# CURRICULUM
## Master of Science in Information Technology (MSIT)
Academic Year 2019-2020
Reference CMOs: CMO No. 07, s. 2010

## Curriculum Description

Designed to broaden and upgrade the knowledge and skills of IT practitioners. The program aims to equip the students with the concepts and technologies that will prepare and enable them for the industrial practice of systems integration, systems administration, systems planning, systems implementation and other design and operation of IT infrastructure.

The MSIT 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 Information Technology 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 information technology 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 information technology problems.
4. Ability to recommend appropriate information technology 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 IT systems.

## Curriculum Components

| Courses | Units | Total |
|---|---|---|
| **A. Core Courses** | | **18 units** |
| Computer Architecture and Operating Systems | 3 | |
| Advanced Database Management Systems | 3 | |
| Programming Languages and Data Structures and Analysis | 3 | |
| Advanced Concepts in Software Engineering | 3 | |
| Computer Network Technologies | 3 | |
| Methods of Research with Statistics | 3 | |
| **B. Specialization Courses** | | **12 units** |
| Systems Analysis and Logical Design | 3 | |
| Object-oriented Software Development | 3 | |
| Computer and Network Security | 3 | |
| Multimedia System Design and Development | 3 | |
| **C. Elective Courses** | | **6 units** |
| E Learning and Related Technology | 3 | |
| E Commerce Technology | 3 | |
| XML and Web Services Programming | 3 | |
| Knowledge Engineering and Expert Systems | 3 | |

| D. Capstone Project | | | 6 units |
|---|---|---|---|
| | Seminar in Thesis Writing in IT | 3 | |
| | Thesis Writing in IT | 3 | |

| SUMMARY | |
|---|---|
| **Courses** | **Number of Units** |
| Core Courses | 18 |
| Specialization Courses | 12 |
| Elective Courses | 6 |
| Capstone Project | 6 |
| **TOTAL** | **42** |

**PROGRAM OF STUDY**

| FIRST YEAR | | | | | |
|---|---|---|---|---|---|
| **FIRST SEMESTER** | | | | | |
| **Code** | **Course Title** | **Units** | **Lec** | **Lab** | **Prerequisite** |
| IT 501 | Computer Architecture and Operating Systems | 3 | 3 | - | - |
| IT 502 | Advanced Database Management Systems | 3 | 3 | - | - |
| IT 503 | Programming Languages and Data Structures and Analysis | 3 | 3 | - | - |
| | **TOTAL** | **9** | **9** | **-** | |
| **SECOND SEMESTER** | | | | | |
| **Code** | **Course Title** | **Units** | **Lec** | **Lab** | **Prerequisite** |
| IT 504 | Advanced Concepts in Software Engineering | 3 | 3 | - | - |
| IT 507 | Systems Analysis and Logical Design | 3 | 3 | - | - |
| IT 508 | Object-oriented Software Development | 3 | 3 | - | - |
| | **TOTAL** | **9** | **9** | **-** | |
| **SECOND YEAR** | | | | | |
| **FIRST SEMESTER** | | | | | |
| **Code** | **Course Title** | **Units** | **Lec** | **Lab** | **Prerequisite** |
| IT 510 | Computer and Network Security | 3 | 3 | - | - |
| IT 511 | Multimedia System Design and Development | 3 | 3 | - | - |
| | *Elective Course 1* | 3 | 3 | - | - |
| | **TOTAL** | **9** | **9** | **-** | |
| **SECOND SEMESTER** | | | | | |
| **Code** | **Course Title** | **Units** | **Lec** | **Lab** | **Prerequisite** |
| IT 505 | Computer Network Technologies | 3 | 3 | - | - |
| RES 501 | Methods of Research and Statistics | 3 | 3 | - | - |
| | *Elective Course 2* | 3 | 3 | - | - |
| | **TOTAL** | **9** | **9** | **-** | |
| **THIRD YEAR** | | | | | |
| **FIRST SEMESTER** | | | | | |
| **Code** | **Course Title** | **Units** | **Lec** | **Lab** | **Prerequisite** |
| Thesis 1 | Seminar in Thesis Writing in IT | 3 | 3 | - | |
| | **TOTAL** | **3** | **3** | **-** | |
| **SECOND SEMESTER** | | | | | |
| **Code** | **Course Title** | **Units** | **Lec** | **Lab** | **Prerequisite** |
| Thesis 2 | Thesis Writing in IT | 3 | 3 | - | |
| | **TOTAL** | **3** | **3** | **-** | |