

*Plan 2014/2015*

*Business Information Technology*  
*King Abdullah II School for Information Technology*  
*University of Jordan*

*Curriculum for B.Sc.*  
*in*  
*Business Information Technology*

*The Academic Degree: B.Sc. in Business Information Technology*

*A. Contents:*

*The curriculum for the department of Business Information Technology consists of (132) credit hours as follows: -*

<i>Sequence</i>	<i>Requirement type</i>	<i>Credit Hours</i>
<b>1</b>	<b>University Requirements</b>	<b>27</b>
<b>2</b>	<b>Faculty Requirements</b>	<b>24</b>
<b>3</b>	<b>Specialization Requirements</b>	<b>81</b>
<b>Total</b>		<b>132</b>

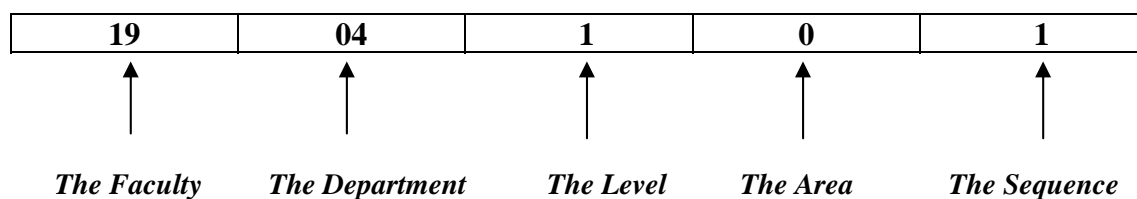
*B. Department Codes:*

<i>Code</i>	<i>Department</i>
<b>1</b>	<b>Computer Science (CS)</b>
<b>2</b>	<b>Computer Information Systems (CIS)</b>
<b>3</b>	<b>Business Information Systems (BIS)</b>
<b>4</b>	<b>Business Information Technology (BIT)</b>

**C. Area Codes-:**

<b>Area Code</b>	<b>Specialization</b>	<b>Area Code</b>	<b>Specialization</b>
<b>0</b>	<b>General</b>	<b>5</b>	<b>Applications</b>
<b>1</b>	<b>Languages</b>	<b>6</b>	<b>Distributed Systems And Communications</b>
<b>2</b>	<b>Information Systems And Management</b>	<b>7</b>	<b>Systems Development</b>
<b>3</b>	<b>Hardware Components And Based Erect</b>	<b>8</b>	<b>Specialized Topics</b>
<b>4</b>	<b>Theoretical Erect</b>	<b>9</b>	<b>Special Topics And Project</b>

**- Meaning of Course Code:**



**Example:**      **1904101**      **Fundamentals of Information Technology**

*First: University Requirements (27): Credit Hours as follows:*

*A- Obligatory Courses: (12) Credit Hours as follows:*

Course Code	Course Name	Credit Hours
1501100	Arabic Communication Skills	3
1502100	English Communication Skills	3
2200100	Military Sciences	3
2300100	National Education	3

*B- Elective Courses: (15) Credit Hours as follows:*

### **The first area : Humanities**

Course Code	Course Name	C.H.	Course Code	Course Name	C.H.
1041100	Legal Culture	3	2301100	Creative Writing	3
401100	Islamic Culture	3	807100	Introduction to library and Information Science	3
402100	Islamic System	3	1132100	Sport and Health	3
2302102	History of Human Civilization	3	2001100	Art Appreciation	3
1601105	Management Skills	3	2200103	Foreign Language	3
1032100	Human Rights	3			

### **The second area : Social and Economic Sciences**

Course Code	Course Name	C.H.	Course Code	Course Name	C.H.
2302104	History of Jordan and Palestine	3	2307100	Principles of Psychology	3
1607100	Public Political Economy	3	2304100	Geography of Jordan	3
2308100	Principles of Political Science	3	2601100	Jordan Monuments	3
2303100	Logic and Critical Thinking	3	2701100	Principles of Social Work	3
2305100	Introduction to Sociology	3	1052100	Jerusalem city	3
1605100	Introduction to e-commerce	3			

### **The third area: Science and technology, agriculture and health**

Course Code	Course Name	C.H.	Course Code	Course Name	C.H.
505100	Principles of Public Health	3	710100	First Aid	3
905100	Principles of General Safety	3	905101	Jordanian Industries	3
342100	Science and Society	3	603100	Human Nutrition	3
641100	Home Garden	3	305100	Environment	3
1904100	Social Media	3			

***Second: Faculty Requirements (24): Credit Hours***

***A- Obligatory Courses: (24) Credit Hours as follows:***

<b>Course No.</b>	<b>Course Name</b>	<b>Theoretical</b>	<b>Credit Hours</b>	<b>Pre Required</b>
<b>0301101</b>	<b>Calculus-1</b>	<b>3</b>	<b>3</b>	<b>-</b>
<b>1901101</b>	<b>Discrete Mathematics</b>	<b>3</b>	<b>3</b>	<b>-</b>
<b>1931102</b>	<b>Computer Skills for Scientific Faculties</b>	<b>3</b>	<b>3</b>	<b>Pass Qualifications Exam or 1902099</b>
<b>1901233</b>	<b>Data Structures-1</b>	<b>3</b>	<b>3</b>	<b>1931102</b>
<b>1902202</b>	<b>Documentation and Ethics</b>	<b>3</b>	<b>3</b>	<b>1904101</b>
<b>1902223</b>	<b>Introduction to Database Systems</b>	<b>3</b>	<b>3</b>	<b>1901233</b>
<b>1904101</b>	<b>Fundamentals of Information Technology</b>	<b>3</b>	<b>3</b>	<b>-</b>
<b>1904121</b>	<b>Web Applications Development-1</b>	<b>3</b>	<b>3</b>	<b>1904101</b>
<b>1900010</b>	<b>Ethics and skills of university life</b>	<b>-</b>	<b>-</b>	

***B- Elective courses: None***

***Third: Specialization Requirements (81): Credit Hours as follows:***

***A. Obligatory Courses: (69) Credit Hours as follows:***

<i>Course No.</i>	<i>Course Name</i>	<i>Week Hours</i>		<i>Credit Hours</i>	<i>Pre Required</i>
		<i>Theoretical</i>	<i>Practical</i>		
1904232	Management Information Systems	3	-	3	1904101
1904255	Statistical Packages	3	-	3	1901101
1904332	Decision Support Systems	3	-	3	1904371
1904341	Operations Research	3	-	3	1904255 or 301131
1904351	Enterprise Resource Planning Systems	3	-	3	1904341 or 301131
1904252	Web Publishing	3	-	3	1904121
1904353	Web Application Development 2	3	-	3	1904121
1904354	E -Business	3	-	3	1904353
1904484	Document Analysis & Recognition	3	-	3	1901101 and 1901341
1904453	Semantic Web	3	-	3	1904371
1904334	E-Business Security	3	-	3	1904353
1904442	Simulation in Business	3	-	3	1901233
1904481	Total Quality Management	3	-	3	1902371 and 1904255
1904496	Project 1	0	-	0	Success 90 hours
1904497	Project 2	3	-	3	1904496
1904498	Training	-	-	0	Success 90 hours
1902371	Introduction to Software Engineering	3	-	3	1902223
1902474	System Analysis and Design	3	-	3	1902223
1901341	Theory of Algorithms	3	-	3	1901233
1901473	Operating Systems	3	-	3	1901233
1901362	Computer Networks 1	3	-	3	1901233
1904371	Business Intelligence	3	-	3	1904255
1601102	Principles of Business Management	3	-	3	-
1602101	Principles of Accounting (1)	3	-	3	-
1607110	Principles of Microeconomics	3	-	3	-

***B - Elective Courses: (12) Credit Hours selected from the following list:***

<b><i>Course No.</i></b>	<b><i>Course Name</i></b>	<b><i>Week Hours</i></b>		<b><i>Credit Hours</i></b>	<b><i>Pre Required</i></b>
		<b><i>Theoretical</i></b>	<b><i>Practical</i></b>		
1904235	Information Resource Management	3	-	3	1904232
1904323	Knowledge Management Systems	3	-	3	1904232
1904345	Computer Ethics	3	-	3	1904232
1904355	E- Learning& Applications	3	-	3	1904353
1904357	E -Government	3	-	3	1904353
1904434	Information Security Risk Management	3	-	3	1901362
1904458	Software Packages	3	-	3	1901233
1904472	IT Project Management	3	-	3	1902371
1904485	Special Topics	3	-	3	1901233
1901461	Computer Networks-2	3	-	3	1901362
1902211	Object Oriented Programming 1	3	-	3	Pass qualification exam or 1902099
1902351	Multimedia	3	-	3	1902211
1904382	Information Retrieval	3	-	3	1904371
1904211	Mobile Programming	3	-	3	1904353
1904486	Enterprise Application Development	3	-	3	1901473
1904415	Database Languages & Tools	3	-	3	1902223

***Courses Offered By BIT Department:***

<b>Course No.</b>	<b>Course Name</b>	<b>Week Hours</b>		<b>Credit Hours</b>	<b>Pre Required</b>
		<b>Theoretical</b>	<b>Practical</b>		
1904211	Mobile Programming	3	-	3	1904353
1904232	Management Information Systems	3	-	3	1904101
1904235	Information Resource Management	3	-	3	1904232
1904255	Statistical Packages	3	-	3	1901101
1904252	Web Publishing	3	-	3	1904121
1904323	Knowledge Management Systems	3	-	3	1904232
1904334	E-Business Security	3	-	3	1904353
1904332	Decision Support Systems	3	-	3	1904371
1904341	Operations Research	3	-	3	1904255 or 301131
1904345	Computer Ethics	3	-	3	1904232
1904351	Enterprise Resource Planning Systems	3	-	3	1904341 or 301131
1904353	Web Application Development 2	3	-	3	1904121
1904354	E -Business	3	-	3	1904353
1904355	E- Learning& Applications	3	-	3	1904353
1904357	E –Government	3	-	3	1904353
1904371	Business Intelligence	3	-	3	1904255
1904484	Document Analysis & Recognition	3	-	3	1901101 and 1901341
1904382	Information Retrieval	3	-	3	1904371
1904486	Enterprise Application Development	3	-	3	1901473
1904415	Database Languages Tools	3	-	3	1902223
1904434	Information Security Risk Management	3	-	3	1901362
1904442	Simulation in Business	3	-	3	1901233
1904453	Semantic Web	3	-	3	1904371
1904458	Software Packages	3	-	3	1901233
1904472	IT Project Management	3	-	3	1902371
1904481	Total Quality Management	3	-	3	1902371 and 1904255
1904485	Special Topics	3	-	3	1901233
1904496	Project 1	0	-	0	Success 90 hours
1904497	Project 2	3	-	3	1904496
1904498	Training	-	-	0	Success 90 hours

## Supervisory Plan

### First Year:

<i>First Semester</i>			<i>Second Semester</i>		
<i>Course No.</i>	<i>Course Name</i>	<i>Credit Hours</i>	<i>Course No.</i>	<i>Course Name</i>	<i>Credit Hours</i>
0301101	Calculus 1	3	1931102	Computer Skills for Scientific Faculties	3
1904101	IT Fundamentals	3	-	University Requirements	3
1901101	Discrete Math	3	1904121	Web Application Development 1	3
1601102	Principles of Business Management	3	1904232	Management Information Systems	3
-	University Requirements	3	1904255	Statistical packages	3
		<b>15</b>			<b>15</b>

### Second Year:

<i>First Semester</i>			<i>Second Semester</i>		
<i>Course No.</i>	<i>Course Name</i>	<i>Credit Hours</i>	<i>Course No.</i>	<i>Course Name</i>	<i>Credit Hours</i>
1901233	Data Structure 1	3	1904252	Web publishing	3
1904341	Operations research	3	1902223	Introduction to Database Systems	3
1904371	Business Intelligence	3	1902202	Documentation & Ethics	3
1904353	Web Application Development 2	3	1901341	Algorithms theory	3
-	University Requirement	3	1904332	Decision support systems	3
-	University Requirement	3	-	University Requirement	3
		<b>18</b>			<b>18</b>



***Third Year:***

<i>First Semester</i>			<i>Second Semester</i>		
<i>Course No.</i>	<i>Course Name</i>	<i>Credit Hours</i>	<i>Course No.</i>	<i>Course Name</i>	<i>Credit Hours</i>
1901473	Operating systems	3	1902474	System analysis and design	3
1904453	Semantic Web	3	1904354	E-business	3
-	University Requirements	3	1602101	Principles of Accounting (1)	3
1902371	Software engineering	3	-	Major elective requirement	-
1607110	Principles of Microeconomics	3	1904334	E-business security	3
1901362	Computer Networks 1	3	-	Major elective requirement	3
		18			18

*Student can take training (1904498 with 0 credit hours) after completing 90 credit hours.*

***Fourth Year:***

<i>First Semester</i>			<i>Second Semester</i>		
<i>Course No.</i>	<i>Course Name</i>	<i>Credit Hours</i>	<i>Course No.</i>	<i>Course Name</i>	<i>Credit Hours</i>
-	University Requirements	3	1904442	Simulation in business	3
1904351	Enterprise resource planning systems	3	1904481	Total quality management	3
-	Major elective requirement	3	-	Major elective requirement	3
1904484	Document analysis and recognition	3	1904497	Project 2	3
1904496	Project 1	0	-	University Requirements	3
-	University Requirements	3			
		15			15

*Transition Plan for Business Information Technology department*

Old Plan		New Plan	
Course Number	Course Name	Course Number	Course Name
1903101	IT Fundamentals	1904101	IT Fundamentals
1903121	Web Application Development 1	1904121	Web Application Development 1
1903232	Management Information Systems	1904232	Management Information Systems
1903251	Manufacturing information systems	1904351	Enterprise resource planning systems
1903341	Operations Research	1904341	Operations Research
1903352	Web publishing	1904252	Web publishing
1903354	E-business	1904354	E-business
1903442	Simulation in business	1904442	Simulation in business
1903481	Quality management	1904481	Total quality management
1903498	Training	1904498	Training
1903235	Information resources management	1904235	Information resources management
1903332	Decision support systems	1904332	Decision support systems
1903345	Computer ethics	1904345	Computer ethics
1903353	Web Application Development 2	1904353	Web Application Development 2
0301131	Principles of Statistics	1904255	Statistical packages
1903356	Statistical packages	1904255	Statistical packages
1903415	Database systems and tools	1904415	Database Languages and tools
1903458	Software packages	1904458	Software packages
1933471	Business intelligence	1904371	Business intelligence
1903483	E-business requirements	1904472	IT project management
1903485	Special topics	1904485	Special topics
		1904334	E-business security
		1904484	Document analysis and recognition
		1904211	Mobile programming
		1904323	Knowledge management systems
		1904355	E-learning and its applications
		1904357	E-government
		1904453	Semantic web
		1904382	Information Retrieval
		1904496	Project 1
1903495	Project	1904497	Project 2
		1904486	Enterprise Application Development
		1904434	Information Security Risk Management

## ***Business Information Technology Department Courses Description***

### **Principles of Business Management (1601102)**

(Prerequisite: None)

This course critically presents the evolution of management thought, through the study of the various management schools, and the functions of the management process i.e.: planning, organizing, leading / directing and controlling. It also provides an overview of the various functional departments in the organization, such as: production, marketing, finance, human resource management

### **1602101 Principles of Accounting (1) (1602101)**

(Prerequisite: None)

The course exposes business students to the basic principles and concepts of financial accounting. The course covers the conceptual foundation of accounting, the basic steps in the accounting cycle, accounting measurements of Cash and Cash Equivalents, Accounts and Notes Receivable, Inventory, Property, Plant, and Equipment, and Intangible Asset.

### **1607110 Principles of Microeconomics**

(Prerequisite: None)

The course covers fundamental ideas such as scarcity, opportunity cost, market and prices, the analytical tools of microeconomics consumer, producer, and cost theories, market structure under perfect competition, monopoly, monopolistic competition, and oligopoly

### **1901461 Computer Networks-2**

(Prerequisite 1901362)

This course explains and discusses advanced concepts of computer networks, including: advance Wireless networks; VLANs, port-based VLAN, MAC-address-based VLAN, layer three information based VLAN; Routing protocol, RIP protocol, OSPF protocol; Advanced TCP, silly window syndrome, Adaptive timeout; Network security, confidentiality, authentication, access control, integrity; multimedia networking, SIP protocol, RTP protocol, RTCP protocol; Network management, SNMP protocol, SIM protocol, MIB protocol; Asynchronous Transfer Mode (ATM)

### **Management Information Systems (1904232)**

(Prerequisite 1904101)

This course provides students with an understanding of the Fundamentals of an Information System including Types and levels of Management Information Systems (MIS). It also gives students an understanding of applications, information, and management in a business environment. A study of how information technology is used as a solution for organizational and management challenges including global management, planning, and information change;

Emphasis on emerging industry trends such as E-Commerce and E-Business. Security and protection challenges in e-business technologies.

**Statistical packages (1904255)**

(Prerequisite 1901101)

Upon successful completion of this course, students will be familiar with basic rules of probability and will be able to use them in modeling uncertainty in obtaining and recording data. They will be able to utilize graphical and numerical summaries of data in understanding data generating processes. They will understand the logic of statistical inference and will be able to apply common inferential procedures. Students will be exposed to the computational aspects of statistics through the use of calculators, spreadsheet programs or special purpose data analysis packages such R, SPSS, or MATLAB. Weekly lab session.

**Decision Support Systems (1904332)**

(Prerequisite 1904371)

This course introduces students to some of the main concepts and theories that have emerged in the field of "decision support systems". Decision Support Systems (DSS) represent a powerful class of IT that is specifically designed to assist the decision maker in the current data-rich but information-poor environment. DSS applications have the effect of enhancing the efficacy of decisions, particularly in highly uncertain, constrained, complex and dynamic environments, as well as increasing decision-making speed, quality, traceability and consensus. In the class work, students will be asked to model and analyze business case studies using specialized computer software tools. The course work will help students to gain experience and better understanding of deploying such systems in real-time decision making in business settings, and their use off-line in strategy and policy development. Weekly lab session.

**Operational Research (1904341)**

(Prerequisite 1904255 or 301131)

This course emphasizes the use of quantitative methods and techniques for effective decision-making. Model formulations and applications are used in solving business decision problems. Topics include: Linear Programming, Transportation, Assignment, CPM/PERT techniques, and Game Theory. The course is application oriented, it emphasizes learning by doing. Analytic techniques and computer packages will be used to solve problems facing business managers in decision environments. Weekly lab session.

**Enterprise Resource Planning Systems (1904351)**

(Prerequisite 1904341 or 301131)

This course is dealing with the new type of information technology which is called the first generation of enterprise software. This software will integrate all enterprise functions/departments in one information system. Each business function will be represented in ERP system by one Module and all modules are functioning in integrated form achieving the best practices in horizontal data processing. The course includes introduction about the development of information systems in enterprises, master production schedule (MPS), bill of materials (BOM), inventory management, material requirements planning (MRP), capacity requirements planning (CRP), and production activity control (PAC). Weekly lab session.

**Web publishing (1904252)**

(Prerequisite 1904121)

The explosion of Internet technologies is revolutionizing the way that people do business, communicate and live. Millions of Internet users access unprecedented resources, send and receive messages, perform research and purchase products worldwide. Buying and selling of products or services over the Internet, known as e-commerce, is rapidly gaining significant portion of the global economy and playing a pivotal role in shaping and enhancing its growth. Therefore, information technology students need to understand how the Internet works and be able to design, implement and configure its services and applications effectively to meet customer requirements. The emphasis of this course would be mainly on server-side programming by developing and deploying web applications using ASP.NET and ADO.NET in VisualBasic.NET. Also client-side scripting languages such as JavaScript along with DHTML and XML would be covered for introducing more dynamic functionality, form validation and server communication. Weekly lab session.

**Web Application Development 2 (1904353)**

(Prerequisite 1904121)

The course introduces the concepts of PHP web server programming. The course aims to provide students with the basic constructs of the PHP language so that they are able to implement anything from basic feedback forms to more advanced database driven shopping cart solutions. Weekly lab session.

**E- Business (1904354)**

(Prerequisite 1904353)

The overall aim of this course firstly, is to build the core knowledge for the main concepts, technologies and platforms that comprise the technical infrastructure of any e-Business web sites, then to use this knowledge and apply it directly to make entrepreneurial e-business plan along with an e-Commerce websites that represents alive demonstration of that business model. Weekly lab session.

**Document Analysis & Recognition (1904484)**

(Prerequisite 1901101 and 1901341)

Document image analysis and recognition (DIAR) is the field that initially started with Optical Character Recognition (OCR) systems, applied for reading numeric check codes. Nowadays, the technology related to DIAR is used in a broad range of applications, where some information has to be extracted from structured documents existing in different media. Typical applications include, among the others, handwritten character recognition, processing of textual web images, and information extraction from digital libraries. In the digital library community a lot of efforts have been devoted to the digitization of paper collections in order to archive them as document image collections. Large digital archives are currently available; however their full fruition can be achieved only by accessing the information that is embedded in the digital image. The simple application of OCR packages can only partially solve these problems, both for the difficulty of obtaining clean converted text and for the lack of structural description of the document. Therefore, DAR tackles these problems by layout analysis methods and document image retrieval approaches. Weekly lab session.

**Information Retrieval (1904382)**

(Prerequisite 1904371)

The course aims at studying the theory, design, and implementation of text-based information systems. The course introduces IR core concepts on an abstract level, in addition to a design and an implementation of an IR system utilizing the acquired knowledge from the course. The course introduces several state-of-the-art IR concepts, as well as, trendy case studies in modern IR. After this course, students are expected to be able to design and implement a fully functional text-based retrieval system utilizing the acquired knowledge from this course. Weekly lab session.

**Mobile Programming (1904211)**

(Prerequisite 1904353)

This course introduces students to understand what a mobile commerce and mobile business are. Moreover, it covers the different mobile operating systems that operate in the market. In addition, it introduces the Android Developing Kit or any other mobile programming platform in order to mobile applications. Weekly lab session.

**Database Languages & Tools (1904415)**

(Prerequisite 1902223)

Develop database applications in a production environment using Oracle Developer 10g utilities, which provides a comprehensive guide for developing database applications using Oracle 10g relational database and Developer 10g application development utilities. Database developments activities include using SQL commands to create tables and insert, update, delete and view data values. This course provides an overview of PL/SQL, explores the Developer 10g application development tools, and describes how to create an integrated database application, also it covers how to display application component in a Web browser and gives an overview to the database administration activities. Weekly lab session.

**E- Business Security (1904334)**

(Prerequisite 1904353)

Having completed this course student will gain such a working knowledge of concepts, principles, techniques and methodologies needed to design and assess security in a complex e-Business environment. The course emphasizes that security of e-Business is best achieved by considering the environment in which e-Business applications need to be implemented and used; this implies that e-Business should be viewed as a complex socio-technical system with three interconnected and interacting elements: stakeholders, enabling technology, and business processes. Therefore, it has been designed to include several topics covering issues such as the nature of e-Business security, information security services for e-Business systems, enterprise security architecture design, e-Business security protocols, web security tools and secure programming techniques, perimeter security such firewall technologies, Intrusion detection/prevention systems, SIEM technologies, security requirement engineering and human factors affecting e-Business security. Weekly lab session.

**Simulation in Business (1904442)**

(Prerequisite 1901233)

The purpose of the course is to have students understand the general principles of simulation model design and concepts of computer simulation. The course introduces students to simulation types, mathematical model types and simulation software and languages.

The course covers in details simulation of discrete system (Discrete Event Simulation and simulation by different equations) and simulation of continuous system using differential equations with practical examples in management, banking, manufacturing and computer networks. Weekly lab session.

**Total Quality Management (1904481)**

(Prerequisites 1902371 and 1904255)

This course introduces students to the use of quality management (QM) principles to the fast-paced, dynamic, and global software (Product) development. Software Engineering Standards in Testing and Quality Control and Assurance are also introduced. Metrics are covered with real-life examples. The metrics include; the Control charts, defect density, reliability, decision making metrics and others. Weekly lab session.

**Project 1 (1904496)**

(Success 90 hours)

Project includes theoretical and practical aspects in Business information technology; the first stage of the graduation project, includes project proposal, analysis and preparation, and project design stages. A report at the end of each stage should be delivered to the department and the supervisor.

**Project 2 (1904497)**

(Prerequisite 1904496)

It includes the second stage of the graduation project, which covers the implementation, testing and evaluation stages, and completing the project in its final version. A documentation of the whole project should be delivered to the department and the supervisor. Finally, the project should be submitted for final examination.

**Training (1904498)**

(Prerequisite Success 90 hours)

The student must be trained in an institution, for at least 6 weeks. The student must provide a report from the institution that shows the efficiency of this training, According to the regulations of the Dean's Council of the Faculty's Departments, or get a certificate in one of the information technology fields from a recognized institute.

**Information Resources Management (1904235)**

(Prerequisite 1904232)

The goal of this course is to assist students in becoming knowledgeable participants in information systems decisions. Becoming a knowledgeable participant means learning the basic concepts of information resources and knowledge management in order to feel confident to choose appropriate decisions. Being able to fully understand what the Information systems strategy triangle is and how to evaluate organizational impacts of information systems, and how to co-op with rapid IT changing business processes and knowing how to build a suitable IT architecture for any business application.

**Knowledge Management systems (1904323)**

(Prerequisite 1904232)

Knowledge management can be broadly defined as the identification and management of processes for leveraging the intellectual capital within the organization and across employees. Knowledge Management Systems exploit information and technology based applications which enhance knowledge workers' work, enable knowledge life cycle and apply the available resources efficiently. Participants in this course will have the opportunity to study the theory and practical applications of knowledge management within organizations from a technology perspective.

**Computer Ethics (1904345)**

(Prerequisite 1904232)

This course covers various topics such as Professional and Ethical Responsibilities, Privacy, Intellectual Property and copyright, Piracy, Systems management and hacking, Viruses, Liability, Computer Crime, and freedom of speech. Moreover, it discusses the Ethical, social, political, legal and economic aspects of the application of computers.

**E- Government (1904357)**

(Prerequisite 1904353)

This course introduces the ways in which internet technologies are affecting how people interact with government, and how governments, in turn, are using and managing these technologies to better provide information and services to the public. It introduces the technology of e-government with an in-depth examination of current government development and management challenges in the delivery of services and information, electronically. We will also explore for the skills and concepts needed to effectively manage e-government projects and programs. Weekly lab session.

**Information Security Risk Management (1904434)**

(Prerequisite 1901362)

Having completed this course student will gain such a working knowledge of concepts, principles, techniques and methodologies needed to manage information security related risks within organizations. Therefore, it has been designed to provide the student with the required skills to perform a systematic information security risk management process including identification and evaluating operationally critical threats, assets, and vulnerabilities that are often rooted in organizational and business concerns. Topics include threats, vulnerabilities, exploits, and countermeasures, standards and best practices, risk assessment and mitigation, business impact analysis, and business continuity and disaster recovery planning and evaluating perimeter security such as firewall technologies, Intrusion detection/prevention systems, SIEM technologies. Weekly lab session.

**Semantic Web (1904453)**

(Prerequisite 1904252)

The Web Semantic course will introduce the notion of the Web Semantic, provide an overview of the underlying theory and technology, cover existing technologies and practices, and highlight current and potential applications. The goal of the Semantic Web is in semantic representation and reasoning of data using ontologies. Therefore, the course will cover different aspects of Ontology representation, creation, design, reasoning, programming and applications. Weekly lab session.

**E- Learning & Applications (1904355)**

(Prerequisite 1904353)

Electronic learning is considered to be a major educational innovation; it becomes more and more important in today's knowledge-based economy. This course will provide the students with a basic introduction to electronic learning concepts, techniques and technologies, Historical background and current trends in e-learning, Concepts and foundations of best practices for successful online learning, learning management systems, and web-based technology tools. Many applications of e-learning will be discussed with a wide variety of online communication tools. Weekly lab session.



### **Software Packages (1904458)**

(Prerequisite 1901233)

In order to develop students' skills which will enable them to get professional certificate, this course will introduce students to some certified software packages like SAP/3, Merlin MRP, Microsoft Management Packages and or any other software package that can add value to students. Weekly lab session.

### **Business Intelligence (1904371)**

(Prerequisite 1904255)

Business Intelligence Systems have become increasingly important in today's competitive environment. According to recent studies, companies that use BI and manage their data as a strategic resource and invest in its quality are already pulling ahead in terms of reputation and profitability.

This course will examine Business Intelligence (BI) technologies that help a company to improve its business. It discusses BI topics from both managerial and technical perspectives. Managerial perspectives discuss how BI affects the organization's decision-making process, while technical perspectives discuss the foundation for an intelligent system (i.e., Machine learning, Warehousing, Online Analytical Processing, Data Mining). Practical exercises and projects will be assigned to enhance students' experience in business intelligent systems. Weekly lab session.

### **IT Project Management (1904472)**

(Prerequisite 1904371)

In order to be successful in our IT projects it is imperative that we apply formal project management methods and tools to all IT project-based work. Also the formal methods and tools of project management need to evolve to address the changes in modern software engineering and our high-tech global workplaces. In the past, project success was defined too narrowly as simply meeting time and cost constraints for a given scope of work. However, in order for an IT project to be completely successful, that basic definition of success needs to be extended. This extension is particular with regard to product quality, stakeholder satisfaction, security, organizational human capital, and long-term factors such as maintainability and adaptability. Weekly lab session.

### **Special Topics (1904485)**

(Prerequisite 1901233)

Selected Topics in advanced areas of Business Information Technologies, Report and Documentation will be discussed in this course.

### **Enterprise Application Development (1904486)**

(Prerequisite 1901473)

This course explores advanced application development techniques in a large enterprise wide setting. Topics include component development and reuse, distributed object technologies, multi-tier applications, data marshaling, transaction processing, concurrency problems and resolutions, load balancing and tuning, and application installation and deployment issues. Weekly lab session.

### **Web Application development 1 (1904121).**

(Prerequisite 1904101)

This course aims to improve students' ability in developing web applications. Students will have strong knowledge about the methods and tools used in developing web applications. Students will know how the World Wide Web works to be able to design, implement and configure its services and applications effectively. Also students should work on emerging web technologies available in the market. topics include XHTML, CSS and JavaScript. Weekly lab session.

**IT Fundamentals (1904101)**

(Prerequisite none)

This course introduces the students to the Information Technology components available in all computer areas including computer hardware, software, telecommunications and networks multimedia, Internet applications, Operating systems including Microsoft Windows and open source software's (e.g. Linux), E-business, system software and applications, information system analysis and development, problem solving including algorithms, flowchart, and pseudo code. It also gives an insight to the principles of numbering systems including decimal, binary, octal, hexadecimal numbers, how to convert numbers from one base to another, and to be able to do arithmetic's using these numbering systems.

**Object Oriented Programming -1 (1902211)**

(Prerequisite 1902099 or Pass Exam)

Object-Oriented (OO) Programming Environment; OO Building Blocks; Input/Output; Loops; Decisions; Functions; Arrays and Strings; Data structures; Encapsulation; Advanced variables; Object Oriented Programming; Useful OO features; Classes and objects; Inheritance; Polymorphism; Exceptions handling; Threads; Files; Writing programs in JAVA languages. Weekly practice in the lab. Weekly lab session.

**Multimedia (1902351)**

(Prerequisite 1902211)

Introduction: basic concepts of multimedia; Media types; Concepts and techniques; Multimedia information servers; Design support; Production and evaluation of multimedia information servers; Software and hardware requirements; Image compression; Image database: Feature-based retrieval, content-based retrieval; Audio signal processing; Speech analysis; Music analysis and synthesizing; Teleconferencing and video compression; Animation; Virtual reality; Web publishing; Multimedia Programming: Composition mechanisms, metaphors; Synchronization: aspects of synchronization, techniques; Interaction; Case study. Weekly practice in the lab.

**System Analysis and Design (1902474)**

(Prerequisite 1902223)

Introduction to systems development; Development life cycle; System Development feasibility; Development of fact finding methods; Context diagram; Data flow diagram; Decision tables and trees; Data dictionary; Installation; Training; Development Tools: Documentation, Maintenance, Conceptual design, DB design, Reverse engineering, Graphical user interface, Systems life cycle, System conversion, System charts and flow of control; Case study. Weekly practice in the lab.

**Introduction to Software Engineering (1902371)**

(Prerequisite 1902223)

This course introduces students to the concept of software engineering and presents the notions of software engineering processes and management. The course covers the processes, techniques and deliverables that are associated with requirements engineering: software requirements, system modelling, formal specification and techniques for specifying dependability. In addition, this course presents software design and design processes.

**Theory of Algorithms (1901341)**

(Prerequisite 1901233)

Definition of an algorithm; Algorithm design and techniques, such as sequential versus divide-and-conquer; Algorithm analysis; Concept of basic operations; Concept of worst, best, and average case analysis; Complexity analysis: big O, Omega and Theta notations; Recurrence equations and recursive algorithms; Searching and sorting algorithms; Concept of graphs; Graph algorithms.

## **Computer Networks -1 (1901362)**

(Prerequisite 1901233)

This course explores key concepts and essential technologies of computer networks and broad range of topics in networking, including: General overview: Networks applications, Network classifications and topologies, Network layers, Wireless networks, IEEE 802.11, Mobile IP, Channel performance measures, transmission media, Communication Network Protocols and architecture; Data link layer: framing, error detection and correction, CSMA/CD, LAN IEEE standards; Network layer: IP service model, IP Addressing, subnetting, Host configuration DHCP, ARP Protocol, ICMP protocol; Transport layer: UDP protocol, TCP protocol, TCP reliable transfer and sliding window, TCP flow and congestion control; Application layer: DNS protocol, NAT protocol, HTTP protocol, persistent and non-persistent HTTP connection. Weekly practice in the lab.

## **Operating Systems (1901473)**

(Prerequisite 1901233)

Definition and role of the operating systems; History of operating systems and development; Functionality and structuring methods of a typical operating system; Concepts of process versus thread; Scheduling, dispatching and context switching; Concurrent execution: the "mutual exclusion" problem and some solutions; Deadlocks: causes, conditions, and methods for resolution; Parallel and distributed processing, synchronization and Remote Procedure call, Memory management; Virtual memory management; Mass-storage structure., and Weekly lab session.