:

1. To provide students with ICT best practices in order to increase their competitive advantage by applying the leading technologies;
2. To provide students with advanced knowledge in innovation, technology, and leadership in order to pursue efficient as well as effective business processes;
3. To provide students with international experience in research and development in order to improve humanity as well as environmental aspects.

Student Outcomes

After completing the study, graduates are:

1. Able to propose solutions to the problems with implementing the Information Technology in a dynamic and complex environment in the form of innovative work tested through the research and development of information technology in accordance with scientific study and professional practice;
2. Able to develop software application to solve the problems with Information Technology in the complex and dynamic environment using Scientific research approach;
3. Able to develop methods and Information Technology using inter and multidisciplinary research approaches to produce tested innovative work and commercialized applicative potential in the information technology field;
4. Able to manage Information Technology project as well as evaluate Information Technology Infrastructure effectively based on good governance;
5. Able to develop science and Information and Communication Technology using artificial intelligence method to produce innovative products that can be applied in various fields;
6. Able to develop science and Information and Communication Technologies using governance method with security system of the infrastructure network to produce blueprint strategy and Information and Communication Technology in an organization with a service-oriented approach.

Prospective career of the graduates

Master of Master of Computer Science graduates have the opportunity to fill positions at prestigious firms such as IT Leader, IT Innovator, IT Business Creator, IT Consultant, IT Solution and System Integrator, IT Project Manager, IT Lecturer, Chief Analytics Officer, Chief Data Officer, Data analyst, Data scientist, Data architect, Data engineering.

Curriculum

To achieve the vision of "world class graduate program", it is necessary to provide subjects with conceptual and fundamental content as well as practical that refers to an International standard curriculum, as well as courses that are filled with Information Technology applications. In addition, the "in continuous pursuit of innovation and enterprise" vision is realized by regularly revising the curriculum used primarily to anticipate the development of the labor market and the rapidly expanding knowledge in information technology. Some references are used in the determination of current technology trends, such as Gartner, Inc. on Top 10 Strategic Technology Trends for 2015 and IEEE-CS Top Technology Trends 2015. The two studies suggest that Cloud Computing, Big Data, Internet of Thing, and Mobile Computing are four technological trends by 2015. Therefore, the MTI Study Program has

developed curriculum in order to follow the trend of this technology. In addition to the government regulations that require publication for every graduate of the S2 program, the Master of Computer Science Study Program has developed a curriculum to ensure that each student can create and have scientific publications before graduating with a research enrichment approach for each course. In addition, based on the results of focus group discussion with students it is found that the potential of new students coming from industry that quite a lot come from various areas spread. They are constrained by time and place because they have to work during college so it is less flexible if they have to come to campus every day. So the Master of Computer Science Study Program develops a curriculum with a more flexible learning system which does not reduce the quality of learning by using blended learning system.

Course Structure

SEMESTER 1

1st Period

Course		SCU
COMP8041	Internet of Things (IoT)	4
COMP8042	IT Risk Management and Audit	4
Total SCU		8

2nd Period

Course		SCU
RSCH8079	IT Research Methodology	4
Streaming : Data Science		
COMP8043	Machine Learning	4
Streaming : Information Security Management		
CPEN8005	Network and Cyber Security	4
Total SCU		8

SEMESTER 2

1st Period

Course		SCU
RSCH8080	Pre-Thesis	1
Streaming : Data Science		
COMP8044	Deep Learning and Its Applications	4
COMP8045	Optimization and Computational Intelligence	4
Streaming : Information Security Management		
CPEN8006	Enterprise Network	4
COMP8046	Fundamental of Cyber Security	4
Total SCU		9

2nd Period

Course		SCU
COMP8035	Big Data Analytics	4
Streaming : Data Science		
COMP8047	Business Intelligence and Analytics	4
Streaming : Information Security Management		
COMP8036	Services Oriented Architecture	4
Total SCU		8

SEMESTER 3

1st Period

Course		SCU
COMP8037	IT Strategic Planning & Enterprise Architecture	4
RSCH8081	Writing Paper & Colloquium Thesis	2
Total SCU		6

2nd Period

Course		SCU
RSCH8082	Thesis	3
Total SCU		3
Cumulative SCU		42