Computer Science Global Class

Introduction

In the new millennium and the global era, the role of information and automation in the various domains and activities of the business industry are becoming more important. The successes of the activities are determined by its information system. Information must be up-to-date, accurate and comprehensive to allow decision makers to determine the enterprise's strategy. Furthermore, automation can facilitate human activity, accelerate the pace of work and make it more effective and efficient, while also increasing productivity in various activities. The development of communication and computer technology has made it possible to get information that is rapid, exact, and accurate, while increasing the application of automation in various fields such as Industry, business, office affairs and in the development of science and technology.

The Computer Science study program was founded in September 1987, under STMIK BINA NUSANTARA; it became one of the programs under the coordination of the Faculty of Computer Science, BINA NUSANTARA UNIVERSITY in December 1998.

The study of computer science at BINA NUSANTARA UNIVERSITY puts emphasis on the process, techniques, and tools that go into developing computer based systems, with specialities in object oriented software engineering, multimedia, web, database and computer network orientation.

Vision

A study program of choice in Computer Science which focuses on developing creative software solutions for industry, is recognized internationally, champions innovation and delivers graduates with international qualification.

Mission

The mission of Computer Science Department is to contribute to the global community through the provision of world-class education by :

1. Educating students with fundamental and advance knowledge, skill and practice in software development specialized in database technology, intelligence system, networking or multimedia and game development by providing an excellent learning environment and promoting research and collaboration with global industry.

2. Providing IT professional services with emphasis in application of knowledge in terms of society development.

3. Sharing application of knowledge related to computer science for Indonesian and international community quality of life improvement.

4. Promoting students & lecturers to be creative and value-addings talents in computer science by creating suitable environment in order to be able to compete in international level.

5. Preparing students for becoming smart and good ICT professionals, leaders and entrepreneurs in global market or for continuing in advanced studies.

Program Objective

The objectives of the program are:

1. To provide students with a solid foundation of mathematical, algorithm principles, computer science knowledge and ethical that will be needed in IT practice.
2. To provide students with skills to apply design and development principles in the construction of software system applied in database technology, intelligence system, networking and multimedia development.
3. To prepare students with abilities to keep up-to-date with the latest Information Technology trends, developments and industries.
4. To prepare students with abilities in problem solving and good communication skills 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. Able to apply knowledge and understanding of mathematical concepts, principles and theories relating to computer science knowledge.
2. Able to demonstrate knowledge and understanding of algorithm concepts, principles and theories relating to computer science knowledge.
3. Able to classify problems and to apply design and development principles for specific problems.
4. Able to classify criteria and specifications appropriate to specific problems, plan strategies for their solution and construct software system development.
5. Able to construct a solution by applying current technologies.
6. Able to depict trend technologies in the future.

Prospective Career of the Graduates

After finishing the program, the graduate of Computer Science Study Program could follow a career as:

1. Software Engineer/Developer
2. System Analyst/Developer
3. Web Engineer/Developer
4. Computer Network Specialist
5. Database Specialist
6. IT Support/Consultant
7. Multimedia Programmer
8. Lecturer/Trainer

Curriculum

The present curriculum used in the Computer Science study 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, and market trends, so that the graduates of the Computer Science study 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 a grounding in Computer Science 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, computer architecture, and computer network.

Concentration Subject (Stream)

The objective of this group is to give students the opportunity to obtain a deep understanding of a range of disciplines in computer science. 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 Concentration subjects (Stream) provide:

1. Software Engineering: to explore the various methodologies and software engineering equipment.
2. Intelligence Systems: to explore the various techniques of computer intelligence that can be applied for problem solving.
3. Database Technology: to explore the various technologies and Database Application.
4. Networking: to explore computer networking which consists of installation, administration, and computer networking management.
5. Applied Networking (CISCO): to explore computer networking technology based on computer network equipment (CISCO equipment).
6. Interactive Multimedia: to explore computer interactive multimedia applications, based on computer programming, design tools, and software engine.
7. Applied Database: to explore computer specialized technology for database application development based on Oracle product.

Entrepreneur and Employability Skill (Internship)

The objective of this group of subject is to prepare students with professional experience, work ethics and to experience working environment. The students are expected to apply and to practice their knowledge in the real working area such as industry, research lab, and also as entrepreneur start up. And give reports as the result of the subjects.

Course Structure

Sem	Code	Course Name	SCU	Total
1	CHAR6013	Character Building: Pancasila	2	20
	MATH6025	Discrete Mathematics	4	
	COMP6060	Programming Language Concepts	2	
	COMP6047	Algorithm and Programming	4/2	
	MATH6031	Calculus	4	
	ENGL6132	English Access	2	
2	CHAR6014	Character Building: Kewarganegaraan	2	21
	COMP6048	Data Structures	4/2	
	MATH6030	Linear Algebra	2	
	COMP6056	Program Design Methods	4	
	COMP6175	Object Oriented Programming	2/2	
	ENGL6133	English Global	2	
	LANG6061	Indonesian	1	
3	COMP6049	Algorithm Design and Analysis	4	24
	ISYS6169	Database Systems	4/2	
	CPEN6098	Computer Networks	2/2	
	COMP6065	Artificial Intelligence	4	
	ENTR6003	Entrepreneurship I	2	
	ENGL6134	English for Academic Writing	2	
	CHAR6015	Character Building: Agama	2	
4	COMP6100	Software Engineering*	4	21
	COMP6176	Human and Computer Interaction	2/2	
	COMP7084	Multimedia Systems	2/1	
	COMP6099	Advanced Object Oriented Programming	2	
	COMP6106	Code Reengineering	4	
	COMP6225	Object-Oriented Database	2/2	
5	COMP6062	Compilation Techniques	4	23
	COMP6153	Operating System	2/2	
	ENTR6004	Entrepreneurship II	2	
	STAT6021	Research Methodology	2	
	COMP6144	Web Programming*	2/1	
	COMP6115	Object Oriented Analysis & Design	2/2	
	COMP7117	Artificial Neural Network	2/2	

Sem	Code	Course Name	SCU	Total
	Elective courses list for study abroad*			
	GLOB6029	Elective Course 1	4	
	GLOB6030	Elective Course 2	4	
	GLOB6031	Elective Course 3	4	
	GLOB6032	Elective Course 4	4	
	GLOB6033	Elective Course 5	2	
	GLOB6034	Elective Course 6	2	
6	GLOB6035	Elective Course 7	2	15
	GLOB6036	Elective Course 8	2	
	GLOB6037	Elective Course 9	2	
	GLOB6038	Elective Course 10	2	
	GLOB6039	Elective Course 11	2	
	GLOB6040	Elective Course 12	2	
	GLOB6083	Elective Course 13	3	
	GLOB6084	Elective Course 14	1	
7	**Enrichment Program**		16	16
8	COMP8074	Thesis	6	6
			Total Credits 146	

) Entrepreneurship Embedded

Elective courses list for study abroad (6th Semester):

-) Transferred courses will be transferred based on credit transfer policies on study program with total of 15 credits

Enrichment Program (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	

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
COMP6158	Industry Experience	8	
COMP6159	EES in Industry	4	16
COMP6160	IT Practice in Industry	4	

Enrichment Community Development Track

Code	Course Name	SCU	Total
CMDV6159	Community Outreach Project Implementation	8	
CMDV6041	Community Outreach IT Project Design	4	16
CMDV6208	Employability and Entrepreneurial Skills in Computer Science Community	4	

Enrichment Study Abroad Track*

Course Name		SCU	Total
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	
GLOB6011	Elective Course for Study Abroad 7	2	16
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	

*) 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	COMP6056	Program Design Methods*	C
5	COMP6048	Data Structures*	C
6	COMP6100	Software Engineering*	C
7	COMP6115	Object Oriented Analysis & Design	C
8	COMP7117	Artificial Neural Network	C

*) Tutorial & Multipaper