Mobile Application & Technology

Introduction

Mobile technology is a growing trend technology that provide the infrastructure and technology for all businesses to ride on. With mobile technology, the future is borderless. Mobile Application & Technology (MAT) program is designed to provide students with the knowledge and skills in mobile computing, communications and entrepreneurships. The aims of Mobile Application & Technology program to provide students with an understanding of mobile/wireless technologies, how these technologies are utilized and integrated to meet specific business needs. The course builds a solid foundation of software development skills and introduces the specific skills needed for developing mobile/wireless applications. Students will also gain the necessary understanding of current technologies and architectures that provide the network and communications infrastructure for mobile enabled enterprise computer systems, planning, management and how to build a mobile enterprise. Students will also develop skills in the design of modern distributed software systems, using appropriate technologies, architectures and techniques, and in the advanced network technologies supporting the upper layers, together with their planning, management and security. The structure of the course allows students to gain valuable practical experience in building software systems, and also apply knowledge in mobile game creative design.

The MAT program was found in September 2011, under BINUS UNIVERSITY, it became one of the programs under the coordination of School of Computer Science.

Vision

A program of choice in Mobile Application and Technology, which specializes in developing creative mobile software solutions for businesses, is recognized internationally, champions innovation and delivers graduates with international qualifications.

Mission

The mission of Mobile Application & Technology Program is to contribute to the global community through the provision of world-class education by:

1. Educating student in the fundamental skills, knowledge, and practice of recent mobile technologies and architectures, wireless technologies, mobile software development, and game design.
2. Conducting research and providing mobile application and technology professional services with an emphasis on the application of knowledge for society's development.
3. Sharing the application of knowledge related to mobile application & technology with a view to Indonesians' and the international community quality of life.
4. Influencing students & lecturers to be creative, value-adding and competitive at an international level in mobile application & technology, by creating a suitable environment.
5. Preparing students as smart and skilled mobile application & technology professionals, leaders, and entrepreneurs in the global market and/ or to continue in related disciplines.

Program objective

The objectives of the program are:

1. To provide students with a solid foundation in computer science knowledge, and especially mathematical, algorithm principles, that are needed for mobile software solutions.
2. To provide students with skills to apply design and development principles in the construction of recent mobile technologies, such as architectures, wireless technologies, mobile software development, and game design.
3. To prepare students with abilities to keep up-to-date with the latest Mobile Application and Technology trends.
4. To prepare students with abilities in problem solving, good communication skills and ethics to be able to work as an individual or in a team in an IT environment.

Graduate Competency

At the end of the program, graduates will be able to:

1. Apply knowledge and understanding of mathematical concepts, principles and theories relating to computer science knowledge.
2. Demonstrate knowledge and understanding of algorithm concepts, principles and theories relating to mobile solution knowledge.
3. Classify problems and to apply design and development principles for specific problems.
4. Plan strategies and design mobile solution development.
5. Depict trend mobile technologies in the future.
6. Construct a solution by applying latest mobile application and technologies.

Prospective Career of the Graduates

After finishing the program, the graduate of Mobile Application & Technology Program could follow a career as:

1. Mobile Software Engineer/Developer
2. Mobile Games Designer & Mobile Games Developer
3. Mobile Business Application Developer
4. Mobile User Experience Designers
5. Mobile User Interface Architect
6. Information Analyst in Decentralized Businesses
7. IT Support/Consultant
8. Lecturer/Trainer

Curriculum

The present curriculum used in the Mobile Application & Technology program has been developed in line with the National Curriculum. Also, the local content has been developed in line with the Computer Science Curriculum standard of ACM (Association for Computing Machineries), several local and foreign universities, mobile technologies and market trends, so that the graduates of the Mobile Application & Technology program are expected to be able to face competition at both a national and international level.

Generally, the subjects of the curriculum 2014 are divided into these following groups of subjects:

Mathematics Group (Science)

The objective of this group is to provide an understanding of mathematics as one of the principal foundations in computer science. Another objective is to give an understanding of scientific methodology (data collection, hypothesis, research, analysis) in problem solving.

Character Building Group (Professional Practices)

The objective of this group is to develop the personal strengths of the student and to provide him or her with a professional character, professionalism in their field, management skills, oral and written communication skills, understanding of business ethic, ability to work as a team, and to develop a "Binusian" Character.

Core Group

The objective of this group is to provide grounding in Mobile Application Technology program through practice as well as applied theory which are required by business both now and in the future. The subjects that are included in this group are programming, algorithm design and analysis, software engineering, databases, computer graphs, multimedia, computer and human interaction, operation system, mobile device architecture, and mobile network.

The Field of MAT Subject

The objective of builds the field of subject in Mobile Application Technology is to give the students a solid foundation of software development skills and to introduce the specific skills needed for developing mobile/wireless applications. Students will also gain the necessary understanding of current technologies and architectures that provide the network and communications infrastructure for mobile enabled enterprise computer systems, also to give students the opportunity to obtain a deep understanding of a range of disciplines in Mobile Application Technology.

The students are expected to develop their skills and master the techniques which will allow them to conduct research for both their thesis and/or to continue their studies.

The field of MAT subjects :

1. Mobile Programming: to explore the various methodologies and mobile software engineering equipment.
2. Mobile Entrepreneurships: to explore the various techniques of planning, management skills and how to build a mobile application & technology company.
3. Current Mobile Technology: to explore the various of the trend technology in mobile application & device.

All students of MAT program must follow these three fields to become Mobile Application Technology graduates.

The objective of these three fields is to provide the students with the knowledge and skills required by business & industry and who wants to develop the own mobile application company.

Course Structure

Sem	Code	Course Name	SCU	Total
1	CHAR6013	Character Building: Pancasila	2	20
	MATH6025	Discrete Mathematics	4	
	MATH6030	Linear Algebra	2	
	COMP6047	Algorithm and Programming	4/2	
	MOBI6003	Introduction to Mobile Application and Technology	4	
	English University Courses I			
	ENGL6128	English in Focus	2	
	ENGL6130	English for Business Presentation	2	
2	CHAR6014	Character Building: Kewarganegaraan	2	20
	MATH6031	Calculus	4	
	COMP6048	Data Structures	4/2	
	MOBI6002	Mobile Object Oriented Programming	2/2	
	MOBI6008	Mobile Game Creative Design	2	
	English University Courses II			
	ENGL6129	English Savvy	2	
	ENGL6131	English for Written Business Communication	2	
3	CHAR6015	Character Building: Agama	2	24
	COMP6049	Algorithm Design and Analysis	4	
	ENTR6003	Entrepreneurship I	2	
	COMP6056	Program Design Methods	4	
	MOBI6006	Mobile Community Solution	2/2	
	COMP6062	Compilation Techniques	4	
	MOBI6026	Mobile Cloud Computing	2/2	
4	CPEN6108	Computer Networks	2/2	22
	ISYS6279	Database Systems	4/2	
	COMP6229	Software Engineering*	4	
	MOBI6023	Mobile User Experience	2	
	MOBI6009	Mobile Multimedia Solution	2/2	
	MOBI6025	Mobile Application Security	2	
5	MOBI6043	Mobile Testing and Implementation*	2	22
	MKTG6063	Market Research Methodologies	2	
	COMP6153	Operating System	2/2	
	COMP6231	Human and Computer Interaction	2/2	
	ENTR6004	Entrepreneurship II	2	
	COMP6227	Artificial Intelligence	4	
	MOBI6012	Web Design	2/2	
6	**Enrichment Program I**		16	16
7	**Enrichment Program II**		16	16
8	MOBI6024	Thesis	6	6
			TOTAL CREDIT 146 SCU	

**) Entrepreneurship Embedded*

English University Courses:

-) *For 1st Semester : English University Courses I, student with score Binus University English Proficiency Test less than 500 will take English in Focus, and student with score test greater than or equal to 500 will take English for Business Presentation*

-) *For 2nd Semester: English University Courses II, student with score Binus University English Proficiency Test less than 500 will take English Savvy, and student with score test greater than or equal to 500 will take English for Written Business Communication*

Enrichment Program I (6th Semester) & Enrichment Program II (7th Semester):

-) *Student will take one of enrichment program tracks (off campus).*

Enrichment Track Scheme

Track	Semester 6						Semester 7					
	I	RS	ENTR	CD	SA	*etc	I	RS	ENTR	CD	SA	*etc
1	v						v					
2		v						v				
3			v						v			
4				v			v					
5				v						v		
6				v							v	
7					v		v					
8					v					v		
9					v						v	
10						v	v					
11						v				v		
12						v					v	

Notes:
I : Internship
RS : Research
ENTR : Entrepreneurship
CD : Community Development
SA : Study Abroad
*etc : Department specific needs

Notes:
Student can choose one of the available tracks

Enrichment Internship Track

Code	Course Name	SCU	Total
Enrichment for Student who take industrial experience track in semester 6, should also take industrial experience track in semester 7:			16
Enrichment Program I			
MOBI6028	Internship I	8	
MOBI6029	Mobile Application & Technology Practice in Industry I	4	
MOBI6031	EES in Mobile Industry I	4	
Enrichment Program II			16
MOBI6032	Internship II	8	
MOBI6030	Mobile Application & Technology Practice in Industry II	4	
MOBI6033	EES in Mobile Industry II	4	
Enrichment for Student who take study abroad and community development track in semester 6, should take these courses below if they want to take industrial experience track in semester 7:			16
MOBI6037	Internship	8	
MOBI6038	EES in Mobile Industry	4	
MOBI6039	Mobile Application & Technology Practice in Industry	4	

Enrichment Entrepreneurship Track

Code	Course Name	SCU	Total
Enrichment Program I			
ENTR6062	Business Start Up	8	16
ENTR6069	Business Model & Validation in Mobile Application Project	2	
ENTR6086	Launching New Venture in Mobile Application Project	2	
ENTR6068	EES in New Business	4	
Enrichment Program II			
ENTR6070	Growing a Business	8	16
ENTR6087	Lean Start Up & Business Plan in Mobile Application Project	2	
ENTR6142	Venture Capital in Mobile Application Project	2	
ENTR6073	EES in Business Experience	4	

Enrichment Research Track

Code	Course Name	SCU	Total
Enrichment Program I			
RSCH6031	Research Experience I	8	16
RSCH6029	Scientific Writing in Mobile Apps and Technology Research Area I	4	
RSCH6033	Global EES I (Team Work, Communication, Problem Solving & Decision Making)	4	
Enrichment Program II			
RSCH6034	Research Experience II	8	16
RSCH6107	Scientific Writing in Mobile Apps and Technology Research Area II	4	
RSCH6036	Global EES II (Self-Management, Planning & Organizing, Initiative & Enterprise)	4	

Enrichment Community Development Track

Code	Course Name	SCU	Total
Enrichment Program I			
CMDV6001	Community Outreach Project Implementation	8	16
CMDV6036	Community Outreach Project Design in Mobile Applications Project	4	
CMDV6003	Employability and Entrepreneurial Skills	4	
Enrichment Program II			
CMDV6004	Community Development Project Implementation	8	16
CMDV6037	Community Development Project Design in Mobile Application Project	4	
CMDV6006	Employability and Entrepreneurial Skills	4	

Enrichment Study Abroad Track*

Course Name		SCU	Total
Enrichment Program I			
GLOB6005	Elective Course for Study Abroad 1	4	
GLOB6006	Elective Course for Study Abroad 2	4	
GLOB6007	Elective Course for Study Abroad 3	4	
GLOB6008	Elective Course for Study Abroad 4	4	
GLOB6009	Elective Course for Study Abroad 5	2	
GLOB6010	Elective Course for Study Abroad 6	2	16
GLOB6011	Elective Course for Study Abroad 7	2	
GLOB6012	Elective Course for Study Abroad 8	2	
GLOB6013	Elective Course for Study Abroad 9	2	
GLOB6014	Elective Course for Study Abroad 10	2	
GLOB6015	Elective Course for Study Abroad 11	2	
GLOB6016	Elective Course for Study Abroad 12	2	
Enrichment Program II			
GLOB6017	Elective Course for Study Abroad 13	4	
GLOB6018	Elective Course for Study Abroad 14	4	
GLOB6019	Elective Course for Study Abroad 15	4	
GLOB6020	Elective Course for Study Abroad 16	4	
GLOB6021	Elective Course for Study Abroad 17	2	
GLOB6022	Elective Course for Study Abroad 18	2	16
GLOB6023	Elective Course for Study Abroad 19	2	
GLOB6024	Elective Course for Study Abroad 20	2	
GLOB6025	Elective Course for Study Abroad 21	2	
GLOB6026	Elective Course for Study Abroad 22	2	
GLOB6027	Elective Course for Study Abroad 23	2	
GLOB6028	Elective Course for Study Abroad 24	2	

*) Transferred courses will be transferred based on credit transfer policies on study program with total of 16 credits.

Student should pass all of these quality controlled courses as listed below:

No.	Code	Course Name	Minimum Grade
1	CHAR6013	Character Building: Pancasila	B
2	ENTR6004	Entrepreneurship II	C
3	COMP6047	Algorithm and Programming*	C
4	COMP6048	Data Structures	C
5	COMP6056	Program Design Methods	C
6	COMP6229	Software Engineering	C
7	MOBI6002	Mobile Object Oriented Programming*	C
8	MOBI6008	Mobile Game Creative Design*	C

*) Tutorial & Multipaper