

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

An ICT graduate program that fosters a world class environment for ICT leaders to thrive intellectually and professionally in building and serving the nation.

Mission

The mission of Master of Computer Science are to:

1. Educating BINUSIAN through ICT curriculum that meets global standards and industrial needs to promote continuous improvement of science and technology
2. Generating innovative ICT technologies through high impact research to resolve the nation's issues
3. Fostering BINUSIAN as lifelong learners through self-enrichment to stay abreast with advancement in ICT technology by leveraging on available resources
4. Empowering BINUSIAN with knowledge and skills in ICT technology to contribute in improving society's 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 by implementing 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 applications 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 Information Technology 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 MTI 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 MTI 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

Course	SCU
COMP8041041 Internet of Things (IoT)	4
COMP8042041 IT Risk Management and Audit	4
RSCH8079041 IT Research Methodology	4
Streaming: Data Science	
COMP8043041 Machine Learning	4
Streaming: Information Security Management	
CPEN8005041 Network and Cyber Security	4
Total SCU	16

SEMESTER 2

Course	SCU
RSCH8080041 Pre-Thesis	1
COMP8035041 Big Data Analytics	4
Streaming: Data Science	
COMP8044041 Deep Learning and Its Applications	4
COMP8045041 Optimization and Computational Intelligence	4
COMP8047041 Business Intelligence and Analytics	4
Streaming: Information Security Management	
CPEN8006041 Enterprise Network	4

Course	SCU
COMP8046041 Fundamental of Cyber Security	4
COMP8036041 Services Oriented Architecture	4
Total SCU	17

SEMESTER 3

Course	SCU
ISYS8037041 IT Strategic Planning & Enterprise Architecture	4
RSCH8081041 Writing Paper & Colloquium Thesis	2
RSCH8082041 Thesis	3
Total SCU	9
Cumulative SCU	42