



University/Academy: Arab Academy for Science and Technology & Maritime Transport

Faculty/Institute: College of Computing and Information Technology

Program: B.Sc. in Computer Science

Course title	Introduction to Information Systems
Course code	IS171

Form no. (11A) Knowledge and skills matrix for a course

Course content	Week study	Knowledge	Intellectual skills	Professional skills	General skills
<u>Course Description and Introduction</u>	1				
<u>Foundations of IS in Business</u> <ul style="list-style-type: none"> ▪ The Fundamental Roles of IS in Business ▪ Trends in IS ▪ The Role of e-Business in Business ▪ Types of IS 	2	<ul style="list-style-type: none"> ▪ Know the role of information systems in modern organizations. ▪ Define the major types of information systems. 	<ul style="list-style-type: none"> ▪ Explain why knowledge of information systems is important for business professionals. ▪ Demonstrate familiarity with the available career opportunities in information systems. 	<ul style="list-style-type: none"> ▪ Illustrate how the business applications of information systems can support a firm's business processes, managerial decision making, and strategies for competitive advantage. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)
<u>Foundations of IS in Business (Cont.)</u> <ul style="list-style-type: none"> ▪ Managerial Challenges of IT 	3	<ul style="list-style-type: none"> ▪ Understand the concept of a system and how it relates to information systems. 	<ul style="list-style-type: none"> ▪ Identify several challenges that a business manager might face in managing the 	<ul style="list-style-type: none"> ▪ Provide examples of the components of real world information systems. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world

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<ul style="list-style-type: none"> ▪ System Concepts ▪ Components of an IS ▪ IS Resources ▪ IS Activities ▪ Recognizing IS 		<ul style="list-style-type: none"> ▪ Understand concepts related to IS components, resources, and activities. 	<p>successful and ethical development and use of information technology in a business.</p>		<p>cases.</p> <ul style="list-style-type: none"> ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)
<p>Computer Hardware</p> <ul style="list-style-type: none"> ▪ A Brief History of Computer Hardware ▪ Types of Computer Systems ▪ Microcomputers ▪ Midrange Systems ▪ Mainframe Computer ▪ Supercomputers ▪ The Next Wave of Computing ▪ The Computer System 	4	<ul style="list-style-type: none"> ▪ Understand the history and evolution of computer hardware. ▪ Understand the main differences between computer systems categories. ▪ Understand the functions of the main components of a computer system. 	<ul style="list-style-type: none"> ▪ Explain the components and functions of a computer system. ▪ Identify the major types and uses of microcomputer, midrange, and mainframe computer systems. 	<ul style="list-style-type: none"> ▪ Give examples of the components and functions of a computer system. ▪ Recommend computer system appropriate for a typical business. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)
<p>Computer Hardware (Cont.)</p> <ul style="list-style-type: none"> ▪ Peripherals ▪ Input Technologies ▪ Output Technologies ▪ Storage Trade-Offs ▪ Semiconductor Memory ▪ Magnetic Disks ▪ Magnetic Tape ▪ Optical Disks ▪ Radio Frequency Identification 	5	<ul style="list-style-type: none"> ▪ Know what is meant by computer peripherals and their types. ▪ Identify the computer systems and peripherals you would acquire or recommend for a business of your choice, and explain the reasons for your selections. ▪ Know about different technologies related to Input, output, storage, and memory 	<ul style="list-style-type: none"> ▪ Outline the major technologies and uses of computer peripherals for input, output, and storage. ▪ Identify a range of hardware technologies 	<ul style="list-style-type: none"> ▪ Recommend computer systems and peripherals appropriate for a typical business. ▪ Select appropriate technology for a typical case. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)

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<u>Computer Software</u> <ul style="list-style-type: none"> ▪ Introduction to Software ▪ Business Application Software ▪ Software Suites and Integrated Packages ▪ Web Browsers ▪ Electronic Mail ▪ Instant Messaging ▪ Weblogs ▪ Word Processing ▪ Desktop Publishing ▪ Electronic Spreadsheets ▪ Presentation Graphics ▪ Personal Information Managers ▪ Groupware ▪ System Software ▪ Operating Systems ▪ Programming Languages ▪ Web Languages 	6	<ul style="list-style-type: none"> ▪ Understand the concept of computer software and software types. ▪ Understand the differences between different categories of application software. ▪ Define operating systems. ▪ Understand issues associated with open source software. ▪ Understand main concepts related to programming languages. 	<ul style="list-style-type: none"> ▪ Identify different software types. ▪ Describe several important trends occurring in computer software. ▪ Explain the purpose of several popular software packages for end-user productivity and collaborative computing. ▪ Describe the functions of an operating system. ▪ Describe the main uses of computer programming software, tools, and languages. 	<ul style="list-style-type: none"> ▪ Illustrate and give examples of several major types of application and system software. ▪ Recommend the appropriate application software appropriate for a typical need. ▪ Suggest suitable programming language to be used with a typical case. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)
<u>7th Week Exam</u>	7				
<u>Data Resource Management</u> <ul style="list-style-type: none"> ▪ Database Management ▪ Fundamental Data Concepts ▪ Database Structures 	8	<ul style="list-style-type: none"> ▪ Understand the data management concept. ▪ Know the main differences between traditional file approach and data base approach to data management. 	<ul style="list-style-type: none"> ▪ Explain the business value of implementing data resource management processes and technologies in an organization. ▪ Outline the advantages 	<ul style="list-style-type: none"> ▪ Assess the implication of using data management techniques in an organization. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing

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<ul style="list-style-type: none"> ▪ Data Resource Management 			of a database management approach to managing the data resources of a business, compared with a file processing approach.		facilities in PC labs (e.g. MS office, open ERP, etc.)
<p><u>Data Resource Management (Cont.)</u></p> <ul style="list-style-type: none"> ▪ Types of Databases ▪ Data Warehouses and Data Mining ▪ Traditional File Processing ▪ The Database Management Approach 	9	<ul style="list-style-type: none"> ▪ Understand main concepts related to Major types of databases, Data warehouses and data mining, Logical data elements, Fundamental database structures, and Database development. 	<ul style="list-style-type: none"> ▪ Explain how database management software helps business professionals and supports the operations and management of a business. 	<ul style="list-style-type: none"> ▪ Illustrate and give examples related to major types of databases, Data warehouses and data mining, Logical data elements, Fundamental database structures, and Database development. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)
<p><u>Telecommunication and Networks</u></p> <ul style="list-style-type: none"> ▪ The Concept of network ▪ Trends in Telecommunications ▪ The Business Value of Telecom. Networks ▪ The Internet Revolution ▪ The Role of Intranets ▪ The Role of Extranets 	10	<ul style="list-style-type: none"> ▪ Understand the concept of a network. ▪ Know the major trends in telecommunication and computer networks. ▪ Define Internet, Intranet, and Extranet and differences between them. 	<ul style="list-style-type: none"> ▪ Identify several major developments and trends in the industries, technologies, and business applications of telecommunications and Internet technologies. ▪ Realize the business value of telecommunication and networks. ▪ Identify the basic components, functions, and types of telecommunications networks used in 	<ul style="list-style-type: none"> ▪ Apply Metcalfe's law in understanding the value of a network. ▪ Illustrate examples of the business value of Internet, intranet, and extranet applications. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)

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			business.		
<u>Telecommunication and Networks (Cont.)</u> <ul style="list-style-type: none"> ▪ Telecomm. Network Model ▪ Types of Telecom. Networks ▪ Digital and Analog Signals ▪ Telecom. Media ▪ Wired Technologies ▪ Wireless Technologies ▪ Telecom. Software 	11	<ul style="list-style-type: none"> ▪ Understand the two forms of peer-to-peer networking. ▪ Understand the fundamentals of wired and wireless network technologies. ▪ Define different network topologies. 	<ul style="list-style-type: none"> ▪ Explain the functions of major components of telecommunications network hardware, software, media, and services. ▪ Explain the concept of client/server networking. ▪ Explain the difference between digital and analog signals. ▪ Identify the various transmission media and topologies used in telecommunications networks. 	<ul style="list-style-type: none"> ▪ Illustrate examples of the computer networks models and different network topologies. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)
<u>12th Week Exam</u>	12				
<u>e-Business Systems</u> <ul style="list-style-type: none"> ▪ Cross-Functional Enterprise App. ▪ What Is CRM? ▪ The Three Phases of CRM ▪ Benefits and Challenges of CRM ▪ What Is ERP? ▪ Benefits and Challenges of ERP ▪ What is a SCM? ▪ The Role of SCM 	13	<ul style="list-style-type: none"> ▪ Identify and understand the cross-functional enterprise systems: ERP, CRM, SCM, TPS, and enterprise collaboration systems. ▪ Understand the need for enterprise application integration to improve the support of business interactions across multiple e-business applications. 	<ul style="list-style-type: none"> ▪ Realize the main differences between different cross-functional enterprise systems. 	<ul style="list-style-type: none"> ▪ Give examples of how cross-functional enterprise systems can provide significant business value to a company. ▪ Give examples of how the Internet and other information technologies support business processes within the business functions of accounting, finance, human resource management, marketing, 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)

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<ul style="list-style-type: none"> ▪ Benefits and Challenges of SCM ▪ Enterprise App. Integration ▪ TPSs ▪ Enterprise Collaboration Sys. ▪ IT in Business ▪ Marketing Systems ▪ Manufacturing Sys. ▪ Human Resource Sys ▪ Accounting Systems ▪ Financial Sys. 				and production and operations management.	
<u>e-Commerce Systems</u> <ul style="list-style-type: none"> ▪ Introduction to EC ▪ The Scope of EC ▪ Essential EC process ▪ Electronic Payment ▪ EC Applications ▪ B2C e-Commerce ▪ B2B e-Commerce ▪ EC Marketplaces 	14	<ul style="list-style-type: none"> ▪ Understand the main idea behind EC. ▪ Understand the process of EC and its components. ▪ Define different types of EC and Internet marketplaces. 	<ul style="list-style-type: none"> ▪ Identify the major categories and trends of e-commerce app. ▪ Identify the essential processes of an e-commerce system. ▪ Realize the benefits and requirements of EC systems. ▪ Identify and explain the business value of several types of e-commerce marketplaces. 	<ul style="list-style-type: none"> ▪ Illustrate and give examples of how EC process is implemented in EC applications 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use different computing facilities in PC labs (e.g. MS office, open ERP, etc.)
<u>Decision Support Systems</u> <ul style="list-style-type: none"> ▪ Information, Decisions, and Management ▪ Information Quality 	15	<ul style="list-style-type: none"> ▪ Understand how DSS can improve decision making in modern organizations. ▪ Know about the different types of DSS. 	<ul style="list-style-type: none"> ▪ Identify the changes taking place in the form and use of decision support in business. ▪ Identify the role and reporting alternatives of 	<ul style="list-style-type: none"> ▪ Assess the implication of using DSS techniques in an organization. ▪ Select appropriate DSS technology in a typical case. 	<ul style="list-style-type: none"> ▪ Show the ability to autonomously read and understand some related real world cases. ▪ Show the ability to use

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<ul style="list-style-type: none"> ▪ Decision Structure ▪ Decision Support Trends ▪ DSS ▪ MIS ▪ OLAP ▪ Using DSS ▪ EIS ▪ Enterprise Portals and Decision Support ▪ KMS ▪ Business and AI ▪ An Overview of AI ▪ Expert Systems ▪ Developing ES 		<ul style="list-style-type: none"> ▪ Understand how online analytical processing can meet key information needs of managers. ▪ Understand the main concepts of AI and Expert systems. 	<p>management information systems.</p> <ul style="list-style-type: none"> ▪ Explain the decision support system concept and how it differs from traditional management information systems. ▪ Explain how Executive information systems, Enterprise information portals, and Knowledge management systems can support the information needs of executives, managers, and business professionals 	<ul style="list-style-type: none"> ▪ Illustrate and give examples of several ways expert systems can be used in business decision-making situations. 	<p>different computing facilities in PC labs (e.g. MS office, open ERP, etc.)</p>
<u>Final Exam</u>	16				

Course Instructor

Name:

Signature:

Head of Department

Name

Signature: