

Information Technology Department

**Master of Science in Information Technology Program**

**PROGRAM OVERVIEW:**

The Master of Science in Information Technology (**MSIT**) Program of the College of Computer Studies, De La Salle University is a two-year postgraduate course designed to equip students with knowledge and skills needed to become organizational and societal leaders who will act as agents of change through the planning, development, and implementation of technology-based solutions. In the course of the program students develop a rigorous understanding of organizations (business, government, as well as other organizational forms) along with deep technical skills. In this way they are trained to be leaders who can harness ICT’s transformational role and bridge issues in the domains of both organizations and technology.

The program seeks to connect and balance theory and practice. Students engage with relevant theories, and subsequently develop these further and apply these to real-life problems and issues. This is done in order for students to craft solutions that are meaningful and capable of addressing society’s complex problems. Program candidates are expected to understand and manage IT as multidimensional, socially shaped, and hence often unpredictable. They are trained to develop critical thinking skills that are capable of embracing issues that are multifaceted and ambiguous. Candidates are also empowered to grasp and address the ethical dimensions that often underpin IT issues.

The program is made up of 12 units of foundation courses which are a mix of technical subjects (including IS theory and practice, networking, languages, and databases) and macro-level management courses (change management, economics of technology). Following these courses, students are expected to focus on one of two 18-unit specialization tracks namely: a) ICT for Development and E-Government, or b) Business Innovation and Organizational Productivity.

Students coming from non-IT and CS academic backgrounds who wish to take the program are prepared through a series of remedial courses. An overview of the revised program is provided in Table 1.

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| --- | --- | --- |
| **Academic Program Components** | **Description** | **Units** |
| **Remedial Courses** | Set of courses designed to allow non IT/CS candidates to have sufficient academic background and ensure meaningful participation in the program. | 18 |
| **Foundation Courses** | Foundation courses are program offerings that would allow graduate students to bridge theories and practices on ICT and its related environment. | 12 |
| **Specialization Course** | The MSIT program offers a set specialization courses that would allow students to focus on specific areas of inquiry and research. | 18 |
| **Thesis Requirement** | This requirement allows students to demonstrate mastery of both a specific topic and the relation of this topic to a broader area of inquiry or interest. This requirement serves as a summative expression of what the graduate student has learned in the program. | 6 |
|  | **TOTAL** | 36 |

Table 1: Overview of the Revised MSIT Program

1. **Remedial Courses**

The MSIT program is designed to accommodate motivated students coming from non-IT/non-CS academic backgrounds. Students who are evaluated to lack competencies on areas of the IT discipline will be required to take any or all of the following remedial courses upon recommendation of the Graduate School Coordinator and approval of the Chair of the IT Department.

* + 1. [IT001] Project Management & IS Development
    2. [IT002] IT Resource Management
    3. [IT003] Basics of Databases
    4. [IT004] Basic programming
    5. [IT005] Advanced programming
    6. [IT006] Introduction to Software Engineering

These remedial courses are not credited towards a Masters degree.

1. **Foundation Courses**

The MSIT program is composed of a 12-unit of foundation course offering which all students are expected to complete in order to have the skills needed to bridge the domains of technology and organizations/ society. It is only after completing these courses that students can move on to the program’s elective tracks. The foundation courses are as follows:

* + 1. [ Course Code] Foundation Topics 1: (Programming Languages, Advanced Databases)
    2. [ Course Code] Foundation Topics 2: Networking and Data Communication (include cloud computing), Computer Architecture
    3. [ Course Code] Economics of Technology Management (overarches technology assessment, evaluation, and investment)
    4. [ Course Code] IS Theory and Practice

1. **Specialization courses:**

Upon completion of the foundation course offerings, MSIT students are expected to select from among two tracks namely: a governance-national development track and a business-organizational track. Designed as elective tracks, these courses will allow research specialization according to the IT department’s research thrust. The specialization courses shall be composed of 6-units of introductory courses and 12-units of elective courses.

1. **Introductory Courses for Specialization**

The introductory courses for specialization are designed to be taken by all graduate students as part of their specialization courses. The introductory courses for specialization are designed to supplement the research focus of the program.

* + 1. [Course Code] Organizational Improvement and Change Management (we broadened business engineering to organizational improvement)
    2. [ Course Code] Methods of Research

1. **Specialization Track: ICT for Development & E-Governance**

The ICT for Development/E-Governance elective track is a research-oriented track that will allow MSIT candidates to specialize in the utilization of ICT in the development of society. This research track aims to create the "**ICT4D champions**" who will uncover the transformational role of ICT in societal development and combine the necessary skills to see ICT’s role in the sustainable delivery of development goals.

**ICT4D/E-Governance Specialization Courses (Elective Track)**

1. [Course Code] Development Informatics
   * Information and Knowledge as economic resources (New Growth Theory)
   * Information and technology management
   * ICT and its relevance to national development
2. [Course Code] Development Economics & ICT Policies
   * Approaches and trends in development economics
   * Global perspective on the role of ICT in society
   * Philippine ICT institutions and policies
3. [Course Code] Introduction to E-Government
   * Democratic Theories (e.g. Democratic Peace, Participation, etc)
   * Role of Government
   * New Public Management and the Role of ICT
4. [Course Code] IT Ethics and Leadership (including global IT trends)
5. **Specialization Track: Business Innovation & Organizational Productivity**

The Business Innovation & Organizational Productivity elective track aims to explore the transformational role of ICT in building innovative and productive organizations. The track will have a strong interest in building innovative and dynamic organizations in order to gain competitive advantage in today’s global economy. This track will give candidates an impulse in creativity, knowledge, innovation management capacity and leadership in promoting innovation and productivity through the use of ICT within the organization.

**Business Innovation & Organizational Productivity (Elective Track)**

1. [Course Code] Innovations and Technology Management
   * Managing Innovation
   * IT Resource Management
   * Vendor Relations Management
   * Financial Management for ICT Initiatives
2. [Course Code] IT Ethics and Leadership
3. [Course Code] Work Transformation and Organizational Productivity
   * Theories and Concepts of Work Transformation
   * E-Transformation and the Role of ICT
4. [Course Code] Trends in ICT and Business-Organizational Productivity
   * Cloud Computing
   * Enterprise Architecture
   * Ethical Issues in ICT

**Program of Study**

1. Part-Time Load for Foundation Courses\*\*

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| --- | --- | --- |
| **TERM 1** | **TERM 2** | **TERM 3** |
| * Foundation 1 * IS Theory and Practice | * Foundation 2 * Organizational Improvement and CM | * IT Leadership * Economics of Technology Management |

1. Full-Time Load for Foundation Courses\*\*

|  |  |
| --- | --- |
| **TERM 1** | **TERM 2** |
| * Foundation 1 * IS Theory and Practice * IT Ethics and Leadership | * Foundation 2 * Organizational Improvement and CM * Economics of Technology Management |

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| --- |
| **Term XXX** |
| Elective Offerings |

\*\* Completion of all Foundation courses will allow students/candidates to take elective courses

**Revised MSIT Program**

**Course Description and Initial Outline**

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| 1. **Foundation Courses (12-units)**   **Course Title: Foundation Topics 1**  **Course Code:**  This course will provide students with an overview of the concepts on Programming Languages and Advanced Databases. The course will integrate theories and practices on these two areas and provide students with a solid background on these topics.  Course Outline:   * Overview of Programming Tools and related Trends * AGILE Programming * Discussion on Advanced Programming Concepts and Practices * Advanced databases: Practices and Concepts   **Course Title: Foundation Topics 2**  **Course Code**  This course examines the analytical aspects of data communications and computer networking. Topics cover protocol concepts and performance analysis that arise in data link layer, MAC sub-layer, and network layer.  Course Outline:   * Discussion of Networking and Data Communications Concepts * Discussions on Computer Architecture * IS Disaster Management * Trends: Cloud Computing, Enterprise Architecture, etc.   **Course Title: Economics of Technology Management**  **Course Code:**  The course aims to enable graduate students to build and evaluate economic and business models that can be used to analyze real managerial questions and how ICT can be utilized to address these questions. The course will also look at the transformational role of ICT in institutions and organizations.  With the use of related economic and business tools, students will be able to identify and evaluate decision alternatives, the competitive environments of firms, and the factors that influence organizational performance.  Course Outline:   * Overview of Strategic Management and Competitive Advantage * Discussion of Technology Management Concepts * Innovation Question: Role of ICT in an Organization’s Strategic Initiatives * Determining Feasibility of Technology Investments * Evaluating Investments in ICT   **Course Title : IS Theory and Practice** |
| This 3-unit graduate course intends to provide an in-depth appreciation of the basic theories, concepts, and philosophies that shaped the various views information and communications technology (ICT) and its role in societal development.  Aside from the role of ICT in society, the course will present a historical overview of general purpose technologies (GPTs) and discuss the on-going shift in the current techno-economic paradigm.  At the end of the course, graduate students are expected to develop a broad-multi-faceted view on ICT. It is expected that students of this course will be able to uncover the transformational role of ICT and its relevance to their current environment.  Course Outline: |

* Evolution of the Global Economy
* Information as Assets and Resources
* Transformational Role of ICT
* Discussion of Social and Digital Divides
* Trends in ICT practices