

The University of Dubai's, Information Technology Department offer a Computing and Information Systems (CIS) program which is accredited locally in the UAE by the Ministry of Higher Education and Scientific Research (MOHESR). CIS program is internationally accredited by Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET), USA.

Information Systems Security Concentration

BS in Computing and Information Systems (with a Concentration in Information Systems Security)

The CIS program with a concentration in Information Systems Security (ISS) prepares students for exciting and rewarding careers in managing and securing modern information systems.

More specifically, the CIS program with a concentration in ISS provides ways to integrate theoretical knowledge, contemporary techniques, skills, and tools that are necessary to secure information systems.

Graduates with a BS. in CIS (ISS concentration) are prepared to pursue entry level and managerial careers with the following job titles:

- Computer and Information Systems Manager
- Information Security Analyst
- Computer Security Specialist
- Information/Technology Security Manager
- Computer Forensics Expert
- Ethical Hacker / Penetration Engineer
- Computer Support Specialists (Helpdesk/Quality Assurance Specialist, Technical Trainer, etc. .)
- Network Administrator/Architect/Manager
- IT Auditor
- IT Security Consultant.

CIS Program Objectives

The CIS program graduates will demonstrate the ability to

1. Adhere to highest standards of Ethical and professional practices relevant to computing and information systems, and demonstrate awareness of the social and global impacts of computer technologies.
2. Maintain current knowledge of Computing and Information Systems methodologies and techniques to address the critical needs of the business environment.

3. Engage in applied organizational positions that require technical and organizational knowledge to analyze, design and implement Computing and Information Systems solutions.
4. Solve problems that require critical thinking, teamwork, and communication skills.

CIS Program Outcomes (General)

The Computing and Information Systems program is expected to enable students to achieve the following Program Outcomes (PO) by the time of graduation;

1. Apply knowledge of computing, information systems and mathematics.
2. Analyze an interdisciplinary IS related problem, identify and define the computing and information systems requirements appropriate to its solution.
3. Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs.
4. Function effectively in teams to create a project plan to accomplish a common goal.
5. Understand professional, ethical and social responsibilities.
6. Communicate effectively with a range of audiences.
7. Analyze the impact of computing on individuals, organizations and society, including ethical, legal, security and global policy issues.
8. Use current techniques, skills, and tools necessary for computing practice.
9. Understand the processes that support the delivery and management of information systems within a specific application environment.

CIS Program Outcomes (Concentration: Information Systems Security)

The Computing and Information Systems program with concentration in Information Systems Security is expected to enable students to achieve the following Program Outcomes (PO) by the time of graduation;

1. Apply knowledge of computing, information systems and mathematics.
2. Analyze an interdisciplinary Information systems security problem; identify and define the IS security setup and configuration appropriate to its solution.
3. Design, implement and evaluate a computer-based system, process, component, or program to meet desired needs.
4. Function effectively in teams to create a project plan to accomplish a common goal.
5. Understand professional, ethical and social responsibilities.
6. Communicate effectively with a range of audiences.
7. Analyze the impact of computing on individuals, organizations and society, including ethical, legal, security and global policy issues.
8. Apply contemporary techniques, skills, and tools necessary for secure information systems.

9. Understand the processes and policies that support the operational, tactical, and strategic aspects of modern Secure Systems.

CIT General Requirements

ITGN 115 Computer Applications

The purpose of this course is to offer an in-depth knowledge of computer applications. Coverage includes word-processing, spreadsheets, presentation, and database packages. Students will learn advanced functions of these applications and the way they are applied in a modern office setting.

ITGN 120 Internet Applications

The purpose of this course is to develop the skills necessary to utilize the power of the Internet for information display and retrieval. The course introduces students to the Internet technology concepts, and web programming & authoring tools that can be used to develop Internet applications. Through a focused hands-on approach, students will develop interactive web pages.

IT Core Requirements

ITGN 215 Introduction to Information Systems

The purpose of this course is to introduce students to contemporary information systems and demonstrate how these systems are used throughout global organizations. Coverage includes key components of information systems and how these components can be integrated and managed to create competitive advantage. The course also provides an introduction to systems and development concepts, technology acquisition and various types of application software.

Prerequisite: BMNG 200 - ITGN 115 ; Semester offered: 1 & 2

ITGN 230 Introduction to Programming

The purpose of this course is to introduce the student to the general principles and concepts of programming. Coverage includes problem-solving, structured algorithms, program design and implementation. The course is delivered using an appropriate IT programming language such as Java and Visual Basic.

Prerequisite: ITGN 115 ; Semester offered: 2

ITGN 235 Principles of Networking

The purpose of the course is to provide essential knowledge on networking infrastructure, different types of networks and network hardware and software. Coverage includes data transmission, hubs,

switches, routers, topology, wiring and physical topology Protocol, layering LAN, WAN and internetworking.

Prerequisite: ITGN 120; Semester offered: 1

ITGN 250 Database Management Systems

The purpose of this course is to provide essential knowledge for the design and implementation of relational databases. Coverage includes conceptual E-R modeling, logical and physical design of relational databases and introduction to SQL language.

Prerequisite: ITGN 215; Semester offered: 2

ITGN 255 Operating Systems Administration

This course examines the concepts and administrative aspects of operating systems. Topics covered include Operating system fundamentals, including history, process and thread management, concurrency with semaphores and monitors, deadlocks, storage management, file systems, security management and I/O applications.

Prerequisites: ITGN 120; Semester offered: 1

ITGN 260 IT Project Management

The purpose of this course is to discuss project management principles, methodologies, tools and techniques used in developing IT-based projects. Coverage includes organizational and human factors in IT-project management analysis and planning of IT projects.

Prerequisite: ITGN 215 ; Semester offered: 2

ITGN 315 Object Oriented Programming

The purpose of this course is to provide essential knowledge of advanced programming aspects. Coverage includes Object Oriented Programming, classes and objects, inheritance, polymorphism, Advanced Graphical User Interface (GUI) and the development of comprehensive projects.

Prerequisite: ITGN 230; Semester offered: 2

ITGN 321 Object-Oriented Analysis and Design

The purpose of this course is to provide a sound understanding of the fundamental concepts of Object Oriented Software Engineering. Coverage includes Object Oriented Analysis (OOA), development (OOD) and implementation (OOI), Visual Modeling using the Unified Modeling Language (UML) and iterative Object Oriented System (OOS) development.

Prerequisite: ITGN 260 - ITGN 315; Semester offered: 1

ITGN 323 Enterprise Architecture

The purpose of this course is to provide students with an understanding of the theoretical and practical issues related to the design, selection, implementation and management of enterprise IT applications, systems and infrastructures. Students will learn enterprise architecture frameworks, models, strategies and tools for infrastructure management. The course also cover topics related to legacy system integration, service oriented architecture, enterprise data models and metadata management, virtualization, cloud computing, and vendor management.

Prerequisites: ITGN 255; Semester offered: 2

ITGN 340 Human Computer Interface

The purpose of this course is to introduce human computer interface. Coverage includes user-centered design process, analysis of user needs, user interface models and ergonomics, task analysis, GUI design principles, guidelines and patterns, tools for user interface prototyping and user interface testing and evaluation.

Prerequisite: ITGN 315; Semester offered: 1

ITGN 345 Information Systems Security

The purpose of this course is to provide an overview of methods to assure secure and confidential information systems. Coverage includes basic concepts of main security and privacy issues of the Internet and devices and implementation of security methods for computer networks and the internet.

Prerequisite: ITGN 235; Semester offered: 1

ITGN 350 Web Design and Development

The purpose of this course is to provide essential knowledge for designing and developing client-side browser interfaces as well as maintaining a dynamic and interactive website. Coverage includes advanced XHTML, Cascading Style Sheets (CSS), extended Markup Language (XML) and JavaScript.

Prerequisite: ITGN 250; Semester offered: 2

ITGN 414 Strategic Issues on Information Systems

The purpose of this course is to develop the student's critical understanding of the problems and opportunities faced by organizations with regard to information systems. Coverage includes

strategy fundamentals, strategic management concepts to ensure that IS development supports the business strategy and processes through suitable planning methods to implementation.

Prerequisite: ITGN 321 ; Semester offered: 2

ITGN 416 IT Audit and Control

The purpose of this course is to provide students with an overview of the control and auditing frameworks, methods, standards and approaches used in the audit and control of information systems in an organization. Students learn the impact of the IT audit and control function on the organization and will know how to create a control structure and then audit the IT infrastructure against it.

Prerequisites: ITGN 323 - ITGN 345; Semester offered: 2

ITGN 440 Computing and Information Systems Project (Capstone)

The purpose of this course is to provide an opportunity to research and develop a specific topic in the area of Computing and Information Systems. Coverage includes research methods, utilizing and applying various methodologies and techniques to design, implement, test and evaluate a specified project.

Prerequisite: 117 CH - ITGN 340 - ITGN 414 ; Semester offered: 2

ITGN 465 Internship

The purpose of this course is to further develop knowledge and skills within an IT organizational set-up. Coverage would provide an opportunity to gain awareness of the workings of organizations, including aspects of social and human factors primarily within a student's subject major.

Prerequisite: 117 CH; Semester offered: 2

ITGN 470 Industry Project (for working students)

The purpose of this course is to provide students with an applied learning experience through an industry project. The course requires students to undertake a project via research and analysis of an action IS problem/opportunity and to propose a solution/action plan, resulting in both an oral as well as a written presentation.

Prerequisite: 117 CH; Semester offered: 2

Concentration: Information Systems Security

ITSS 450 Information Systems Security Management

This course provides students with fundamentals of information systems security from a management perspective, as well as a thorough understanding of the administration of information security. Topics covered include security planning and policies, risk management, security implementation and maintenance, security and personnel, professional issues in IS security.

Prerequisites: ITGN 416; Semester offered: 1

ITSS 451 Ethical Hacking and Network Defense

This course covers penetration-testing tools and techniques that ethical hackers and security testers use to protect computer networks. The course provides a structured knowledge base for preparing security professionals and Network Administrators to discover vulnerabilities and recommend solutions for tightening network security and protecting data from potential attackers.

Prerequisites: ITGN 416; Semester offered: 1

ITSS 455 Computer Forensics and Investigations

This course provides students with a comprehensive understanding of digital forensic principles and the collection, preservation, and analysis of digital evidence. Students learn about the importance of forensic principles and procedures, legal considerations, digital evidence controls and the documentation of forensic analysis.

Prerequisites: ITGN 345; Semester offered: 1

ITSS 456 Database Security and Auditing

This course provides students with an understanding of security concepts and practices as applied to database systems. Students learn principles of database security and how to develop database applications embedding from simple to sophisticated security and auditing models using advanced database systems and software tools.

Prerequisites: ITGN 350 - ITSS 455; Semester offered: 2

ITSS 458 Disaster Recovery Planning

The goal of this course is to expose students to the essentials of disaster recovery planning. Coverage includes disaster recovery process including the process of assessing risks that an organization faces, and then developing, documenting, implementing, testing and maintaining procedures that help the organization quickly return to normal operations and minimize losses after a disaster.

Prerequisites: ITSS 450; Semester offered: 2