



الجامعة السعودية الإلكترونية
SAUDI ELECTRONIC UNIVERSITY
2011-1432

University Vice-Presidency

College of Computing and Informatics

STUDY PLAN PROJECT
BACHELOR OF SCIENCE IN INFORMATION
TECHNOLOGY

February 2021

**COLLEGE AT A GLANCE:****History:**

A royal decree was issued by the custodian of the Two Holy Mosques, King Abdullah Bin Abdulaziz – Allah bless his soul –, on 10/8/2011 to launch the Saudi Electronic University (SEU) as a government educational institution. Based on the University's vision to align outputs with the labour market needs, the college of Computing and Informatics was established as one of the first colleges that have three departments: Information Technology, Computer Science, and Computing and Informatics to give graduates the knowledge and skill requirements necessary for the labour market by providing optimal academic environment that aims to prepare national specialist cadres in the field of computers. There is no doubt that Information Technology has become the main nucleus in the development process inside public and private organizations in the era of technology and information.

Mission:

To prepare qualified, professional, and excellent talents in the field of computer science and information technology, and contribute in serving the community by offering various learning programs, conducting scientific research that contribute in solving community problems in technology and informatics, as well as offering consultancy and training services in the college fields with the availability of qualified faculty members and excellent learning environment.

Vision:

A pioneer college in education and academic research at local and regional levels in the areas of computer science and information technology and through offering locally and internationally accredited programs using modern learning methods.

Values

- Excellence and innovation.
- Institutional commitment to academic standards



- Total Quality Management (TQM).
- Excellence in Education through continuous evolution.
- Industry and Academia Interaction for community welfare.
- Transparency and objectivity in the work

The CCI college's Goals

1. To keep pace with the academic and scientific advances in international universities in the field of computation and informatics.
2. To increase learners' academic and practical experience in their areas of specialization.
3. To enable graduates to compete in the fields of computation and informatics by providing them cognitive skills.
4. To support continuous development through local and international partnerships.
5. To connect programs through integrated courses that represent the most recent scientific and technological in the field.
6. To integrate academic programs and bridging the gap between applied science and information technology.
7. To participate in offering consultation and training programs in the fields of computer science to promote the college's role in serving the community.

A. PROGRAM IDENTIFICATION AND GENERAL INFORMATION

1. Program title:

Program of Science in Information Technology

2. Total credit hours needed for completion of the program:

130 Credit Units.

3. Award granted on completion of the program:

Bachelor of Science in Information Technology

4. Concentration tracks/pathways or specializations within the program:

1. Cloud Computing
2. Cyber Security
3. Internet of Things

5. Professional occupations



- 1- Software Developer
- 2- Database administrator
- 3- Network Administrator
- 4- Web Administrator and Developer
- 5- Technical support specialist
- 6- Site programmer and developer
- 7- Information system administrator
- 8- IT specialist
- 9- Computer operator
- 10- Computer operation supervisor

B. PROGRAM CONTEXT:

1. Rationales of the program:

The rationales of Bachelor program in Information Technology are summarized in the following points:

- 1- Contributing to the national strategic communication and IT plan.
- 2- The importance of information technology job for Saudi institutions and society.
- 3- The increasing job market needs in the Kingdom of Saudi Arabia for specialized workforce in IT.
- 4- The constant need in the labor market (public and private) to specialists in information technology.
- 5- Few number of Saudi universities offer BSc programs in IT.
- 6- The fulfilment of national high-quality projects, which aim to develop the IT in the
- 7- Kingdom of Saudi Arabia.

2. Relevance of the program to the mission and goals of the institution:

The dependence of modern society and IT applications is growing manifold with every passing year. All nations are striving to equip their populations with latest tools and technologies in the domain of IT and software engineering. The program is designed to support the university mission of providing an excellent and qualified modern education for the kingdom and its population. The BSc in IT offers higher education based on the best applications and technologies of e-learning, to transfer and localize knowledge in the subject of IT.



3. Relationship to other programs:

a. Courses required from other programs

- MATH001 Introduction to Mathematics
- MATH150 Discrete Mathematics
- MATH251 Linear Algebra
- STAT101 Statistics
- SCI101 General Physics 1
- SCI201 General Physics 2
- ENG001 English Language Skills
- ENG103 Technical Writing
- COMM001 Communication Skills
- CI001 Academic Skills
- CS001 Computer Essentials
- ISLM101 Islamic Culture 1
- ISLM102 Islamic Culture 2
- ISLM103 Islamic Culture 3
- ISLM104 Islamic Culture 4

b. Courses provided to other programs

- IT231 Introduction to IT and IS
- IT232 Object Oriented Programming
- IT244 Introduction to Database
- IT245 Data Structure
- IT351 Computer Networks
- IT352 Human Computer Interaction
- IT353 System Analysis and Design
- IT361 Web Technologies
- IT362 IT Project Management
- IT475 Decision Support Systems
- IT476 IT Security & Policies
- IT487 Mobile Application Development

4. Specific enrolment requirements: (IT skills, Language...):

None.



C. MISSION, GOALS & OBJECTIVES AND LEARNING OUTCOMES:

1. Program Mission:

Prepared well-educated and qualified students with the most current knowledge and skills in the various fields of information technology and to build their lifetime learning and careers, meet the labor market needs and conduct scientific research that contributes to the advancement of society's knowledge, solving community issues and meeting of future challenges in Information Technology.

2. Program learning outcomes

The program aims at building cadres able to:

1. Demonstrate a deep understanding of the main concepts and technologies related to information technology.
2. Realize the evaluation and assessment of tasks performed as IT professionals.
3. Describe and analyze the user needs and computing requirements appropriate to problems' solutions.
4. Apply the concepts, methods, tools and technologies mastered during the academic program.
5. Apply theories in modelling and designing IT systems using cutting edge tools and technologies.
6. Apply analysis, design, implementation, testing and evaluation principles of IT solutions to fit industrial requirements and support techpreneurship.
7. Carry out the assigned tasks with quality of work in accordance with international standards.
8. Communicate effectively, both orally and in written form, using appropriate media.
9. Identify the needs for continuous development of professional, legal and ethical skills with the ability to engage all group members.
10. Function effectively on teamwork projects and activities to accomplish a common goal.

3. Program Goals

The main goals of the BSIT program are:

1. Develop a technically proficient workforce capable of carrying out IT solutions to the best practices.
2. Provide students with soft skills and values to effectively communicate and collaborate with others professionally, ethically, legally as well as fulfill the needs of society.
3. Improve students' experience by empowering them with the necessary entrepreneurs' skills to develop innovative IT solutions and perform scientific research.



D. PROGRAM STRUCTURE AND ORGANIZATION

1. Program Structure by kind of requirements:

University requirements: 34 Credit Hours

Course Code	Course Title	Required or Elective	Credit Hours	College or Department
CS001	Computer Essentials	Required	3	Science and Theoretical Studies
ENG001	English Language Skills	Required	16	Science and Theoretical Studies
CI001	Academic Skills	Required	2	Science and Theoretical Studies
MATH001	Fundamentals of Mathematics	Required	3	Science and Theoretical Studies
COMM001	Communication Skills	Required	2	Science and Theoretical Studies
ISLM101	Islamic Culture 1	Required	2	Science and Theoretical Studies
ISLM102	Islamic Culture 2	Required	2	Science and Theoretical Studies
ISLM103	Islamic Culture 3	Required	2	Science and Theoretical Studies
ISLM104	Islamic Culture 4	Required	2	Science and Theoretical Studies
Total			34	

College requirements: 36 Credit Hours

Course Code	Course Title	Required or Elective	Credit Hours	College or Department
IT232	Object Oriented Programming	Required	3	Computing and Informatics



MATH150	Discrete Mathematics	Required	3	Science and Theoretical Studies
SCI101	General Physics 1	Required	3	Science and Theoretical Studies
IT241	Operating Systems	Required	3	Computing and Informatics
IT244	Introduction to Database	Required	3	Computing and Informatics
IT245	Data Structure	Required	3	Computing and Informatics
ENG103	Technical Writing	Required	3	Science and Theoretical Studies
MATH251	Linear Algebra	Required	3	Science and Theoretical Studies
SCI201	General Physics 2	Required	3	Science and Theoretical Studies
IT351	Computer Networks	Required	3	Computing and Informatics
STAT101	Statistics	Required	3	Science and Theoretical Studies
IT499	Practical Training	Required	3	Computing and Informatics
Total			36	

Major requirements: 60 Credits Hours

Course Code	Course Title	Required or Elective	Credit Hours	College or Department
IT231	Introduction to IT and IS	Required	3	Computing and Informatics
IT233	Computer Organization	Required	3	Computing and Informatics
IT352	Human Computer Interaction	Required	3	Computing and Informatics
IT353	System Analysis and Design	Required	3	Computing and Informatics
IT354	Database Management Systems	Required	3	Computing and Informatics



IT361	Web Technologies	Required	3	Computing and Informatics
IT362	IT Project Management	Required	3	Computing and Informatics
IT363	Network Management	Required	3	Computing and Informatics
IT364	IT Entrepreneurship and Innovation	Required	3	Computing and Informatics
IT365	Enterprise Systems	Required	3	Computing and Informatics
IT475	Decision Support Systems	Required	3	Administration and Finance
IT476	IT Security & Policies	Required	3	Computing and Informatics
IT479	Senior Project I	Required	3	Computing and Informatics
IT485	Professional Ethics in IT	Required	3	Computing and Informatics
IT487	Mobile Application Development	Required	3	Computing and Informatics
IT489	Senior Project II	Required	3	Computing and Informatics
Total			60	

Concentration tracks requirements:

1. Cloud Computing: 12 Credits Hours

Course Code	Course Title	Required or Elective	Credit Hours	College or Department
IT471	Introduction to Cloud Computing	Required	3	Computing and Informatics
IT473	Cloud Systems Architecture	Required	3	Computing and Informatics
IT481	Cloud Security	Required	3	Computing and Informatics
IT483	Cloud System Administration	Required	3	Computing and Informatics
Total			12	

2. Cyber Security: 12 Credits Hours



Course Code	Course Title	Required or Elective	Credit Hours	College or Department
IT474	Introduction to Cyber Security and Digital Crime	Required	3	Computing and Informatics
IT478	Network Security	Required	3	Computing and Informatics
IT484	Wireless Sensor Networks	Required	3	Computing and Informatics
IT488	Cyber Forensics	Required	3	Computing and Informatics
Total			12	

3. Internet of Things: 12 Credits Hours

Course Code	Course Title	Required or Elective	Credit Hours	College or Department
IT470	Introduction to IoT	Required	3	Computing and Informatics
IT472	IoT Network Design	Required	3	Computing and Informatics
IT480	Enterprise Internet of Things	Required	3	Computing and Informatics
IT482	IoT Security and Privacy	Required	3	Computing and Informatics
Total			12	

2 - Program Structure by levels:

Year 1

Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
Level 1	CS001	Computer Essentials	3		
	ENG001	English Language Skills	16		
	CI001	Academic Skills	2		
Total			21		

Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
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Level 2	MATH001	Fundamentals of Mathematics	3		
	COMM001	Communication Skills	2		
Total			5		

Year 2

Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
Level 3	IT231	Introduction to IT and IS	3	Pass First Common Year	
	IT232	Object Oriented Programming	3		
	IT233	Computer Organization	3		
	MATH150	Discrete Mathematics	3		
	SCI101	General Physics 1	3		
	ISLM101	Islamic Culture 1	2		
Total			17		

Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
Level 4	IT241	Operating Systems	3	IT233	
	IT244	Introduction to Database	3	IT232	
	IT245	Data Structure	3	IT232	
	ENG103	Technical Writing	3	—	
	MATH251	Linear Algebra	3	MATH150	
	SCI201	General Physics 2	3	SCI101	
Total			18		

Year 3

Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
Level 5	IT351	Computer Networks	3	IT241	
	IT352	Human Computer Interaction	3	IT231, IT245	
	IT353	System Analysis and Design	3	IT245	
	IT354	Database Management Systems	3	IT244	
	STAT101	Statistics	3	—	
	ISLM102	Islamic Culture 2	2	—	
Total			17		



Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
Level 6	IT361	Web Technologies	3	IT352, IT244	
	IT362	IT Project Management	3	IT353	
	IT363	Network Management	3	IT351	
	IT364	IT Entrepreneurship and Innovation	3	IT244	
	IT365	Enterprise Systems	3	IT352	
	ISLM103	Islamic Culture 3	2	—	
Total			17		

Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
Summer	IT499	Practical Training	3	Passing 86 Credit Hours	
Total			3		

Year 4

Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
Level 7	IT4XX	Elective Course in IT 1	3	* See Note 1	
	IT4XX	Elective Course in IT 2	3	* See Note 1	
	IT475	Decision Support Systems	3	IT354	
	IT476	IT Security & Policies	3	IT351	
	IT479	Senior Project I	3	IT354, IT361	
	ISLM104	Islamic Culture 4	2	—	
Total			17		

Year	Course Code	Course Title	Credit Hours	Pre-requisites	Co-requisites
Level 8	IT4XX	Elective Course in IT 3	3	* See Note 1	
	IT4XX	Elective Course in IT 4	3	* See Note 1	
	IT485	Professional Ethics in IT	3	IT362	
	IT487	Mobile Application Development	3	IT361	
	IT489	Senior Project II	3	IT479	
Total			15		



*** Note 1:** With respect to the elective courses, the department shall decide what to offer in each semester. The students are required to select two courses from two groups. In the 7th semester they will study one course from each group they have opted for. In the 8th semester, they will study the second course from each group selected by them thereby completing the 4 elective courses.

Elective Group A – Cloud Computing			
Course Code	Course Name	Credit Hours	Prerequisites
IT471	Introduction to Cloud Computing	3	IT476
IT473	Cloud Systems Architecture	3	IT476
IT481	Cloud Security	3	IT471
IT483	Cloud System Administration	3	IT471
Elective Group B – Cyber Security			
Course Code	Course Name	Credit Hours	Prerequisites
IT474	Introduction to Cyber Security and Digital Crime	3	IT363
IT478	Network Security	3	IT363
IT484	Wireless Sensor Networks	3	IT474
IT488	Cyber Forensics	3	IT474
Elective Group C – Internet of Things			
Course Code	Course Name	Credit Hours	Prerequisites
IT470	Introduction to IoT	3	IT363
IT472	IoT Network Design	3	IT363
IT480	Enterprise Internet of Things	3	IT470
IT482	IoT Security and Privacy	3	IT470

3. Field Experience (internship, cooperative program....):

a. Brief description

A summer period of 8 weeks spent as a trainee in industry, business, or government agencies for the purpose of familiarizing the student with the real job environment and enabling him to apply and relate his academic knowledge to a real work environment.

b. Semester:

The summer period of 8 weeks

c. Time allocation and scheduling arrangement



After the third year

d. Number of credit hours

Three credit hours

e. Intended learning outcomes

- Familiarizing the student with the real job world
- Apply and relate his academic knowledge to a real work environment

f. Assessment procedures

By an evaluation form filled by the employer, and a written report submitted by the student.

4. Project or Research Requirements (if any)

a. Brief description

- **IT479 Senior Project I**

During this course the primary aim of students will be to choose a development project which they will work on during Senior Project 1 and Senior Project 2. To equip them with necessary skills and tools in research and analysis phases of this senior project, in the first four weeks, the students will be taught on how to review literature, conduct research and elicit requirements. These following details outline the desired objectives of this teaching.

This course will equip undergraduate Information Technologies students with the basic skills to conduct researches in the field of Information Technologies. The course aims to introduce the required techniques for conducting a research, implementing systems, writing technical reports and the skills for presenting the work for audiences. This course will particularly focus on topics, which are related to the field of information technologies. The course will also provide guidance to the students in selecting their projects, understanding the research process as well as the tools needed to support implementing the system and writing its documentation. The course discusses other issues including research methods that are normally used in researches such as experiments, survey, interview and simulations, understanding the importance of literature review, preparing visual presentations and other ethical issues such as plagiarism.

- **IT489 Senior Project II**



This is a continuation of the graduation project started in IT479. The focus will be in this part on low-level design, implementation, testing and quality assurance as well as management of the project.

b. Semester:

Semester 7 and 8.

c. Number of credit hours

3 (IT479) + 3 (IT489), the total is 6 hours.

d. Intended learning outcomes

On completion of this module, students should be able to:

- select an area for study appropriate to the programme of study;
- negotiate with a supervisor to define a problem to be solved;
- identify and review relevant literature;
- identify and implement an appropriate project methodology;
- manage the project using appropriate tools and techniques;
- deliver a solution as negotiated with the supervisor;
- evaluate the solution;
- give a presentation to an audience of peers and staff on aspects of the project;
- write a report presenting the problem and its solution;
- reflect upon the project experience.

e. Assessment procedures

The assessment will include the evaluation of the following items

- A complete written report by the student.
- Student commitment based on the supervisor report.
- Student's oral presentation and demonstration.

5. Admission Requirements for the program:

None

6. Attendance and Completion Requirements:



The course load is divided as follows: 33% face-to-face lectures and 67% e-learning activities based on the University's Blended Learning regulations.

To complete the program, a student has to successfully complete the 130 credit hours as specified in the above detailed study plan.

G. LEARNING FACILITIES AND EQUIPMENT:

1. Facilities required

The college has provided state of the art facilities to the students for imparting quality education. The campuses provide modern class rooms with electronic gadgets required for smooth execution of class hours. The students also avail the opportunities to interact with faculty during visiting hours who are required to be in their allocated office spaces which are also furnished with all facilities needed for blended learning environment including hardware and software which is needed.

2. Classrooms

It is mandatory for all classes to be held in properly designed classrooms during the face to face hour. Each class is equipped with electronic podium which has the facility to record the lecture as well as sound control apart from other features. Each classroom is connected with internet. Multimedia support is available in every class room. Each classroom is equipped besides these with general amenities like air-conditioning, sufficient lighting and proper sitting arrangements. All classrooms are regularly monitored to ensure that none of the assets is in bad or disorderly shape.

3. Equipment (including IT)

The most salient IT equipment includes:

1. State of the art latest computing machines and laptops for faculty members.
2. 24 hours uninterrupted high speed internet provision at all the campuses.
3. Provision of SEU portal accounts to all the students and faculty members.
4. Blackboard system as teaching software with accounts for all the teachers and students to manage their academic activities and conduct virtual sessions.
5. Attendance, grading, E-mail and other relevant softwares.
6. Access to Saudi Digital Library for all the students and faculty alike



Course Descriptions



1 - UNIVERSITY REQUIREMENTS



College	College of Sciences and Theoretical Studies		Department	
Course Name	English Language Skills	Course Code:	ENG001	
Credit Hours	16	Contact Hours	16	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	University requirement			
Course Level	First Semester	Prerequisite	None	
Course Description: The 4 weekly hours of contact time with the English instructors aims to support, compliment and reinforce the student's online learning. The contact hours serves as an essential support component such that students are guided throughout their English studies. In addition, a course textbook has been selected to support the students learning. The Q:Skills series from world famous Oxford University press has been chosen as the official textbook of the course which students purchase from a distributor. The textbook is an e-book which an adaptive book rather than the traditional textbook. The Q:Skills series is one of the leading EFL course textbooks available in the current marketplace. The Q:Skills series (Reading and Writing and Listening and Speaking). Clearly identified learning outcomes focus students on the goal of instruction, while thought-provoking unit questions provide a critical thinking framework. In this regard, the skills of reading, writing, are covered in the first two hours of face two while the listening and speaking book will be covered in the second portion of the face to face class. Therefore, all four skills are covered effectively. Thus, the overall goal of developing the students' ability to communicate as effectively as possible in the English language.				
Course learning outcomes: Upon completion of this course, student should be able to:				
1. Communicate effectively using basic English language skills. 2. Comprehend courses taught in the English language. 3. Undertake research protocol and access knowledge through search mainly print and electronic search engines available in the English language. 4. Learn about the culture of the English speaking world and be able to benefit from their experiences.				
Grading:	<input type="checkbox"/> Mid-Term Exams <input type="checkbox"/> Final Exam	<input checked="" type="checkbox"/> Quizzes <input type="checkbox"/> Project	<input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Lab Work	



Text Book:	McVeigh, J. and Bixby, J (2015). Q: Skills for Success: Reading and writing and companion book 2 speaking and listening (2 ed.). Oxford: Oxford University Press. ISBN 978-03919482057 \$ iTools Online with iQ online pack (e-text).
Reference Book (s):	

College	College of Sciences and Theoretical Studies		Department	
Course Name	Computers Essentials	Course Code:	CS001	
Credit Hours	3 credit Hours	Contact Hours	4	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	University requirement			
Course Level	First or second semester	Prerequisite	None	

Course Description:

This course is an essential guide to computing concepts and provides the learner with a complete learning solution focusing on the most important, essential, and current concepts of information technology. Students are given a streamlined, concise, relevant approach to the fundamental issues surrounding the world of computing through a balance between theory and applied learning of these important topics.

course learning outcomes: Upon completion of this course, student should be able to:

1. Explain the basic information related to the computer and its major components
2. Use the computer and information technology such as computer networks and operating systems.
3. Effectively use Microsoft's core applications.
4. Communicate via the internet and access information using search engines.

Grading:	<input checked="" type="checkbox"/> Mid-Term Exams		<input checked="" type="checkbox"/> Quizzes		<input checked="" type="checkbox"/> Assignments	
	<input checked="" type="checkbox"/> Final Exam		<input type="checkbox"/> Project		<input type="checkbox"/> Lab Work	
Text Book:	Introduction to Computers and Information Technology (Second Edition), 2016. ISBN: 9781323144183.					



Reference Book (s):	
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الكلية	كلية العلوم والدراسات النظرية	القسم	قسم العلوم الإنسانية
اسم المقرر	مهارات الاتصال	رمز المقرر	001 علم
الساعات المعتمدة	2	ساعات الاتصال	4
لغة التدريس	<input checked="" type="checkbox"/> اللغة العربية	<input type="checkbox"/> اللغة الانجليزية	
نوع المتطلب	متطلب جامعة		
المستوى	الفصل الأول أو الثاني من السنة الأولى	المتطلبات السابقة	لا يوجد
<p>وصف المقرر</p> <ul style="list-style-type: none"> تعريف طبيعة الاتصال وعناصره وأنواعه وخصائصه وأهدافه وكفاءة الاتصال ومعيقاته وأدواته، العلاقة بين الاتصال اللغوي والاتصال غير اللغوي. مفهوم الذات، والإفصاح عن الذات. مهارات الإقناع، المقابلات الشخصية، القدرات الشخصية التي تسعى إليها القطاعات. مهارات كتابة السيرة الذاتية. مهارات الإلقاء والعرض الفعال. 			
<p>المخرجات التعليمية: بعد اجتياز المقرر يكون الطالب قادرا على:</p> <ol style="list-style-type: none"> الاتصال الفعال مع مختلف البيئات والثقافات. استيعاب الاختلافات الثقافية في المجتمعات والبيئات المختلفة. استخدام طرق تطوير الذات وتسويقها محليا وعالميا. توظيف التكنولوجيا الحديثة في تطوير كفاءة عملية الاتصال. 			
التقييم	<input checked="" type="checkbox"/> الاختبارات الدورية	<input checked="" type="checkbox"/> الاختبارات القصيرة	<input checked="" type="checkbox"/> الواجبات
	<input checked="" type="checkbox"/> الاختبار النهائي	<input type="checkbox"/> المشروع	<input type="checkbox"/> معامل
الكتاب الدراسي	المقرر الدراسي المؤلف من قبل الجامعة (مهارات الاتصال)، الطبعة الأولى 2016.		
المراجع			



الكلية	كلية العلوم والدراسات النظرية			القسم	
اسم المقرر	المهارات الأكاديمية	رمز المقرر	001 نهج		
الساعات المعتمدة	2	ساعات الاتصال	4		
لغة التدريس	<input checked="" type="checkbox"/> اللغة العربية	<input type="checkbox"/> اللغة الانجليزية			
نوع المتطلب	متطلب جامعة				
المستوى	الفصل الأول أو الثاني من السنة الأولى				
وصف المقرر					
<p>يهدف هذا المقرر إلى مساعدة الطالب على إدارة ذاته وقدراته وإمكاناته بصورة تقوده إلى النجاح والتفوق والإبداع واكتساب عدد من الاستراتيجيات والأدوات البحثية وأدوات التعلم والتفكير بصورة إيجابية سليمة واستخدام سلسلة من الأدوات الحقيقية والاستراتيجية الفاعلة، التي تساعده على تحصيل المعرفة، وتنظيمها وسرعة استدعائها وإعداد البحوث العلمية وعرضها. كما يهدف المقرر إلى تعزيز أدوات واستراتيجيات التعلم الذاتي وأمنائه وطرقه وكذلك أدوات واستراتيجيات التعلم في بيئات التعلم الإلكترونية.</p>					
<p>المخرجات التعليمية: بعد اجتياز المقرر يكون الطالب قادراً على أن:</p> <ol style="list-style-type: none"> 1. تعريف المفاهيم الأساسية المتعلقة بالمهارات الأكاديمية. 2. استخدام مهارات التعلم في دراسته الجامعية بإتقان. 3. تطبيق المهارات الأساسية للبحث العلمي. 4. توظيف التفكير السليم في المواقف الأكاديمية والحياتية المختلفة. 					
التقييم	<input checked="" type="checkbox"/> الاختبارات الدورية	<input checked="" type="checkbox"/> الاختبارات القصيرة	<input checked="" type="checkbox"/> الواجبات		
	<input checked="" type="checkbox"/> الاختبار النهائي	<input type="checkbox"/> المشروع	<input type="checkbox"/> معامل		
الكتاب الدراسي	المقرر الدراسي المؤلف من قبل الجامعة (المهارات الأكاديمية الجامعية)، الطبعة الأولى 2019.				
المراجع					

College	College of Sciences and Theoretical Studies		Department	
Course Name	Fundamentals of Math	Course Code:	MATH001	
Credit Hours	3	Contact Hours	4	



Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	University requirement			
Course Level	First or second Semester	Prerequisite	None	
Course Description: This course will address the outcomes of introductory and intermediate algebra. Topics include: basic algebraic properties, integers, simplifying and factoring polynomials, solving and graphing linear equations and inequalities, solving systems of equations in two and three variables, functions, rational expressions, quadratic and rational equations and inequalities, absolute value, graphing systems of equations and inequalities, and other selected topics. Applications will be emphasized, and numeric, algebraic, and graphical modes will be used.				
Course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Demonstrate an understanding of basic mathematical concepts 2. Solve equation problems and algebraic expressions 3. Apply mathematical thinking skills 4. Develop and maintain problem solving skills 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	<input checked="" type="checkbox"/> Quizzes	<input checked="" type="checkbox"/> Assignments	
	<input checked="" type="checkbox"/> Final Exam	<input type="checkbox"/> Project	<input type="checkbox"/> Lab Work	
Text Book:	Bittinger, Marvin L., and Beecher, Judith A. (2013). <i>Introductory and intermediate algebra</i> (5th). Boston, MA: Addison-Wesley. ISBN: 978-0-321-71606-4.			
Reference Book (s):				

الكلية	كلية العلوم والدراسات النظرية	القسم	قسم العلوم الإنسانية
اسم المقرر	ثقافة إسلامية 1	رمز المقرر	سلم 001
الساعات المعتمدة	2	ساعات الاتصال	4
لغة التدريس	<input checked="" type="checkbox"/> اللغة العربية		<input type="checkbox"/> اللغة الإنجليزية
نوع المتطلب	متطلب جامعة		



المستوى	الفصل الأول أو الثاني من السنة الأولى	المتطلبات السابقة	لا يوجد
<p>وصف المقرر</p> <p>يعد مقرر الثقافة الإسلامية من متطلبات الجامعة الإلزامية لجميع طلاب وطالبات الجامعة السعودية الإلكترونية، حيث تتم دراسته في أحد المستويات الدراسية للطالب حسب رؤية الكلية التي يتبع لها الطالب، ويقوم بتدريسه أحد أعضاء قسم الدراسات الإسلامية يتناول المقرر في وحداته موضوعات تشمل:</p> <ul style="list-style-type: none"> - تعريف الثقافة ومصطلحاتها - الثقافة الإسلامية، نشأتها، ومنهجها - مصادر علم الثقافة الإسلامية - موضوعات علم الثقافة الإسلامية - ركائز الثقافة الإسلامية - أركان الإيمان الستة - تابع أركان الإيمان الستة - مكونات الثقافات الكبرى - الثقافة الإسلامية والثقافات الأخرى - التحديات التي تواجه الثقافة الإسلامية - تابع التحديات التي تواجه الثقافة الإسلامية 			
<p>المخرجات التعليمية</p> <ul style="list-style-type: none"> • أن يقارن الطالب بين تعريفات الثقافة، والمصطلحات ذات الصلة. • أن يشرح الطالب خصائص الثقافة الإسلامية التي تميزت بها عن غيرها. • أن يعدد الطالب أهم المصادر التي تُستمد منها ثقافتنا الإسلامية. • أن يصنف الطالب موضوعات علم الثقافة بحسب الاتجاه. • أن يلخص الطالب أبرز الركائز التي تقوم عليها الثقافة الإسلامية. • أن ينقد الطالب الثقافات الكبرى نقداً موضوعياً. • أن يناقش الطالب أهم التحديات التي تواجه الثقافة الإسلامية وكيفية مواجهتها 			
التقييم	<input checked="" type="checkbox"/> الاختبارات الدورية	<input checked="" type="checkbox"/> الاختبارات القصيرة	<input checked="" type="checkbox"/> الواجبات
	<input checked="" type="checkbox"/> الاختبار النهائي	<input type="checkbox"/> المشروع	<input type="checkbox"/> معامل
المقرر الدراسي المؤلف من قبل الجامعة (الثقافة الإسلامية).			
المراجع			

الكلية	كلية العلوم والدراسات النظرية	القسم	قسم العلوم الإنسانية
اسم المقرر	ثقافة إسلامية 2	رمز المقرر	سلم 002



الساعات المعتمدة	2	ساعات الاتصال	4
لغة التدريس	<input checked="" type="checkbox"/> اللغة العربية	<input type="checkbox"/> اللغة الانجليزية	
نوع المتطلب	متطلب جامعة		
المستوى	الفصل الأول أو الثاني من السنة الأولى	المتطلبات السابقة	لا يوجد
<p>وصف المقرر</p> <p>يعد مقرر الأخلاق وآداب المهنة في الإسلام من متطلبات الجامعة الإلزامية لجميع طلاب وطالبات الجامعة السعودية الإلكترونية، حيث تتم دراسته في أحد المستويات الدراسية للطالب حسب رؤية الكلية التي يتبع لها الطالب، ويقوم بتدريسه أحد أعضاء قسم الدراسات الإسلامية. يتناول المقرر في وحداته عدة موضوعات تشمل:</p> <ul style="list-style-type: none"> - تعريف الأخلاق وأقسامها ومكانتها في الإسلام وأهمية دراستها. - أسس الأخلاق السليمة. - خصائص الأخلاق في الإسلام. - الأخلاق عند غير المسلمين. - وسائل اكتساب الأخلاق. - المسؤولية الخلقية. - صور من أخلاق النبي صلى الله عليه وسلم. - النزاهة والأمانة ومكافحة الفساد. - مفهوم أخلاقيات المهنة. - دور أخلاق المهنة في العمل والإنتاج. - الأخلاق الجامعة للمهنة. - بعض مواثيق المهن المعاصرة. 			
<p>المخرجات التعليمية</p> <ol style="list-style-type: none"> 1. أن يوضح الطالب معنى الأخلاق ومكانتها في الإسلام. 2. أن يذكر الطالب أسس الأخلاق الإسلامية. 3. أن يصف الطالب أخلاق النبي صلى الله عليه وسلم. 4. أن يستنبط الطالب خصائص الأخلاق في الإسلام. 5. أن يصنف الطالب وسائل اكتساب الأخلاق الحميدة. 6. أن يقارن الطالب بين الأمانة، والنزاهة، ومكافحة الفساد. 7. أن يميز الطالب الأخلاق المتعلقة بالمهن. 			
التقييم	<input checked="" type="checkbox"/> الاختبارات الدورية	<input checked="" type="checkbox"/> الاختبارات القصيرة	<input checked="" type="checkbox"/> الواجبات
	<input checked="" type="checkbox"/> الاختبار النهائي	<input type="checkbox"/> المشروع	<input type="checkbox"/> معامل
الكتاب الدراسي	المقرر الدراسي المؤلف من قبل الجامعة (الثقافة الإسلامية).		
المراجع			



الكلية	كلية العلوم والدراسات النظرية			القسم	قسم العلوم الإنسانية
اسم المقرر	ثقافة إسلامية 3	رمز المقرر	سلم 003		
الساعات المعتمدة	2	ساعات الاتصال	4		
لغة التدريس	<input checked="" type="checkbox"/> اللغة العربية	<input type="checkbox"/> اللغة الانجليزية			
نوع المتطلب	متطلب جامعة				
المستوى	الفصل الأول أو الثاني من السنة الأولى	المتطلبات السابقة	لا يوجد		
<p>وصف المقرر</p> <p>يعد مقرر النظام الاقتصادي في الإسلام وقضاياه من متطلبات الجامعة الإلزامية لجميع طلاب وطالبات الجامعة السعودية الإلكترونية، حيث تتم دراسته في أحد المستويات الدراسية للطلاب حسب رؤية الكلية التي يتبع لها الطالب، ويقوم بتدريسه أحد أعضاء قسم الدراسات الإسلامية. يتناول المقرر في وحداته موضوعات تشمل:</p> <ul style="list-style-type: none"> - مفهوم القضايا الاقتصادية وأهمية دراستها (مدخل للمقرر). - التأمين: تعريفه وأركانه وخصائصه وحكمه. - بورصة الأوراق المالية: تعريفها وأقسامها ودورها وأهدافها وحكمها الشرعي. - غسيل الأموال: مفهومه وصوره وحكمه وآثاره. - الخصخصة: مفهومها وأشكالها وأهدافها وضوابطها. - صكوك الإجارة: تعريفها وخصائصها وأهدافها وحكمها. - العولمة الاقتصادية: معناها وأهدافها وأدواتها وآثارها الاقتصادية وسياسات منظمات العولمة الاقتصادية. - المعاملات المصرفية الإلكترونية: البيوع الإلكترونية والاعتماد المستندي الإلكتروني والأوراق التجارية الإلكترونية والتحويل المصرفي الإلكتروني ومخاطر المعاملات الإلكترونية. - التكامل الاقتصادي: مفهومه وعوامل قيامه ومزاياه ومراحل ومتطلباته. - التضخم الاقتصادي: مفهومه وأنواعه وأسبابه وآثاره وسبل التغلب عليه. 					
<p>المخرجات التعليمية</p> <ol style="list-style-type: none"> 1. أن يحدد الطالب الأنظمة الاقتصادية. 2. أن يعرف الطالب بورصة الأوراق المالية. 3. أن يذكر الطالب معنى التأمين وحكمة وأنواعه. 4. أن يوضح الطالب معنى غسيل الأموال وآثاره وحكمه. 5. أن يطلع الطالب على ماهية الخصخصة وصكوك الإجارة وأنواعها وحكمها. 6. أن يستنتج الطالب أنواع المعاملات المصرفية الإلكترونية ومخاطرها. 7. أن يعرف الطالب معنى التكامل الاقتصادي وأهمية وأسباب التضخم الاقتصادي وآثاره. 					
التقييم	<input checked="" type="checkbox"/> الاختبارات الدورية	<input checked="" type="checkbox"/> الاختبارات القصيرة	<input checked="" type="checkbox"/> الواجبات		
	<input checked="" type="checkbox"/> الاختبار النهائي	<input type="checkbox"/> المشروع	<input type="checkbox"/> معامل		
الكتاب الدراسي	المقرر الدراسي المؤلف من قبل الجامعة (الثقافة الإسلامية).				



	المراجع
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الكلية	كلية العلوم والدراسات النظرية	القسم	قسم العلوم الإنسانية
اسم المقرر	ثقافة إسلامية 4	رمز المقرر	سلم 004
الساعات المعتمدة	2	ساعات الاتصال	4
لغة التدريس	<input checked="" type="checkbox"/> اللغة العربية	<input type="checkbox"/> اللغة الانجليزية	
نوع المتطلب	متطلب جامعة		
المستوى	الفصل الأول أو الثاني من السنة الأولى	المتطلبات السابقة	لا يوجد

وصف المقرر

يعد مقرر النظام الاجتماعي وحقوق الإنسان في الإسلام من متطلبات الجامعة الإلزامية لجميع طلاب وطالبات الجامعة السعودية الإلكترونية، حيث تتم دراسته في أحد المستويات الدراسية للطلاب حسب رؤية الكلية التي يتبع لها الطالب، ويقوم بتدريسه أحد أعضاء قسم الدراسات الإسلامية.

يتناول المقرر في وحداته عدة موضوعات تشمل:

- مفهوم المجتمع: تعريفه، الإنسان في الإسلام، أسس بناء المجتمع وعناية الإسلام به، سمات المجتمع الإسلامي، تقوية الروابط الاجتماعية.
- الأسرة في الإسلام: تعريفها، مكانتها، أهميتها، أسس بناء الأسرة، الزواج ومقاصده، حقوق الزوجين، حقوق الآباء والأولاد الأقارب، مكانة المرأة وحقوقها في الإسلام.
- الشبهات حول النظام الأسري في الإسلام والرد عليها: تعدد الزوجات، الحجاب، ميراث المرأة، دية المرأة، الطلاق، تحديد النسل.

المخرجات التعليمية

1. التعرف على مفهوم المجتمع من منظور إسلامي
2. التعرف على حقوق الإنسان في الإسلام
3. التعرف على أهمية بناء الأسرة في الإسلام
4. التعرف على الزواج وأحكامه في الإسلام
5. التعرف على عناية الإسلام بالمرأة في الإسلام.
6. أن يوضح الطالب مفهوم تحديد النسل
7. أن يفرق الطالب بين تحديد النسل وتنظيم النسل
8. أن يوضح الطالب سمات المجتمع الإسلامي
9. أن يفرق الطالب بين ما هو متوافق مع الإسلام وما هو مخالف له في المواثيق الدولية لحقوق الإنسان
10. أن يوضح الطالب الطريقة الصحيحة لتكوين أسرة في الإسلام
11. أن يفرق الطالب بين الزواج الصحيح والزواج الفاسد.
12. أن يدرك الطالب حكمه التشريع الإسلامي في المسائل التي تتساوى أو تختلف فيها المرأة عن الرجل
13. أن يوضح الطالب وسائل تحديد النسل.
14. أن يدرك الطالب الفرق بين تحديد النسل وتنظيم النسل



الواجبات <input checked="" type="checkbox"/>	الاختبارات القصيرة <input checked="" type="checkbox"/>	الاختبارات الدورية <input checked="" type="checkbox"/>	التقييم
معامل <input type="checkbox"/>	المشروع <input type="checkbox"/>	الاختبار النهائي <input checked="" type="checkbox"/>	
المقرر الدراسي المؤلف من قبل الجامعة (الثقافة الإسلامية).			الكتاب الدراسي
			المراجع



2 - College requirements



College	Science and Theoretical Studies		Department	
Course Name	Discrete Mathematics	Course Code:	MATH150	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	3	Prerequisite	Pass First Common Year	
Course Description: This course introduces students to fundamental algebraic, logical and combinatorial concepts in mathematics. Topics include Boolean Logic, Predicate Logic, sets, mapping, relations, elementary counting principles, algorithm & proof techniques, graphs, and recursions.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Solve Boolean Logic and Predicate Logic problems. 2. Solve basic counting problems including permutations and combinations. 3. Apply the concept of recurrence to algorithms and counting problems. 4. Apply the concept of growth functions to compute the complexity of simple algorithms. 5. Identify specific types of graphs & trees and Apply several classic algorithms related to applications in graphs and trees. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Rosen, K.H. (2012). Discrete Mathematics and its Applications (7th ed.). New York, NY: McGraw Hill. ISBN: 978-0077431440 (print version).			
Reference Book (s):				



College	Science and Theoretical Studies		Department	
Course Name	General Physics 1	Course Code:	SCI101	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	3	Prerequisite	Pass First Common Year	
Course Description: This course introduces students to fundamental concepts in physics. Topics include Motion in one dimension; Vectors; Motion in two dimensions; Laws of motion; Circular motion; Potential energy and conservation of energy, Linear momentum; collision; Rotation of a rigid body; Rolling motion; Law of gravity and various types Waves.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Explain Mechanics: Physics and measurements. 2. Solve problems about Motion in one dimension; Vectors; Motion in two dimensions; Laws of motion; Circular motion and its applications. 3. Identify Work and energy; Potential energy and conservation of energy. 4. Solve problems about Linear momentum and collision; Rotation of a rigid body; Rolling motion; Law of gravity. 5. Understand Waves: Oscillatory motion; Wave motion; Sound waves. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Serway R & Jewett J (2018) Physics for Scientists and Engineers with Modern Physics (10th ed.). Cengage Learning. ISBN: 978-1337553292			
Reference Book (s):				



College	Science and Theoretical Studies		Department	
Course Name	Technical Writing	Course Code:	ENG103	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	3	Prerequisite	Pass First Common Year	
Course Description: This course offers a general overview on principles and procedure of technical writing; attention to analyzing audience and purpose, organizing information, designing graphic aids, and writing such specialized forms as abstracts, instructions, and proposals. Students systematize and organize knowledge in ways that will help them in all of their courses. The course also emphasizes the elements of good writing style, appropriate grammar and mechanics, clarify of language and logical and cohesive development.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Identify the elements that affect writers' and users' perception of written documents. 2. Implement theories of document design. 3. Demonstrate the recursive nature of writing process. 4. Develop strategies for written and/or oral communication that foster mutual respect and responsibility. 5. Produce ethically responsible professional documents. 6. Develop effective arguments in professional documents using discursive and visual information. 7. Produce professional documents using various technologies 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Gurak, L. and Hocks, M. (2013). Strategies for Technical Communication in the Workplace. 2nd Edition. Pearson. ISBN: 978-0-205-24552-9			
Reference Book (s):				

College	College of Computing and Informatics	Department	IT
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Course Name	Object Oriented Programming	Course Code:	IT232			
Credit Hours	3 credit Hours	Contact Hours	3			
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English			
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective		
Course Level	3	Prerequisite	Pass First Common Year			
Course Description: This course is to introduce the students to the concept of Object-Oriented programming, principles of computer analysis of problems, design of algorithms, programming and testing using the Java programming language. Topics include problem analysis, basics of Programming, data types, control structures, functions, arrays, and the mechanics of running, testing, and debugging.						
Course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Explain the basic principles of Object-Oriented Programming, concept of language, and universal constructs of programming languages. 2. Design algorithms using pseudo-code, flowcharts, and structured charts. 3. Demonstrate Integrated Development Environment (IDE) for the editing, building, debugging, and testing of programs. 4. Develop a program based on specification using Object-Oriented Programming language elements including syntax, data types, conditional statement, control structures, procedures, and arrays. 5. Demonstrate proficiency in developing small scale applications conforming to various principles of object-oriented programming. 						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Java: How to program: Late Objects, 11th Edition, Paul Deitel and Harvey Deitel, 2017, Publisher: Pearson, ISBN-13: 978-0134791401 or ISBN-10: 0134791401					
Reference Book (s):						





College	College of Computing and Informatics		Department	IT
Course Name	Data Structure	Course Code:	IT245	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	4	Prerequisite	IT232	
Course Description: This course is the logical extension of Object Oriented Programming. In this course, students will be taught to work on complex data structures and algorithms. Major focus of this course is to prepare the transition from conventional functional programming to more relevant object oriented programming. Topic includes Concepts of object oriented (OO) programming: data abstraction, encapsulation, inheritance, and polymorphism. Also includes key data structures including stacks, queues, linked lists, binary trees, recursion and examples using some fundamental algorithms of computer science. Java programming languages will be used.				
Course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Outline concepts such as inheritance, polymorphism, and reusability with special emphasis on object-oriented programming. 2. Apply recursion concept in programming. 3. Design and implement programs using object-oriented programming concepts such as encapsulation, inheritance, polymorphism, abstract classes, and methods. 4. Demonstrate dynamic data structures such as linked lists, stacks and queues, and binary trees. 5. Exhibit proficiency in understanding the application of various data structures for heterogeneous real life problems. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Java: How to program: Late Objects, 11th Edition, Paul Deitel and Harvey Deitel, 2017, Publisher: Pearson, ISBN-13: 978-0134791401 or ISBN-10: 0134791401			
Reference Book (s):				



College	College of Computing and Informatics		Department	IT		
Course Name	Operating Systems	Course Code:	IT241			
Credit Hours	3 credit Hours	Contact Hours	3			
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English			
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective		
Course Level	4	Prerequisite	IT233			
Course Description: The aim of this course is to famiarize students with principles, architecture and working of a standard operating system. After completing this course, students will appreciate the significance of operating system on program efficiency, synchronization, multi-tasking and other related topics. Topics include: Computer and operating system structures, Process and thread management, Process synchronization and communication, Memory management, Virtual memory, File system, I/O subsystem and device management and Selected examples in networking, protection and security.						
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Describe the OS mechanism for process management, timing, memory, I/O, file and concurrency management. 2. Identify the services of modern operating systems and use system calls. 3. Identify the POSIX that use the basic OS mechanism. 4. Recognize the impact of the interaction between design decisions and operating system features on the performance and robustness of the programs. 5. Assess the performance of the programs through well designed measurements using OS timings features. 						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Operating System Concepts, 10th Edition, Abraham Silberschatz, Peter B. Galvin, Greg Gagne, Wiley and Sons, 2018					



Reference Book (s):	
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College	Science and Theoretical Studies		Department			
Course Name	General Physics 2	Course Code:	SCI201			
Credit Hours	3 credit Hours	Contact Hours	3			
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English			
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective		
Course Level	4	Prerequisite	SCI101			
Course Description: This course is the logical extension of General Physics 1. It introduces students Interference, diffraction, and polarization, magnetic fields; electromagnetic waves; The four Maxwell's equations; modern Physics and applications, Molecules and solids; Semiconductors and semiconductors devices.						
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Identify Physical optics: Interference, diffraction, and polarization. 2. Understand Magnetic fields Definitions and properties; Sources of magnetic fields; electromagnetic waves; The four Maxwell's equations. 3. Solve problems about modern Physics and applications, Molecules and solids; Semiconductors and semiconductors devices; Superconductivity. 4. Apply principles of physics in development of IT systems to enhance computational power of these applications. 						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Serway R & Jewett J (2018) Physics for Scientists and Engineers with Modern Physics (10th ed.). Cengage Learning. ISBN: 978-1337553292					
Reference Book (s):						



College	College of Computing and Informatics		Department	IT
Course Name	Introduction to Database	Course Code:	IT244	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	4	Prerequisite	IT232	
Course Description: The course familiarises students with significance of maintaining a computer based database using DBMS and its potential advantages to the organization. The students at the completion of this course will be able to understand the principal database concepts and develop a simple database for a small organization using standard DBMS. In this course, students should study the following topics: Basic concepts in database systems and architectures; Entity-Relationship model, Data models (including basics of Relational model & SQL), Database Design (Database dependencies and Normalization), Database implementation.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Explain database concepts, systems, and architectures. 2. Create entity-relationship model, relational model, and write SQL queries. 3. Design a database starting from the conceptual design to the implementation of database schemas. 4. Apply principles and concepts of information integrity, security and confidentiality. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Silberschatz, A., Korth, H. F., & Sudarshan, S. (2013). Database system concepts (7th ed.). New York, NY: McGraw-Hill. ISBN-10: 9332901384			
Reference Book (s):				

College	College of Computing and Informatics		Department	IT
Course Name	Computer Networks	Course Code:	IT351	
Credit Hours	3 credit Hours	Contact Hours	(3-0-1)	



Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	5	Prerequisite	IT241	
Course Description: Fundamental concepts in the design and implementation of computer communication networks and their protocols. This course provides students with hands on experience in most state of the art networking tools, technologies, standards and protocols. This includes layered network architectures, applications, transport, congestion, routing, data link protocols, local area networks. An emphasis will be placed on the protocols used in the Internet.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1- Explain networking principles, models and technologies. (1.1) 2- Outline the physical layer & associated hardware and software integration. (1.1) 3- Recognize the layered approach for networking. (1.3) 4- Analyze & design Local and Wide Area Networks. (2.3) 5- Demonstrate protocol configuration, network-addressing schemes and analyze packet transmission. (3.2) 6- Illustrate network protocols including Transport Control Protocol / Internet Protocol. (4.1) 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Data Communications and Networking, 5/e by Behrouz A. Forouzan, ISBN: 0073376221 Copyright year: 2013 (McGraw-Hill)			
Reference Book (s):				

College	Science and Theoretical Studies		Department	
Course Name	Linear Algebra	Course Code:	MATH251	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	4	Prerequisite	Math150	



Course Description: Topics include systems of linear equations, their applications, and solutions. Matrices, vectors, elementary operations on vectors, linear independence, spanning sets, and bases. Eigenvalues, eigen-vectors, and eigenspaces will be discussed. Example applications will be given, especially, in IT systems.						
course learning outcomes: Upon completion of this course, student should be able to: <div>1. Use computational techniques and algebraic skills</div> <div>2. Solve the system of linear equations using determinants and matrices</div> <div>3. Apply the properties of eigen vectors and eigen values of matrices</div> <div>4. Identify linear transformations of finite dimensional vector spaces</div> <div>5. Classify special forms of matrices</div>						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Anton, H., Rorres, C. (2010). Elementary Linear Algebra, 10e (Middle East Edition). Hoboken, NJ: John Wiley & Sons Ltd. ISBN: 978-0-470-56157-7 (print version); ISBN: 978-0-470-93284-1 (digital version).					
Reference Book (s):						

College	College of Computing and Informatics		Department	IT
Course Name	Practical Training	Course Code:	IT499	
Credit Hours	[3]credit Hours	Contact Hours		
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level		Prerequisite	86 credit hours	
Course Description:				
A summer period of 8 weeks spent as a trainee in industry, business, or government agencies for the purpose of familiarizing the student with the real job world and enabling him to apply and relate his academic knowledge to a real work environment.				



course learning outcomes: Upon completion of this course, student should be able to:

1. Record the functions and their execution as carried out in the field organization.
2. Recall the theoretical concepts and apply during the field experience.
3. Develop IT skills by working alongside experienced professional in business environment.
4. Analyze the effectiveness of learned knowledge while applying it in industry.
5. Demonstrate the skills and excellence gained at campus while working in technical domain.
6. Present the aspects of practical work to an audience of peers and staff in the form of final report.

Grading:	<input type="checkbox"/> Mid-Term Exams	<input checked="" type="checkbox"/> Coursework	100	<input type="checkbox"/> Final Exam
Text Book:	Interactive text book will be provided			
Reference Book (s):				

College	Science and Theoretical Studies		Department	
Course Name	Statistics	Course Code:	STAT101	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input checked="" type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	5	Prerequisite		

Course Description:

This course introduces the student to statistics with business applications. The course covers both descriptive and inferential statistics. Topics included are: measures of central tendency; measures of dispersion; graphical displays of data; linear regression; basic probability concepts; binomial and normal probability distributions; confidence intervals; and hypothesis testing of mean, proportion for one or two populations. The course also covers ANOVA and hypothesis tests for Goodness of Fit. These topics will be covered using a basic knowledge of algebra and Microsoft Excel.



course learning outcomes:

1. Define Statistics by examine the function, role and skill of Statistical uses.
2. State, reproduce and describe the issues and practices of Statistics that how they use the statistical data in Business.
3. Explain the issues and practices of Statistics that how they use the statistical data in Business. Compute and interpret descriptive measures of a data set.
4. Apply the concepts of statistics to a business situations.
5. Analyze the concepts of normal probability distributions.
6. Use the concepts of discrete and normal probability distributions.
7. Formulate testing of hypotheses in constructing and interpreting confidence intervals.
8. Analyze data sets using linear regression and correlation.
9. Recognize and evaluate proper and improper uses of statistical data in business.
10. Interpret results obtained from data analyzed using software packages.
11. Evaluate the data using business software packages and interpret the results.
12. Assess the numerical efficiency of Statistics in Business and research.

Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Mario F. Triola (2011). Elementary Statistics Using the TI-83/84 Plus Calculator. (3rd edition). Addison-Wesley, Pearson Education. ISBN: 978-0-321-64148-9.					
Reference Book (s):						

3 - Major requirements





College	College of Computing and Informatics		Department	IT		
Course Name	Introduction to IT and IS	Course Code:	IT231			
Credit Hours	3 credit Hours	Contact Hours	3			
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English			
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective		
Course Level	3	Prerequisite	Pass First Common Year			
Course Description: This course is an introductory course in information technology and information systems technology. The purpose of this course is to familiarize students with application of IT systems in various professional spectrums in the form of Information systems. Topics include basic hardware, software, data and overview of use of information technology in organizations. This course also provides an understanding of information systems and outlines the concepts of how IS can provide for competitive advantage. The course will also discuss about the management challenges facing organization today and how its affect to business and society.						
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Explain the significance of information technology and its applications in professional life. 2. Classify the business areas to which computers may be applied. 3. Illustrate how business requirements drive the information and knowledge needs of an organization for competitive advantage. 4. Demonstrate the use of emerging technology drivers such as Electronic Business, Data Mining and Networking solutions. 5. State the basic concepts of computer hardware and software. 6. Interpret the management challenges faced by information systems being implemented in organizations today, and how they affect business and society. 						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	"Introduction to Information Systems", 16 th Edition. By: George Marakas and James O'Brien, 2012. Publisher: McGraw-Hill/Irwin Professional. ISBN-10: 0073376884 or ISBN-13: 978-0073376882					
Reference Book (s):						



College	College of Computing and Informatics		Department	IT
Course Name	Computer Organization	Course Code:	IT233	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep.Spec	<input type="checkbox"/> Dep. Elective
Course Level	3	Prerequisite	Pass First Common Year	
Course Description: This course offers a comprehensive understanding of the structure of computational systems. This course deals with the nature of computer hardware. The course will cover the structure of current computer systems at the level of functional organization, representation of data and programs, the design of the memory hierarchy, and the design of the I/O system. This course also will introduce basic assembly language.				
Course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Describe the structure of computer systems. 2. Demonstrate various machine language concepts. 3. Develop assembly language programs. 4. Interpret the effects of good programming for efficient machine processing. 5. Analyse the relationship between computer system structure and performance. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	"The Architecture of Computer Hardware, System Software, and Networking: An Information Technology Approach", 5 th Edition By: Irv Englander. Publisher: John Wiley & Son., 2014 ISBN-13: 978-1118322635.			
Reference Book (s):	"Computer Organization and Embedded Systems, 6 th Edition By: Carl Hamacher, 2011. Publisher McGraw-Hill Education, ISBN-10: 0073380652 or ISBN-13: 978-0073380650			

College	College of Computing and Informatics	Department	IT
Course Name	System Analysis and Design	Course Code:	IT353
Credit Hours	3 credit Hours	Contact Hours	3



Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	5	Prerequisite	IT245	
Course Description: This course introduces the fundamental principles of problem analysis and software design to the students of college. In this regard the focus is on object-oriented approaches for modelling software requirements and leading to software design. The course is designed to integrate theoretical concepts of system analysis and design with practical examples and case studies so as to teach both the theory and the practice of this subject. In this course students will understand about practical techniques of software requirements, analysis, design, architecture and associate concepts. The object-oriented software industry over the last few years has gone through the process of standardizing visual modelling notations. The students will get familiarity with UML, Unified Modelling language, a modelling language for specifying, visualizing, constructing, and documenting, is the product of this effort. UML unifies the notations that currently exist in the industry.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Describe the role of analysis and design in software development. 2. Recognize software requirements and analysis to properly assess the problem faced by the client and suggest an appropriate solution. 3. Design a system by applying principles and methodology of object-oriented design (i.e. UML). 4. Use most common analysis and design techniques with comfort. 5. Demonstrate the role of software quality assurance and software testing for successful software development. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Systems Analysis and Design with UML Version 2.0: An Object-Oriented Approach, 5 th edition, 2015 - Alan Dennis, Barbara Haley Wixom and David Tegarden, John Wiley & Sons, Inc.			
Reference Book (s):				



College	College of Computing and Informatics		Department	IT
Course Name	Human Computer Interaction	Course Code:	IT352	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	5	Prerequisite	IT231, IT245	
Course Description: This course provides an introduction to the field of Human computer Interaction (HCI). Therefore, the course provides an overview about the fundamental components of an interactive system which include the human, the computer system itself and the nature of the interaction. It presents also different interaction models, frameworks and styles. Moreover, it includes the interaction design process and highlights the range of design rules that can help to increase the usability of software products. In addition, it includes the evaluation techniques under two broad headings: expert analysis and user participation. Furthermore, it discusses how to design a system to be universally accessible, regardless of age, gender cultural background or ability.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1- Define the interaction design process, and describe different types of design rules that support the usability. (1.1) 2- Apply content management and representation needs on various computer, and handheld platforms. (1.4) 3- Demonstrate theoretical concepts for analyzing observed problems in interfaces, models and frameworks from the field of HCI. (2.2) 4- Explain and apply important concepts related to various interface artefacts and their appropriate application. (2.3) 5- Use appropriate evaluation techniques in HCI (3.3). 6- Interpret universal design in accordance with international standards. (4.1) 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Designing the User Interface: Strategies for Effective Human-Computer Interaction, 6/E (2016). By Ben Shneiderman, Catherine Plaisant, Maxine			



	Cohen, Steven Jacobs. Publisher: Pearson/Prentice Hall. ISBN: 978-0134380384
Reference Book (s):	Interaction Design: Beyond Human Computer Interaction , by Y. Rogers, H. Sharp, & J. Preece, Fifth Edition, Wiley (2019). ISBN: 978-1119547259

College	College of Computing and Informatics		Department	IT		
Course Name	Database Management Systems	Course Code:	IT354			
Credit Hours	3 credit Hours	Contact Hours	3			
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English			
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective		
Course Level	5	Prerequisite	IT244			
Course Description: After the course of database, this course is intended to make the students practically proficient with using standard state of the art database management systems for development of organizational databases. In this course, students would study the following topics: DBMS architecture and administration; centralized and client-server approaches, system catalogue and data dictionary, transaction management; concepts, characteristics, and processing, recovery techniques, concurrency control techniques, DB security, object-oriented databases.						
course learning outcomes: Upon completion of this course, student should be able to: 1- Recognize database file organization and indexing (1.1) 2- Apply the concepts of transaction management, concurrency and recovery of a database. (2.3) 3- Develop a standard database using DBMS. (3.2) 4- Analyze and optimize algorithms for query processing (4.1)						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	RamezElmasri, ShamkantNavathe "Fundamentals of Database Systems", 7th Edition ISBN: 978-0133970777, ©2015 Pearson					



Reference Book (s):	
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College	College of Computing and Informatics		Department	IT		
Course Name	Web Technologies	Course Code:	IT361			
Credit Hours	3 credit Hours	Contact Hours	3			
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English			
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective		
Course Level	6	Prerequisite	IT352, IT244			
Course Description: In this course students will be familiarized with web application development including both client side as well as server side development and database connectivity. Topics such as Introduction to the Internet, World Wide Web, World Wide Web Consortium (W3C), standard mark-up language and services of the Internet. Topics include creating web pages, search engines, FTP, and other related topics. Students will get descriptions of client side and server side programming. Upon completion, students should be able to deploy a hand-coded web site created with mark-up language, and effectively use and understand the function of search engines.						
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1- Identify the elements and attributes of web pages. (1.1) 2- Design and manipulate web databases. (1.4) 3- Create web pages using XHTML and Cascading Styles sheets. (2.2) 4- Develop dynamic web pages using JavaScript (2.3) 5- Build web applications using PHP or similar languages. (3.2) 6- Write XML documents & XML Schema. (4.2) 						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Web Technologies: A Computer Science Perspective by Jeffrey Jackson, ISBN-10:0131856030 ©2007 Prentice Hall (PEARSON)					
Reference Book (s):	Web Programming and Internet Technologies: An E-Commerce Approach 2/E (2016) by Porter Scobey Pawan Lingras Publisher: Jones & Bartlett Learning ISBN-13: 9781284070682 Object-Oriented Design with Applications 3/E(2007) by Grady Booch, Robert A. Maksimchuk, Michael W. Engle, Bobbi J. Young, Jim Conallen, Kelli A. Houston Publisher: Addison-Wesley Professional ISBN-13: 978-0201895513 ISBN-10: 020189551X Internet and World Wide Web: How to Program 5/E(2011) by (Harvey & Paul) Deitel & Associates; Harvey Deitel; Abbey Deitel Publisher: Pearson					



	ISBN-13: 978-0132151009 ISBN-10: 0132151006
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College	College of Computing and Informatics		Department	IT
Course Name	IT Project Management	Course Code:	IT362	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	6	Prerequisite	IT353	

Course Description:

This course is mainly designed to prepare students with the knowledge to be IT project managers with project management skills needed to better manage IT projects. Built along the IT project management lifecycle, this course covers detailed topics of the basic concepts of IT project management, including initiating, planning, controlling, executing, and closing projects. The course also shows how IT projects should be managed, from inception to post implementation review. This course will help improve management skills and abilities to define the project scope, create a workable project plan, and manage within the budget and schedule.

course learning outcomes: Upon completion of this course, student should be able to:

1. Explain the job roles of an IT project manager. (1.1)
2. Demonstrate the project management lifecycle.(1.2)
3. Evaluate project team management and analyze project performance. (1.4)
4. Recognize the key issues during the IT project management procedures and describe the best practices in IT project management processes (2.1)
5. Assess the tasks in the project initiation phase including identifying business requirements, stakeholders, and project team responsibilities.
6. Apply the strategies for managing change and for assuring quality.(3.3)
7. Develop a comprehensive project plans for estimation, scheduling, communication, resource management, procurement, risk and quality. (4.1)

Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Information Technology Project Management, Sixth Edition. By: Kathy Schwalbe. Publisher: Course Technology. Print Release: July 2010, Pages: 672. Print ISBN: 978-1111221751					
Reference Book (s):	1. "Project Management, Achieving Competitive Advantage Global Edition", 3rd Edition. By: Jeffery Pinto . Publisher: Pearson. Print Release: Sep 2012.					



	Pages: 528 pages. ISBN13: 9780273767428, ISBN10: 0273767429 2. The electronic textbook for reading is an online eBook: http://www.epmbook.com/
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College	College of Computing and Informatics		Department	IT
Course Name	Network Management	Course Code:	IT363	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	6	Prerequisite	IT351	

Course Description:

This course addresses how to manage complex high speed computer networks running a high-volume mix of data, voice, and video protocols. This course prepares the graduating students to assume positions of network administrators in medium to large organizations. We study performance-tuning options and monitoring techniques. The course covers both large local-area networks and Internet service-provider networks. Special focus will be on network management applications with focus on performance optimization, fault management, and security management. Also, hardware-oriented management protocols such as SNMP, tools for managing software applications, and policy-based routing protocols such as BGP will be covered. Will also cover Advanced IP configuration using iproute2 package, how to tune networks for real-time traffic such as RTP and VOIP, and network-management tools such as OpenNMS and GroundWork. There will be a programming project involving development of a network-monitoring tool, preferably using Java.

course learning outcomes: Upon completion of this course, student should be able to:

1. Describe network management issues, standards and architecture. (1.1)
2. Recognize conceptual and practical knowledge of different versions of Simple Network Management Protocol (SNMP). (1.4)
3. Evaluate different SNMP tools, network statistics tools, and protocol analyzer for network management. (2.3)
4. Demonstrate broadband networking services and technologies. (3.3)
5. Differentiate between various wired and wireless broadband network access techniques. (4.1)

Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
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Text Book:	Network Management: Principles and Practice, 2 ^{ed} Edition, by Mani Subramanian, ISBN-13: 978-8131734049, ISBN-10: 8131734048 ©2012 • Prentice Hall (PEARSON)
Reference Book (s):	Network Management Systems Essentials (Mcgraw-Hill) by Divakara K. Udupa

College	College of Computing and Informatics		Department	IT	
Course Name	IT Entrepreneurship and Innovation	Course Code:	IT364		
Credit Hours	3 credit Hours	Contact Hours	3		
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English		
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective	
Course Level	6	Prerequisite	IT244		
Course Description: This course describes the fundamental concepts of entrepreneurship and digital innovation in technology-driven enterprises, growth strategies, innovation models, challenges for new venture creation, legal and intellectual property issues. This course will help improve creativity and innovative skills leads to professional entrepreneurs who create a workable project plan, and manage within the budget and schedule.					
course learning outcomes: Upon completion of this course, student should be able to: <div>1. Describe basic concepts underlying the domain of entrepreneurship and innovation in technology-driven enterprises.</div> <div>2. Identify the needs and opportunities for the use of digital innovation in existing organizations and new ventures.</div> <div>3. Understand the growth strategies, innovation models, and challenges for new venture creation.</div> <div>4. Apply innovative IT solutions to improve and manage resources necessary to run entrepreneurial activities.</div> <div>5. Assess the effectiveness of functional planning in IT ventures, considering key legal and intellectual property issues.</div>					
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam
					50



Text Book:	Technology Entrepreneurship, 2nd Edition, Natasha E, James C and Thomas H, ISBN: 9781352011180
Reference Book (s):	

College	College of Computing and Informatics		Department	IT	
Course Name	Enterprise Systems	Course Code:	IT365		
Credit Hours	3 credit Hours	Contact Hours	3		
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English		
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective	
Course Level	6	Prerequisite	IT352		
Course Description: Enterprise systems are a category of information systems which have been heavily adopted in practice since the 1990s. Enterprise systems are usually based on packaged software products, they drive for cross-functional integration and require organization-wide resources for their implementation. This course is designed to provide a comprehensive insight into theoretical foundations, concepts, tools and current practice of enterprise systems. The course will familiarize students with basic concepts of Enterprise systems. The students will gain good experience and knowledge of working with major types of enterprise systems such as ERP systems, CRM systems, Enterprise portals etc. They will learn about major modules, integration issues, data communication and other related topics.					
course learning outcomes: Upon completion of this course, student should be able to:					
1. Analyze and redesign business processes within small, medium and large corporate enterprise. (1.4)					
2. Design secure and flexible information and communication architectures that support the changing needs of the business. (2.2)					
3. Develop IT systems within small, medium and large corporate enterprises. (2.3)					
4. Develop robust business IS solutions that integrate new and existing business processes, structures, applications, within a global context. (3.1)					
5. Manage resources and finance of corporate enterprise IT systems. (4.2)					
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam
					50



Text Book:	Enterprise Information Systems: A Pattern-Based Approach, 3rd Edition, Cheryl L. Dunn, Cherrington and Hollander, McGraw-Hill Higher Education, 2005, ISBN-13: 9780072404296, ISBN-10: 0072404299
Reference Book (s):	

College	College of Computing and Informatics		Department	IT		
Course Name	Decision Support Systems	Course Code:	IT475			
Credit Hours	3 credit Hours	Contact Hours	3			
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English			
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective		
Course Level	7	Prerequisite	IT354			
Course Description: Decision support systems are playing key role in today’s organizations in taking effective and useful decisions while insulating organizations from effects of wrong decisions. The course is devoted to introduce decision support systems; show their relationship to other computer-based information systems, demonstrate DSS development approaches, and show students how to utilize DSS capacities to support different types of decisions. The topics covered in the course include but not limited to Introduction to decision support systems; DSS components; Decision making and DSS; DSS software and hardware; developing DSS; DSS models						
course learning outcomes: Upon completion of this course, student should be able to: <div><div>1. Describe the structure of Decision Support Systems (DSS) and their services.</div><div>2. Analyze various industrial applications of DSS and their limitations.</div><div>3. Use some DSS and demonstrate the database working with DSS and statistical models.</div><div>4. Resolve the issues involved in the management and development of DSS.</div></div>						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Business Intelligence and Analytics: Systems for Decision Support, 10 th Edition, 2014, Ramesh Sharda, Dursun Delen and Efraim Turban, ISBN: 0133050904, Pearson/Prentice Hall					



Reference Book (s):	
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College	College of Computing and Informatics		Department	IT
Course Name	Senior Project I	Course Code:	IT479	
Credit Hours	2 credit Hours	Contact Hours	2	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	IT354, IT361	

Course Description:

This course will equip undergraduate Information Technologies students with the basic skills to conduct researches in the field of Information Technologies. The course aims to introduce the required techniques for conducting a research, implementing systems, writing technical reports and the skills for presenting the work for audiences. This course will particularly focus on topics which are related to the field of information technologies. The course will also provide guidance to the students in selecting their projects, understanding the research process as well as the tools needed to support implementing the system and writing its documentation. The course discusses other issues including research methods that are normally used in researches such as experiments, survey, interview and simulations, understanding the importance of literature review, preparing visual presentations and other ethical issues such as plagiarism.

course learning outcomes: Upon completion of this course, student should be able to:

1. Suggest and evaluate proposed solutions to find the optimal one. (1.3)
2. Identify the problem and resulting requirements for the proposed system (2.1)
3. Demonstrate requirements using UML and other associate tools (2.2)
4. Carry out systematic research and prepare comprehensive literature survey. (3.1)
5. Develop accurate bibliographies and tables of references (4.1)

Grading:	<input type="checkbox"/> Mid-Term Exams	<input checked="" type="checkbox"/> Coursework	100	<input type="checkbox"/> Final Exam	
Text Book:					



Reference Book (s):	
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College	College of Computing and Informatics		Department	IT
Course Name	Elective Course in IT	Course Code:	IT4XX	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	See Note1	
Course Description: All Elective Courses descriptions are given in separate section after these descriptions.				
course learning outcomes: Upon completion of this course, student should be able to:				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:				
Reference Book (s):				





College	College of Computing and Informatics		Department	IT
Course Name	Elective Course in IT	Course Code:	IT4XX	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	See Note1	
Course Description: All Elective Courses descriptions are given in separate section after these descriptions.				
course learning outcomes: Upon completion of this course, student should be able to:				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input type="checkbox"/> Coursework	25
	<input checked="" type="checkbox"/> Final Exam	50		
Text Book:				
Reference Book (s):				



College	College of Computing and Informatics		Department	IT
Course Name	Senior Project II	Course Code:	IT489	
Credit Hours	4 credit Hours	Contact Hours	4	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT479	
Course Description: This a continuation of the graduation project started in IS 490. The focus will be in this part on low-level design, implementation, testing and quality assurance as well as management of the project. The outcome of this project must be a significant information system, employing knowledge gained from courses through the curriculum. Students must deliver the code, a final report and must do a presentation of their work as well as a demo.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Evaluate the developed solution (1.3) 2. Identify and design an appropriate project methodology (2.2) 3. Manage the project using appropriate tools and techniques (3.1) 4. Develop a solution using cutting edge technologies (3.2) 5. Appraise the project experience (3.3) 6. Write a report presenting the problem and its solution (4.1) 7. Present the aspects of the project to an audience of peers and staff. (4.2) 				
Grading:	<input type="checkbox"/> Mid-Term Exams	<input checked="" type="checkbox"/> Coursework	100	<input type="checkbox"/> Final Exam
Text Book:				
Reference Book (s):				

College	College of Computing and Informatics		Department	IT
Course Name	Elective Course in IT	Course Code:	IT4XX	
Credit Hours	3 credit Hours	Contact Hours	3	



Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	See Note1	
Course Description: All Elective Courses descriptions are given in separate section after these descriptions.				
course learning outcomes: Upon completion of this course, student should be able to:				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:				
Reference Book (s):				

College	College of Computing and Informatics		Department	IT
Course Name	Elective Course in IT	Course Code:	IT4XX	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	See Note1	



Course Description: All Elective Courses descriptions are given in separate section after these descriptions.			
course learning outcomes: Upon completion of this course, student should be able to:			
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework
			25
	<input checked="" type="checkbox"/> Final Exam		50
Text Book:			
Reference Book (s):			

College	College of Computing and Informatics		Department	IT
Course Name	Professional Ethics in IT	Course Code:	IT485	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT362	
Course Description: This course provides an introduction to the field of professional issues which relates to social and ethical issues in computing. This course will cover the major social and ethical issues in computing, including the history of computing, impact of computers on society, and the computer professional codes of ethics.				



course learning outcomes: Upon completion of this course, student should be able to: <div><div>1. Recognize the responsibilities and duties of a computer professional.</div><div>2. Recognize the importance of Intellectual Property, Patents and Referencing Systems.</div><div>3. Use the code of ethics in computing within the process of decision making.</div><div>4. Manipulate resource constraints without compromising on quality.</div><div>5. Apply international labor standards for effective human resource management.</div><div>6. Illustrate social and ethical issues in computing as a computer professional.</div></div>						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Ethics for the Information Age, Sixth Edition By: Mike Quinn. Publisher: Pearson. Print Release: March 2014, Pages: 552. Print ISBN: 978-0133741629.					
Reference Book (s):						

College	College of Computing and Informatics		Department	IT
Course Name	IT Security and Policies	Course Code:	IT476	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT351	

Course Description:

This course introduces the concepts and issues related to securing information systems and the development of policies to implement information security controls. Topics include the historical view of networking and security, security issues, trends, security resources, and the role of policy, people, and processes in information security. Upon completion, students should be able to identify information security risks, create an information security policy, and identify processes to implement and enforce policy.

course learning outcomes: Upon completion of this course, student should be able to:

1. Use effective, proper, and state-of-the-art security tools and technologies.
2. Develop security policies and put in place an effective security architecture that comprises modern hardware and software technologies and protocols.
3. Recognize networking and security, security issues, trends, and security resources.
4. Analyze problems related to the field of Security and Information Assurance.



5. Analyze and apply the most appropriate solutions to problems related to the field of Security and Information Assurance. 6. Recognize processes to implement and enforce policy.			
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework
		25	<input checked="" type="checkbox"/> Final Exam
Text Book:	Security Policies and Procedures: Principles and Practices , 2nd Edition by Sari Greene. Publisher: Prentice Hall/Pearson, 2014, ISBN-10: 0789751674, ISBN-13: 9780789751676.		
Reference Book (s):			

College	College of Computing and Informatics		Department	IT
Course Name	Mobile Application Development	Course Code:	IT487	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input checked="" type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT361	
Course Description: The evolution of computing and IT technologies in the domain of wireless computing has spawned a new horizon of opportunities in the form of mobile smartphone applications. These application provide users with flexibility, mobility and enhanced usability features. The future of IT applications can only be secured by developing their mobile and smartphone versions. This course is aimed at providing students with basic and fundamental knowledge concept of mobile computing. This includes the major techniques involved, and networks & systems issues for the design and implementation of mobile computing systems and applications. This course also provides an opportunity for students to understand the key components and technologies involved and to gain hands-on experiences in building mobile applications. Students will gain knowledge about mobile IP, mobility management, location estimation, location-aware computing, user experience and other topics.				



course learning outcomes: Upon completion of this course, student should be able to:

1. Explain mobile computing and classify types of mobile devices (1.1)
2. Identify and compare technologies that enable the development of applications for mobile devices. (2.1)
3. Design application interfaces for mobile devices using appropriate software. (4.1)
4. Develop mobile applications for multiple platforms. (3.2)

Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	<ul style="list-style-type: none"> • Learning Mobile App Development: A Hands-on Guide to Building Apps with iOS and Android, Jakob Iverson, Michael Eierman, 2014, ISBN: 032194786X, Pearson • Learning Android Application Development, Raimon Rafols Montane, Laurence Dawson, Packt Publishing 2016, ISBN-10: 1785286110, ISBN-13: 978-1785286117 • Learning React Native, Bonnie Eisenman, O'Reilly Media, 2017, ISBN: 9781491989135 • Learning Swift 3: Building apps for macOS, iOS, and beyond, Jon Manning, Paris Buttfield-Addison and Tim Nugent, O'Reilly Media, 2018, ISBN-10: 149198757X, ISBN-13: 978-1491987575 					
Reference Book (s):						



4 – ELECTIVE COURSES DESCRIPTION



College	College of Computing and Informatics		Department	IT
Course Name	Introduction to Cloud Computing	Course Code:	IT471	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	IT363	
Course Description: This course highlights the core concepts of the cloud computing paradigm and infrastructures system, network and storage virtualization, service models and deployment models and cloud programming models.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Outline the core concepts of the cloud computing paradigm. 2. Describe the fundamental concepts in cloud infrastructures to understand the trade-offs in power, efficiency and cost. 3. Explain system, network and storage virtualization and outline their role in enabling the cloud computing system model. 4. Illustrate the fundamental concepts of cloud storage and demonstrate their use in storage systems. 5. Demonstrate the various cloud programming models and apply them to solve problems on the cloud. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Cloud Computing: Concepts and Practices 1st Edition. Sehgal & Chandra, ISBN-10: 3319778382			
Reference Book (s):				



College	College of Computing and Informatics		Department	IT
Course Name	Cloud Systems Architecture	Course Code:	IT473	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	IT363	
Course Description: This course explains the cloud computing architectural principles, constraints, and best practices. This includes the architecture and infrastructure of cloud computing, SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc. Students in this course will analyse and evaluate various cloud computing solutions to achieve high availability, scalability, infrastructure automation, decoupling, and web-scale storage.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. State cloud computing architectural principles, constraints, and best practices. 2. Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc. 3. Describe the cloud-based solutions using appropriate architectural design principles and best practices to address customer requirements and deliver quality cloud-based solutions. 4. Explain problems, and explain, analyze, and evaluate various cloud computing solutions. 5. Design the architectures to achieve high availability, scalability (including auto scaling), infrastructure automation (infrastructure as software), decoupling, and web-scale storage. 6. Analyze the architectures based on the main pillars of Cloud Computing: security, reliability, performance efficiency and cost optimization. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Cloud Application Architectures: Building Applications and Infrastructure in the Cloud 1st Edition. George Reese, ISBN-10: 9780596156367			
Reference Book (s):				



College	College of Computing and Informatics		Department	IT
Course Name	Cloud Security	Course Code:	IT481	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT71	
Course Description: This course focuses on fundamentals of cloud computing security based on current standards, protocols, and best practices. It highlights threats, risks, vulnerabilities and privacy issues associated with Cloud based IT services as well as their countermeasures that secure isolation of physical and logical infrastructures including compute, network and data storage.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Define the fundamentals of cloud computing security based on current standards, protocols, and best practices. 2. Outline the known threats, risks, vulnerabilities and privacy issues associated with Cloud based IT services. 3. Explain the concepts and guiding principles for designing and implementing appropriate safeguards and countermeasures for Cloud based IT services. 4. Demonstrate the approaches to designing cloud services that meets essential Cloud infrastructure characteristics – on demand computing, shared resources, elasticity and measuring usage. 5. Design security architectures that assures secure isolation of physical and logical infrastructures including compute, network and storage, comprehensive data protection at all layers and compliance with industry and regulatory mandates. 6. Illustrate the industry security standards, regulatory mandates, audit policies and compliance requirements for Cloud based infrastructures. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Cloud Security and Privacy: An Enterprise Perspective on Risks and Compliance (Theory in Practice) 1st Edition. Matehr, Subra & Latif, ISBN-10: 0596802765			
Reference Book (s):				



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College	College of Computing and Informatics		Department	IT		
Course Name	Cloud System Administration	Course Code:	IT483			
Credit Hours	3 credit Hours	Contact Hours	3			
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English			
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective		
Course Level	8	Prerequisite	IT471			
Course Description: This course shows how a modern cloud system is constructed, designed, and maintained, troubleshooted, evaluated and tested. The topics also include the services provided by the cloud system, meeting system requirements and the required skills for cloud system administrator.						
course learning outcomes: Upon completion of this course, student should be able to: <div><div>1. Apply the concept of how a modern cloud system is constructed.</div><div>2. Evaluate and structure information in standards, technical documentation and professional literature to create solutions to new problems.</div><div>3. Design and maintain a cloud system suitable for a small office or company.</div><div>4. Demonstrate and troubleshoot services and other functionality in a cloud computer system.</div><div>5. Demonstrate a cloud system, including the services provided by the cloud system, to show that system requirements have been met; have the basic knowledge and skills required to start working as a cloud system administrator.</div></div>						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Practice of Cloud System Administration, The: Designing and Operating Large Distributed Systems, Volume 2, 1st Edition. Thomas Lemoncilli, ISBN-10: 032194318X					
Reference Book (s):						



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College	College of Computing and Informatics		Department	IT
Course Name	Introduction to Cyber Security and Digital Crime	Course Code:	IT474	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	IT363	
<p>Course Description: With computers, smartphone and hand held devices now almost everywhere, the computing and online presence has become extremely pervasive. Whereas, this has empowered the mankind in processing their needs and actions with unimaginable speed, this has also opened doors to continuous threat on online breaches of data and loss of confidential information. This increase the sense of insecurity amongst the users of online applications. The course informs the students about various kind of digital crimes that can be purported against people and methods of cyber security to protect against those. The topics covered include (but not limited to) topics covered in this course include: basic security terminology and professional terms, network basics, tracert, nslookup, ipconfig, ping, DNS, DoS attacks, overview of malware, rules for avoiding viruses and vulnerabilities.</p>				
<p>course learning outcomes: Upon completion of this course, student should be able to:</p> <ol style="list-style-type: none"> 7. Explain important principles, and theories used throughout the field of Cybersecurity. 8. Apply knowledge in the field of Cybersecurity to analyse real world problems. 9. Learn and understand national and international policy and legal considerations related to cybersecurity and cyberspace such as privacy, intellectual property, cybercrime etc. 				



Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Cybersecurity: Managing Systems, Conducting Testing, and Investigating Intrusions, Thomas J. Mowbray, 2013, ISBN: 978-1-118-69711-5, Wiley					
Reference Book (s):						

College	College of Computing and Informatics		Department	IT
Course Name	Network Security	Course Code:	IT478	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	IT363	
Course Description: Every aspect of our society, from business and financial transactions, education and research, medicine, to power grid and other societal infrastructures, is tightly coupled with the functioning of the Internet and its constituent networks. This coupling where has provided immense benefits to mankind with enhanced efficiency, productivity and reliability, it has also empowered a single malicious mind with a tool to cause enormous harms to operations of a networked organization. This class will teach advanced underlying principles of building secure and trustworthy computer networks. This course will provide a deep understanding of how modern networks are designed, their weak points, and both traditional and future approaches to make them resilient. The topics include amongst others physical network security, router mechanisms for security, enterprise network security, IP security, data center operations protection and relevant protocols etc.				



course learning outcomes: Upon completion of this course, student should be able to: <div><div>1. Undertake routine tasks to secure a network (ACLs, VLANs, router authentication).</div><div>2. Understand the factors that place an internet based information system at risk.</div><div>3. Evaluate and critically analyse the procedures to secure a system against failure, theft, invasion and sabotage</div><div>4. Understand authentication protocols and processes as well as learn how to implement them.</div></div>						
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Cryptography & Network Security, 1 st Edition, Behrouz Forouzan, 2007, ISBN: 0073327530, McGraw Hill					
Reference Book (s):						

College	College of Computing and Informatics		Department	IT
Course Name	Cyber Forensics	Course Code:	IT488	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT474	
Course Description: Cyber forensics are a very critical area of 21st century IT organizations because this knowledge provides tool to contain and combat various kinds of cybercrime. In today’s business world, where data is the ultimate wealth of the organizations, its protection and security becomes very important. Cyber forensics as a knowledge equips the graduating students with tools and techniques to protect the security of their organization’s IT assets. This course focuses on the fundamental principles of cyber forensics methodology and emerging investigation techniques related to the identification, collection and preservation of digital crime scene evidence. This course emphasizes student awareness in handling suspected digital evidence. Major topics include definition of cyber forensics, privileged communication, computer forensics tools, file system management etc.				



course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Understands the common processes and procedures used to conduct criminal and noncriminal investigations of activities involving evidence with digital media, including the laws that apply to these processes. 2. Understand and learn about how to maintain the chain of evidence in criminal investigations 3. Discuss the principles that underlie the forensic investigation process. 			
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework 25 <input checked="" type="checkbox"/> Final Exam 50
Text Book:	Computer Forensics and Cyber Crime: An Introduction, Marjie T. Britz, 3 rd Edition, 2013, ISBN: 0132677717. Pearson		
Reference Book (s):			

College	College of Computing and Informatics		Department	IT
Course Name	Wireless Sensor Networks	Course Code:	IT484	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT474	



Course Description: A wireless sensor network (WSN) generally consists of compact low power sensors, which collect information and pass the information via wireless networks to achieve a high level of desired monitoring and control in coordinated manners. With increased mobility comes greater danger of system malfunctions which can expose several vulnerabilities and dangers to our safety and wellbeing. This course exposes the students with fundamental concepts of wireless sensor networks and their applications. This course covers fundamentals of wireless network technology and distributed sensor networks. After completing this course, the students should be able to understand the principles of WSN and be able to design and maintain WSNs.

course learning outcomes: Upon completion of this course, student should be able to:

1. Learn modelling radio signal propagation issues and analyse their impact on communication system performance
2. Understand how the various signal processing and coding techniques combat channel uncertainties
3. Apply knowledge of wireless sensor networks to various application areas.
4. Design, implement and maintain wireless sensor networks.

Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25	<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Wireless Sensor Networks, Ian F. Akyildiz, Mehmet Can Vuran, John Wiley & Sons, July 2010, ISBN: 978-0-470-03601-3					
Reference Book (s):						

College	College of Computing and Informatics		Department	IT
Course Name	Introduction to IoT	Course Code:	IT470	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	



Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	IT363	
Course Description: This Course introduces students to fundamental concepts of IoT, the evolution of IoT in modern times, protocols used in IoT. This course assist students to design and develop smart IoT applications. Then analyse and evaluate the data received through sensors in IoT and suggest improvements.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Apply the concepts of IoT in real life problems with solutions for small and medium enterprises. 2. Identify the different technology paradigms that shape the evolution of IoT in modern times. 3. Apply IoT to different applications with different and divergent cloud requirements. 4. Analysis and evaluate protocols used in IoT and present the findings in a coherent manner. 5. Design and develop smart IoT applications in accordance with concepts of the knowledge. 6. Analysis and evaluate the data received through sensors in IoT and suggest improvements. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	Internet of Things: Technologies and Applications for a New Age of Intelligence, 2nd Edition. Vlasios et al, ISBN-9780128144367			
Reference Book (s):				

College	College of Computing and Informatics		Department	IT
Course Name	IoT Network Design	Course Code:	IT472	



Credit Hours	3 credit Hours	Contact Hours	3
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec <input checked="" type="checkbox"/> Dep. Elective
Course Level	7	Prerequisite	IT363
Course Description: This Course describes the network parameters for IoT systems and its various elements, challenges new architectural models, transportation methods, characteristics and communications criteria that employ smart objects.			
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Define network parameters for IoT systems and its various elements at a high level. 2. Identify the unique challenges posed by IoT networks and how these challenges have driven new architectural models. 3. Analyze smart objects and their architecture, understanding of their design limitations and role within IoT networks. 4. Present the salient elements of higher-layer IoT protocols and their transportation methods. 5. Identify the characteristics and communications criteria that are important for the technologies that smart objects employ for their connectivity. 			
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework
			25
			<input checked="" type="checkbox"/> Final Exam
			50
Text Book:	IoT Fundamentals: Networking Technologies, Protocols, and Use Cases for the Internet of Things, 1st Edition. David Hanes, ISBN-10: 1587144565		
Reference Book (s):			

College	College of Computing and Informatics	Department	IT
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Course Name	Enterprise Internet of Things	Course Code:	IT480	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT470	
Course Description: This Course focuses on the space that includes both advanced M2M solutions and Subnets of Things, differentiate between the Industrial IoT and the Consumer IoT, produce the talent that enable new business applications to connect with physical devices and machines.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Ingress the focuses on the space that includes both advanced M2M solutions and Subnets of Things. 2. Showcase the differentiation between the Industrial IoT and the Consumer IoT. 3. Produce the talent which will bridge diverse technologies to enable new business applications that connect with physical objects like devices and machines. 4. To brand IoT best practice available in the form of a technology-independent, reusable, 5. open-source methodology that supports IoT solution design as well as IoT project setup and 6. management by providing project templates, checklists, and solution architecture blueprints. 7. Study and Implement number of case studies to illustrate some of the different facets of the Industrial IoT. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
	<input checked="" type="checkbox"/> Final Exam	50		
Text Book:	Enterprise IoT: A Definitive Handbook, 1st Edition. Balani Naveen, ISBN-10: 1535505648			
Reference Book (s):				



College	College of Computing and Informatics		Department	IT
Course Name	IoT Security and Privacy	Course Code:	IT482	
Credit Hours	3 credit Hours	Contact Hours	3	
Teaching Language	<input type="checkbox"/> Arabic		<input checked="" type="checkbox"/> English	
Track	<input type="checkbox"/> College Req.	<input type="checkbox"/> Dep. Req.	<input type="checkbox"/> Dep. Spec	<input checked="" type="checkbox"/> Dep. Elective
Course Level	8	Prerequisite	IT470	
Course Description: This Course assures personal data protection, application of the legal principles, as well as effective information security of services, IoT Ecosystems and Privacy, connectivity interfaces with security implications.				
course learning outcomes: Upon completion of this course, student should be able to: <ol style="list-style-type: none"> 1. Analyze and simulate effective personal data protection which entails the application of the legal principles, as well as effective information security (confidentiality, integrity, availability) of services, with a view to provide better IoT services for the citizens. 2. Gain the deepness familiarity of IoT Ecosystems and Privacy. 3. Boost the ability to define privacy requirements that need to be implemented as privacy rules engineered within the system. 4. Fold an overview of the different security building blocks available in IoT platforms. 5. Students will be able to comprehend the connectivity interfaces with security implications and IoT verticals with their unique security requirements and associated standards and regulations. 				
Grading:	<input checked="" type="checkbox"/> Mid-Term Exams	25	<input checked="" type="checkbox"/> Coursework	25
			<input checked="" type="checkbox"/> Final Exam	50
Text Book:	IoT: Security and Privacy Paradigm, 1st Edition. Souvik Pal et al (eds), ISBN-10: 0367253844			
Reference Book (s):				