B.Sc. in Computer Information Systems
Study Plan

University Compulsory Courses
16 C.H

- University Elective Courses
9 C.H

Faculty Compulsory Courses
27 C.H

Department Compulsory Courses
69 C.H

Department Elective Courses
12 C.H

For prerequisite & equivalent courses see the Courses’ Description.
# B.Sc. in Computer Information Systems

## Management Information Systems

### Study Plan

#### University Compulsory Courses  
16 C.H

<table>
<thead>
<tr>
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<th>Code</th>
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#### University Elective Courses  
9 C.H

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#### Faculty Compulsory Courses  
36 C.H

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#### Department Elective Courses  
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**TOTAL 130 C.H**

* For prerequisite & equivalent courses see the Courses’ Description.
# B.Sc. in Computer Information Systems

## Financial Information Systems

### Study Plan

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  36 C.H

- **Department Compulsory Courses**  
  51 C.H

- **Department Elective Courses**  
  9 C.H

- **Specialization Compulsory Courses**  
  9 C.H

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### University Compulsory Courses

- **CIs442**  
- **CIs439**  
- **CIs430**  
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- **CIs390**  
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- **CIs345**  
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- **CIs150**  
- **CIs121**  
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- **CIs061**  
- **CIs050**

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- **CIs464**  
- **CIs461**  
- **CIs361**  
- **CIs463**  
- **CIs454**  
- **CIs451**  
- **CIs435**  
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- **CIs426**  
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- **CIs493**  
- **CIs474**  
- **CIs473**  
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### Specialization Compulsory Courses

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- **CIs462**  
- **CIs461**  
- **CIs444**  
- **CIs443**  
- **CIs431**  
- **CIs430**  
- **CIs429**  
- **CIs428**  
- **CIs427**

### TOTAL

130 C.H

* For prerequisite & equivalent courses see the Courses’ Description.
B.Sc. in Computer Information Systems

Courses’ Description

CIS 100  Computer Skills  (3C=2H+3L)
This course provides the very basic computer skills to students who have failed in demonstrating such skills in their college admittance test. The course covers topics such as computer components, computer functions and benefits, computer viruses and measure of protection. Also, introduction to operating systems, application software (including word processing, spreadsheets and presentation applications), Internet, e-mail systems, e-learning systems, e-library systems. Prerequisite: None

CIS 150  Introduction to Management  (3C=3H+0L)
This course provides an introductory coverage of management theory and practice. The topics include application of management theories to practical problems in planning, organizing, and controlling business activity. It focuses on the basic roles, skills and functions of management for effective and efficient decision making. The current issues of business ethics, environmental concerns, international management, women in management and political environment are also reviewed. Prerequisite: None

CIS 200  Professional and Ethical Issues in Computing  (1C=1H+0L)
This course introduces students to the social context of the IT industry and its practices. These include professional and ethical responsibilities in the analysis and design of systems. Also, in ensuring the safety of work environments, risks and liabilities of computer-based systems, intellectual property, computer crime, and economic issues in computing. Prerequisite: None

CIS 201  Introduction to Web Design  (1C=0H+3L)
This course introduces students to the Internet as an infrastructure to many services. The course then focuses on the WWW as a major Internet-based service. Working in a Lab, students will learn to create and maintain web pages and construct them in web sites. For this end, the students will learn HTML, XHTML and DHTML. Additionally, a brief introduction to XML is provided. Prerequisite: CS 112

CIS 228  Fundamentals of Database Systems  (3C=3H+0L)
This course teaches the fundamentals of databases. These include basic concepts and terminology (database, database administrator, database management systems, end-users, etc.), characteristics of the database approach, the three level-schema architecture and data independence, the Entity Relationship Model (notations and concepts), Relational Model (concepts, constraints and operations), Relational Algebra, ER to relational mappings, SQL, examples of DBMSs, functional dependencies and normal forms, storage structures. Prerequisite: CS 211

CIS 230  Information Systems  (3C=3H+0L)
The course starts by enabling students to differentiate between data, information, and knowledge. The course then introduces students to concepts precisely related to data management and information management. The students will learn about the technologies involved in system management. These include hardware technologies, software technologies, database management systems as well as networking technologies. Finally, the students will learn how these technologies could be integrated into different classes of systems including transaction processing systems, decision support systems and intelligent systems. Prerequisite: CIS 200

CIS 252  Accounting  (3C=3H+0L)
This course introduces students to the fundamental concepts of accounting. Students will learn procedures of collecting financial data and how to process such collections according to the generally accepted accounting principles. Students will also learn the accounting of a service firm, and accounting for purchase and sales of merchandise, the recording in the general journal (and the various specialized journals), and how to post data to the ledgers. Finally, the course covers the preparation of the trial balance and financial statements, including the study of the closing entry and adjusting entry. Prerequisite:CIS 150

CIS 255  Marketing  (3C=3H+0L)
This course covers the organization-consumer relationship through the marketing mix. Students will learn about the behavior of supplying organizations and behavior of the ultimate consumer. Students will learn to distinguish between consumer needs and consumer wants and how organizations satisfy these through the various marketing mix elements (product, price, place, promotion). While the course is mostly theoretical, practical applications of the theories are introduced through home works and projects. Prerequisite:CIS 150

CIS 302  Fundamentals of Multimedia  (3C=3H+0L)
This course introduces students to the basic elements of multimedia. These include text, sound, images, video and animation. For each element the students will learn about the required hardware and software and the effective utilization of the element in information communication. Laboratory sessions will enable the students to practice the theories and the software they learn in class. Prerequisite: CS 211

CIS 329  Data Warehousing  (3C=3H+0L)
This course covers basic topics related to data warehousing. These include building the data warehouse team, developing the business model for warehouse creation, maintenance and delivery. The course focuses on fundamentals of object analysis for business model creation and using the business model as a foundation for multi-dimensional analysis. The students will learn about the importance of metadata as well as schema designs and its variants. Also, data sources for the warehouse (such as legacy systems, operational systems, and others), multi-level architecture for integrating heterogeneous data and understanding and managing summary data. Finally, students will learn strategies for data validation and production issues for warehouse delivery. Prerequisite: CIS 228

CIS 330  Decision Support Systems and Intelligent Systems  (3C)
The purpose of this course is to treat the essentials of discrete-event simulation methodology, and does so in the context of a popular Arena simulation environment. The course contains topics on the simulation modeling methodology and the underpinnings of discrete-event systems, as well as the relevant underlying probability, statistics, stochastic processes, input analysis, model validation and output analysis, and more detailed design for organizational operations and their analysis. All simulation-related concepts are illustrated in numerous Arena examples, encompassing production lines, manufacturing and inventory systems, and Health Information Systems Applications. An introduction into application of Artificial Intelligence techniques in business
will be given and the coverage will extend to include major characteristics of KBSs, the knowledge acquisition and representation, inference techniques, Expert Systems development tools and Case-Based reasoning. 

**Prerequisite:** MATH 233 + CIS 351

### CIS 332 Health Information Systems (3C=3H+0L)

This course covers the sources of health information systems and their relation to health agencies. A study is made of the origin and purpose, content, assembly, analysis and use of medical records. The course will introduce software applications used in HCIS. The student will develop an understanding of the implications of integrated versus interfacing disparate HCIS application, database management and patient privacy issues. The course will examine emerging technology in the areas of rural health care, access to Electronic Medical Records, and Regional Health Information Organizations. Methods of compiling, numbering, filing and retention of health information. 

**Prerequisite:** CIS 228

### CIS 333 IT in Healthcare Applications (3C=3H+0L)

This course discusses many applications of information technology in health care. The course will discuss “paperless hospitals” and all IT topics that contribute to the development of such hospitals. These topics include: electronic medical records, Picture Archiving and Communication Systems (PACS), backup systems, disaster recovery systems, medical equipment interfacing, telesurgery, etc. 

**Prerequisite:** CIS 332

### CIS 334 Information Systems Applications (3C=3H+0L)

This course facilitates students to understand how to use an Enterprise Resource Planning (ERP) system in an organization. Students learn how to configure a large system to support an enterprise with multiple functions and divisions as an application to what they learned in Introductory Information Systems. Current trends and decision making issues are addressed through a cross-functional view of ERP. SAP R/3 will be used as the main tool for implementation and building design alternatives for different types of organizations. 

**Prerequisite:** CIS 351

### CIS 337 Information Security (3C=3H+0L)

This course reviews concepts, theories, methodologies and techniques discussed in IS security literature and practice. These include IS security management, risk analysis and management, physical and logical security, database and telecommunications security, continuity planning and computer abuse. Basic security models will be discussed, namely Bell-Lapadual model, Chinese wall model, etc. Basic concepts of encryption and decryption will also be discussed. 

**Prerequisite:** CIS 211

### CIS 340 Web Applications Development (3C=2H+3L)

This course is a continuation to what students have learned in course Introduction to Web Design. At this advanced stage students will start learning about authoring, distributing, and browsing technologies; role, use, and implementation of current Internet tools; TCP/IP: namespace, connections, and protocols; client/server structures; Web document, format, and protocols; scripting languages, VBScript, JavaScript; Active Server Pages (ASP); indexing and search technologies; Internet resource database and search engines; dynamic content with Java; Security and privacy issues. A set of laboratory experiments will provide hands-on experience in the fore mentioned topics. 

**Prerequisite:** CIS 201

### CIS 345 Operating Systems for Business Applications (3C=3H+0L)

The course will introduce principles of Operating Systems. Decision methods and concepts for determining the types of computer operating systems required for a particular business environment. Main concentration will be on Linux Operating Systems, configuration, use, and main advantages over Windows Operating Systems, including some of the more difficult topics like network settings and graphical interface configuration. Basics of using Linux and the popular text editor VI. Configuring Linux to be used for different kinds of business applications, including multimedia related material. 

**Prerequisite:** CS 211 + CPE 231

### CIS 351 Management Information Systems (3C=3H+0L)

This course introduces the essential of Management Information Systems (MIS). All phases from long-range or strategic management information systems planning to development and operation (maintenance) are addressed from a management point of view. Impact that MIS has on management decision making, managing computing and communication resources, security of information systems, enterprise applications. Tools and applications will be used to master management skills on a live project assignment. Information services will be studied as a separate topic. 

**Prerequisite:** CIS 252

### CIS 383 Operations Research (3C=3H+0L)

This course introduces students to problem modeling and solving using mathematical techniques. The discussed applications are diverse including industry, government, and defense. Topics usually chosen from dynamic, linear, and nonlinear programming; sensitivity analysis, decision theory, Markov chains, queuing theory, inventory control, simulation, network analysis, selected case studies. 

**Prerequisite:** CS 112 + MATH 102

### CIS 385 Modeling and Simulation of Business Cases (3C=3H+0L)

This course covers the concepts of problem formulation, assumption surfacing, cause-effect relationship; qualitative modeling vs. quantitative modeling and scenario generation, modeling and simulation software. The students will be given assignments in the laboratory and will use the software in analyzing real life business cases. 

**Prerequisite:** MATH 233 + CIS 330

### CIS 390 Practical Training (3C)

This course provides students with the chance to experience the work environment before graduation. Students are required to spend a period of 60 working days as an intern in an institution approved by the CIS department. During this period students need to get engaged in business practices with their mentors and observe and experience the business conduct of these institutions. 

**Prerequisite:** Completion of 75 C.H

### CIS 421 Database Applications (3C=2H+3L)

This course is an overview of the use of automated information systems in the management system and its various settings. Object relational model, large objects (multimedia objects, large text objects), SQL99, procedural extensions of SQL, Dynamic SQL, language interfaces with databases, XML and databases. Students will work on a team project to design, implement, and develop an IS application. 

**Prerequisite:** CIS 228 + MATH 241

### CIS 428 Database Administration (3C=3H+0L)

This course provides students with a study of database administration issues such as planning, views integration,
CIS 429 Data Mining (3C=3H+0L)
In this course students will learn about the advances in computer information systems, machine learning, statistics, intelligent systems and methodologies for the automatic discovery of knowledge from large high-dimensional databases. The course covers basic concepts and techniques, including data cleaning, clustering, classification, association rules mining. Finally, the course surveys data mining tools and applications. Prerequisite: MATH 233 + CIS 228

CIS 430 Security and Privacy of Healthcare Information (3C=3H+0L)
This course covers several concepts such as an introduction to privacy and security of healthcare information systems, how to protect the confidentiality of patient information, types of access and the appropriate availability of healthcare information to health care providers, concepts of limiting unauthorized access, standards and specifications that help keeping patient medical information secure in an electronic environment, common data protection issues, and exchanging clinical information between healthcare organizations need to be addressed. Related case studies will be used and administrative issues will be researched and presented by students as the course project. Prerequisite: CIS 351

CIS 442 Business Data Communication (3C=3H+0L)
This course is an introduction to principles of data communications and networking. It covers the telecommunication systems and different protocols and computer networks required to know by business organizations. The coverage extends to communication concepts, transmission media, signal representation and modulation, packet switching and routing, network topology and architecture, network management and Internet protocols TCP/IP. Finally, basic concepts of security in networks are discussed. Prerequisite: CS 211

CIS 450 Management in Healthcare (3C=3H+0L)
This course covers three areas of management: human resource management, knowledge management, and innovation management. The first area covers the topics of recruitment, selection, training and performance management. The second area covers the topics of KM models, knowledge acquisition, knowledge sharing, knowledge representation, knowledge repositories and communities of practice. The third area covers the theory of diffusion of innovation and the different models of adoption and innovation barriers. Prerequisite: CIS 351

CIS 451 E-Business (3C=3H+0L)
This course introduces students to the fundamental concepts of electronic business and commerce. It provides an overview of practical uses of the Internet in commercial applications. The topics include navigation of the Internet, designing web applications and publishing web sites. The coverage extends to the concepts of e-retailing, e-stock trading, e-publishing and e-banding. The discussion of these concepts brings in related issues such as security, privacy, new business processes and cross-border commerce. Prerequisite: CIS 340

CIS 454 Business Planning and Control (3C=3H+0L)
This course is designed to introduce students to Integrating Strategy, Accounting and People. It presents the core areas of management accounting and business planning. It also explores relationships between strategy, management accounting information, and the design of control systems, taking into account the needs of both people and organizations. It includes an integrative approach to business planning and control, specific focus on the design of planning and control systems, key techniques of strategic management, management accounting techniques for operational, managerial and strategic purposes. Prerequisite: CIS 252 + CIS 330

CIS 455 Accounting Information Systems (3C=3H+0L)
This course covers the impact of computerized information systems on accounting and finance, and their effects on daily business operations. People, technology, procedures and controls that together: maintain essential channels of communication, process and control routine business activities, and alert management and others to significant internal and external accounting events. Prerequisite: CIS 454

CIS 456 Financial Information (3C=3H+0L)
This course is designed to introduce students to the nature and the role of accounting information focusing on the company annual reports. It focuses on the role of accounting as an aid to the decision making process. Fundamental analysis approach is covered in analyzing and interpreting a company by investigating its fundamental financial, strategic and human element. More specifically, the course identifies and discusses the various contexts within corporate financial communications, then content, analysis and interpretations of financial data. Prerequisite: CIS 454

CIS 491 Graduation Project I (1C)
This course requires students to gather in groups and decide on a project that needs to be carried out under the supervision of a faculty member. The "Graduation Project Guidelines" set by the department council regulates the steps and the time frame for starting and completing this course. Prerequisite: Completion of 90 C.H

CIS 492 Graduation Project II (2C)
This course is a continuation of CIS 491 and is also subject to the regulations in the "Graduation Project Guidelines". Prerequisite: CIS 491

CIS 493 Special Topics in Computer Information Systems I (1C=1H+0L)
This course grants the CIS department flexibility in offering courses not included in the curriculum. Prerequisite: Department Approval

CIS 494 Special Topics in Computer Information Systems II (2C=2H+0L)
This course grants the CIS department flexibility in offering courses not included in the curriculum. Prerequisite: Department Approval

CIS 495 Special Topics in Computer Information Systems III (3C=3H+0L)
This course grants the CIS department flexibility in offering courses not included in the curriculum. Prerequisite: Department Approval

IS 700 Computer Applications (1C=0H+3L)
This course is designed to help graduate students lacking IT backgrounds to acquire the basic computer skills. The major topics in this course include introduction to computers, computer hardware, computer software, computer viruses, operating systems, word-processing, spreadsheets, presentation software, Internet, World Wide Web, search engines, FTP, telnet and file downloading. Prerequisite: None (for graduate students in medical faculties)