

# Computer Science

## Introduction

The Computer Science Program teaches basic knowledge of computer science include algorithms, methods of application development and database technology with knowledge and understanding of mathematical concepts. Curriculum designed based on international curricula ACM (Association for Computing Machinery) and input from business and industry. The graduate expected from this program can compete internationally and provide creative and innovative solutions in place of work.

## Vision

A online learning 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 qualifications.

## Mission

The mission of Computer Science Study Program 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-adding 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:

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.

## Student Outcomes

After completing the study, graduates are:

1. Able to create software application design with the implementation of database system principal design to solve structured and semi-structured data
2. Able to design software application solution based on problem analysis which can be solved with structured approach in informatics area.

3. Able to assess information and communication technology trend to deliver alternative solution of software development.
4. Able to have critical thinking and scientific approach.
5. Able to mastering in computing area.
6. Able to implement technique and tools for computing practice.
7. Able to be creative and innovative in the development and application of Informatics concepts
8. Able to perform leadership and multi-disciplinary team work

### Prospective Career of the Graduates

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

### Curriculum

The curriculum 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 Machinery), local and foreign universities, and market trend. Therefore, the graduates are expected to be able to face the competition at both national and international level.

### Course Structure

Sem	Code	Course Name	SCU	Total
1	CHAR6019	Character Building: Pancasila	2	20
	MATH6077	Discrete Mathematics	4	
	COMP6742	Algorithm Design and Analysis	4	
	COMP6599	Algorithm and Programming	6	
	COMP6600	Operating System	4	
2	COMP6601	Data Structures	6	20
	MATH6132	Calculus and Linear Algebra	6	
	LANG6031	Indonesian	2	
	ISYS6508	Database Systems	6	
3	CHAR6020	Character Building: Kewarganegaraan	2	22
	COMP6740	Program Design Methods	4	
	CPEN6214	Computer Networks	4	
	COMP6275	Artificial Intelligence	4	
	COMP6307	Human and Computer Interaction	4	
	ENGL6163	English Professional	4	

Sem	Code	Course Name	SCU	Total
4	CHAR6021	Character Building: Agama	2	20
	COMP6199	Software Engineering	6	
	COMP6276	Compilation Techniques	4	
	ISYS6362	Database Design	4	
	COMP6284	Code Reengineering	4	
5	COMP6148	Programming Language Concepts	2	22
	COMP6620	Pattern Software Design	4	
	COMP6619	Advanced Object Oriented Programming	6	
	COMP6618	Object Oriented Programming	6	
	ENTR6081	Entrepreneurship	4	
6	COMP6334	Probability and Statistics	2	20
	RSCH6003	Research Methodology	2	
	<b>Minor Program</b>		16	
7	ISYS6332	Data Warehouse	4	16
	COMP6621	Web Programming	4	
	ISYS6523	Data Mining	4	
	COMP6622	Object-Oriented Database	4	
8	COMP6288	Thesis	6	6
<b>Total Credit 146 SCU</b>				

**Minor Program (6<sup>th</sup> Semester):**

-) Student will take one of minor program track. See minor scheme for the tracks detail.

**Minor Track Scheme**

Track	1 <sup>st</sup> Period				2 <sup>nd</sup> Period			
	BM	AF	IS	CS	BM	AF	IS	CS
1	V	-	-	-	V	-	-	-
2	-	V	-	-	-	V	-	-

**Notes:**

BM : Business Management Minor Program  
 AF : Accounting and Finance Minor Program  
 IS : Information Systems Minor Program  
 CS : Computer Science Minor Program

**Notes:**

Student will take one of Minor Program tracks

**Minor Program Track**

Code	Course Name	SCU	Total
<b>Minor Program 1<sup>st</sup> Period</b>			8
COMP6615	Interface Design	4	
CPEN6213	Wide Area Networks	4	
<b>Minor Program 2<sup>nd</sup> Period</b>			8
COMP6616	Web Application	4	
COMP6617	Cloud Computing	4	

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

No	Course Code	Course Name	Minimal Grade
1	CHAR6019	Character Building: Pancasila	B
2	ENTR6081	Entrepreneurship	C
3	COMP6599	Algorithm and Programming	C
4	COMP6601	Data Structures	C
5	COMP6740	Program Design Methods	C
6	COMP6199	Software Engineering	C
7	ISYS6362	Database Design	C
8	COMP6618	Object Oriented Programming	C