



CURRICULUM
Master of Science in Computer Science (MSCS)
 Academic Year 2019-2020
 Reference CMOs: CMO No. 07, s. 2010

Curriculum Description

Designed to broaden and upgrade the knowledge and skills of CS practitioners. The program aims to provide both breadth and in-depth knowledge in the concepts and techniques related to the design, implementation and application of computer systems

The MSCS curriculum is based from the Policies and Standards (PS) for the graduate program of the Information Technology Education issued by the Commission on Higher Education (CHED) and is benchmarked from the curriculum of leading international academic institutions offering this program.

Program Objectives

The alumni of MS Computer Science program, about three to five years after graduation shall:

1. Engage in professional development or post-graduate education to pursue flexible career paths adapting to innovative technological changes in computer science and related fields;
2. Demonstrate professionalism and a sense of societal and ethical responsibility in computer science practice, development and in all their endeavors; and
3. Articulate their expertise in making technical contributions to design, develop, and solve problems in their practice of computer science which meet the desired needs of the society.

Program Outcomes

1. Ability to apply computer science principles and practices.
2. Ability to apply suitable software engineering principles and practices to develop and maintain stable, secure, scalable, and maintainable software.
3. Ability to produce effective solutions to complex computer science problems.
4. Ability to recommend appropriate computer science solutions based on organizational needs and an evaluation of alternatives.
5. Ability to identify and discuss professional, individual, organizational, societal, and regulatory implications of information systems and technology.
6. Ability to select technologies, policies, and procedures to assure the confidentiality, integrity, and availability of information and CS systems.

Curriculum Components

	Courses	Units	Total
	A. Core Courses		18 units
	Advanced Operating Systems	3	
	Theory of Automata and Formal Languages	3	
	Design and Analysis of Algorithms	3	
	Advanced Concepts in Software Engineering	3	
	Programming Languages and Paradigms	3	
	Methods of Research and Statistics	3	
	B. Specialization Courses		12 units
	Compiler Design and Theory	3	
	Artificial Intelligence	3	
	Multimedia Systems Design and Technology	3	
	Computer Network Technology	3	
	C. Elective Courses		6 units
	Instructional Software Design and Development	3	
	E-Learning and Related Technology	3	
	Network Administration and Programming	3	
	Computer and Network Security	3	

	Advanced Topics in Computer Science	3	
	D. Thesis		6 units
	Seminar in Thesis Writing in CS	3	
	Thesis Writing in Computer Science	3	

SUMMARY	
Courses	Number of Units
Core Courses	18
Specialization Courses	12
Elective Courses	6
Thesis	6
TOTAL	42

PROGRAM OF STUDY

FIRST YEAR					
FIRST SEMESTER					
Code	Course Title	Units	Lec	Lab	Prerequisite
CS 501	Advanced Operating Systems	3	3	-	-
CS 502	Theory of Automata and Formal Languages	3	3	-	-
CS 503	Design and Analysis of Algorithms	3	3	-	-
	TOTAL	9	9	-	
SECOND SEMESTER					
Code	Course Title	Units	Lec	Lab	Prerequisite
CS 504	Advanced Concepts in Software Engineering	3	3	-	-
CS 505	Programming Languages and Paradigms	3	3	-	-
CS 507	Compiler Design and Theory	3	3	-	-
	TOTAL	9	9	-	
SECOND YEAR					
FIRST SEMESTER					
Code	Course Title	Units	Lec	Lab	Prerequisite
CS 508	Artificial Intelligence	3	3	-	-
CS 509	Multimedia Systems Design and Technology	3	3	-	-
	<i>Elective Course 1</i>	3	3	-	-
	TOTAL	9	9	-	
SECOND SEMESTER					
Code	Course Title	Units	Lec	Lab	Prerequisite
CS 510	Computer Network Technology	3	3	-	-
RES 501	Methods of Research and Statistics	3	3	-	-
	<i>Elective Course 2</i>	3	3	-	-
	TOTAL	9	9	-	
THIRD YEAR					
FIRST SEMESTER					
Code	Course Title	Units	Lec	Lab	Prerequisite
Thesis 1	Seminar in Thesis Writing in CS	3	3	-	
	TOTAL	3	3	-	
SECOND SEMESTER					
Code	Course Title	Units	Lec	Lab	Prerequisite
Thesis 2	Thesis Writing in Computer Science	3	3	-	
	TOTAL	3	3	-	