

" حيث تصبح الرؤية واقعاً "
"When Vision Becomes
Reality"

" عراقة وجودة "
Tradition and Quality

Brief course description- Course Plan Development and Updating Procedures\ Department of Software Engineering	QF01/0409-3.0E
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Faculty	Science & IT	Academic Department	Software Engineering	Number of the course plan (2017-2018)
Number of Major requirement courses	30	Date of plan approval	30/8/2017	

This form is just for the major requirement courses

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114211	3	Discrete Mathematics	Introduction to IT

This course will cover the following topics and specific applications in computer science. Numbers and Exponents , Errors (absolute and relative) , Propositions Logic , Predicates and Quantifiers , Quantifiers and logical operators, Logical Inference , Methods of Proof , Sets , Relations and Functions

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114212	3	Data Structure	Object Oriented Programming

This course defines different concepts such as “Data structure”, “Abstraction”, “Abstract Data Type” and the concepts of program efficiency. It explains the different ADT: List, Stack, Queue and Tree and gives the different data structure to represent and implement each ADT. Beside it shows the relation between these ADT and the real life applications.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114221	3	Object Oriented Programming	Principles of Programming

This course gains knowledge about basic Java language syntax and semantics to write Java programs and use concepts such as variables, conditional and iterative execution methods etc. Beside; understanding the fundamentals of object-oriented programming in Java, including defining classes, objects, invoking methods, in addition to the main principles in OOP that talks about “Encapsulation”, “Inheritance”, ”Polymorphism” and “Interface”.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114222	3	Visual Programming	Object Oriented Programming

This course shows how to design different forms by using the different GUI controls in Java, design forms to be user friendly and clear using the Integrated Development Environment (IDE). It also solves the run time problem for a program with having “Exception Handling”. In addition to know Files and streams, Multimedia, Multithreading

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114231	3	Digital Logic Design	0114211

This course emphasis on the following topics: the number systems and conversions., Digital systems, Unsigned and signed binary numbers, Binary codes, Boolean Algebra and logic gates, The map

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method, Combinational circuits, MSI circuits, Sequential circuits, Registers and counters.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114252	3	Software Specifications and design	Software Engineering Principles

This course will provide invaluable information on how to write and structure requirements, whilst explaining the importance of Systems Engineering and the creation of effective solutions to problems.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114313	3	Algorithms	0114212

This course aims to introduce the concepts of algorithm design and analysis. Its topics cover the following concepts: Solving summations and recurrences. Efficiency and complexity analysis. Tree terminology and algorithms. Binary trees. Hashing methods and solving collision in hashing. Heaps and heap sort. Insertion sort, merge sort and quicksort. Graph terminology, representation and algorithms. Algorithms of Prim, Kruskal, Dijkstra and Floyd. Breadth-first and depth-first search. The greedy, divide-and-conquer, and dynamic programming techniques.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114423	3	Internet Application Programming	Web Design

This course will cover the following topics which help student to build a strong website An introduction to ASP.NET programming , ASP Standard Server Control , Validation Control , transfer data between pages cookies, session and URL encoding , designing webpage using HTML , CSS and master pages , Database and ADO.NET Controls and Security of website

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
114332	3	Computer Organization & Architecture	0114231

Computer architecture is concerned with computer design , organization , operating systems, networks, and many other materials. This course introduces the following topics: Register transfer and microoperations, ALU circuit, Bus system, Simple computer architecture, Control unit, Instruction cycle, Addressing architectures, Parallel processing, CISC and RISC computers, Modes of transfer.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114341	3	Database (1)	Data Structure

This course emphasis on database design methodology that is explicitly divided into three phases: conceptual, logical, and physical. This course focuses on an introduction to database systems design implementation and management issues, as well as an extensive treatment of database languages and standards.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114343	3	Systems Analysis & Design	Software Architecture

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This course is a reflection of the pragmatic philosophy of software development as an engineering discipline. It implements an object-oriented approach using UML methods to create software system. This course introduces the concepts of IBM Rational Rose tools to elaborate systems through software engineering diagrams

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114442	3	Database Management Systems	Database (1)

The aim of the course is to introduce students to the current techniques, methods and results from the active field of database systems and data management. Typical topics include query planning and optimization, transaction processing and concurrency control, database security and distribution, advanced database models, systems, and applications such as data mining, data warehousing and OLAP; file structures, indexing, and hashing.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114251	3	Software Engineering Principles	0120117

This course provides an overview of the software engineering discipline, introducing the student to fundamental principles and methods of software engineering. The course highlights the need for an engineering approach to software products by presenting the software development processes.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114252	3	Software Specifications and design	0114251

This course will provide invaluable information on how to write and structure requirements, whilst explaining the importance of Systems Engineering and the creation of effective solutions to problems.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114453	3	Software Testing	0114343

This emphasis course on software testing techniques to identify and resolve software problems and high-risk issues early in the software lifecycle. Applying software testing to all phases of the software development lifecycle process that includes planning, reporting, testing, auditing, reviewing, inspection techniques, and related testing tools.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
114354	3	Software Architecture	114252

This course will introduce the software design in general. Then it will discuss in depth the software Architecture Design. The course will include: Architecture Design Process, Design Patterns, and Design Documenting.

Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114455	3	Software Development and Documentation	0114252

This course is intended to teach fundamental software development concepts and techniques for the construction of software systems. The course focus is on software implementation, covering the following topics: mapping from models to Java code, mapping from contracts to exceptions, mapping from models to persistent storage schema, define and implement classes' interfaces, and documentation

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using Java API Documentation Generator.			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114456	3	Software project management	0114453
Software project management is concerned with the knowledge of planning, organization, and monitoring of all software life-cycle phases. Software management ensures software development to an organization in software versions and configurations. Project work is divided appropriately, communication is facilitated, and progress is accurately charted.			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
01114357	3	Software Economics	0114252
This course will cover the following topics Introduction to software engineering , Life Cycle software and economics , Risk and Uncertainty , Economic Analysis Methods and Practical Considerations			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114458	3	Software Quality Management	0114453
This course defines the quality of the software, the foundations of quality measurement system, quality management, assurance of quality, planning, quality of product and process quality, software product metrics, management of the quality factors of the software and its effectiveness, global scale ISO 9001, check the software and plans and techniques for quality			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0104381	3	Human Computer Interaction	0104241
The Human Computer Interaction (HCI) aims at improving the interactions between users and computers by making computers more usable and receptive to the user's needs. This course is concerned with methodologies and processes for designing interfaces even if they are Software or Hardware Interfaces (i.e., design the best possible interface within given constraints, optimizing for a desired property such as learning ability or efficiency of use), techniques for evaluating and comparing interfaces, developing new interfaces and interaction techniques, and developing descriptive & predictive models & theories of interaction. In addition to the measurements functional and nonfunctional requirements of interactivity in HCI quality for standardization such as flexibility, learnability)			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114471	1	Software Documentation Techniques	0114455
This course will focus on The main objective of this course is to provide students with a broad perspective on software Documentation, and explain the task orientation process and how you break the project to small tasks, and how to construct a task list from a project			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite

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0114459	3	Software Modeling and Analysis	0114354
This course covers software modeling, architecture, design, and implementation using diagramming, analysis tools, and common-sense engineering methods to analyze performance of concurrent, message-driven systems			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114482	3	Selected Topics in S.E. (1)	Database
Learn to develop your own apps for your Android device. Let us introduce you to Android app programming by giving you a solid foundation so you can imagine, design, create and deploy your own apps. This class will cover the major Android topics such as Views, Activities, Intents, Broadcast Receivers, and Content Providers. It will also cover Location-based services, Sensors and App Deployment.			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114483	3	Selected Topics in S.E.2	Database
Brief description This course is aimed at developers who want to build Java EE applications using Oracle ADF. Learn to use Oracle JDeveloper 11g Release 1 Patch Set 1 to build, test and deploy an end-to-end web application. Simplify application development in your organization to increase productivity. Become more efficient at building Java EE applications using Oracle ADF (innovative yet mature Java EE development framework) and deploy an end-to-end web application			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114484	3	Mobile Application Programming	Database
Learn to develop your own apps for your Android device. Let us introduce you to Android app programming by giving you a solid foundation so you can imagine, design, create and deploy your own apps. This class will cover the major Android topics such as Views, Activities, Intents, Broadcast Receivers, and Content Providers. It will also cover Location-based services, Sensors and App Deployment.			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114485	3	Enterprise resource planning (ERP)	0114343
This course is about enterprise resource planning (ERP) systems. It is also about how a business works and how information systems fit into business operations. It explains basic concepts of ERP systems, ERP systems' implementation, ERP systems in Action, the business modules, and market of ERP systems.			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114486	3	Software Configuration Management	0114343
Software Configuration Management (SCM) is required to control evolving and changing software systems. This course will introduces the basic concepts of software configuration management, the importance of SCM in software development, the different SCM phases and activities, branching, release management, configuration management roles, CASE tools used in SCM industry			

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Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114487	3	Artificial Intelligence	0114343
This course introduces the basic principles in artificial intelligence. It covers simple representation schemes, problem solving paradigms, constraint propagation, and search strategies. Areas of application such as knowledge representation, natural language processing, expert systems, vision and robotics are explored. The PROLOG programming language is also introduced.			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114488	3	E-Business development	0114222
This course provides an overview of e-business from both technological and managerial perspectives. It introduces e-commerce frameworks, and technological foundations; and examines basic concepts such as strategic formulation for e-commerce enterprises, management of their capital structures and public policy. This course is designed to familiarize students with current and emerging electronic commerce technologies using the Internet. Topics include Internet technology for business advantage, managing electronic commerce funds transfer, reinventing the future of business through electronic commerce, business opportunities in electronic commerce, electronic commerce Web site design, social, and political. It is particularly important that the student place a great deal of emphasis in understanding the ASP.NET for developing EC systems			
Course number	Credit hours	Title of the course	Prerequisite-co-requisite
0114489	3	Software Reengineering & Maintenance	0114455
This course introduces the concepts of software re-engineering and its phases, includes legacy systems re-engineering to enhance the maintenance process, and presents the different cost-effective methods to maintain software products. This course covers the concepts of the software reversal engineering, and how to use the CASE tools during the maintenance process			

Approved by department council	Dr.Ahmad Abdallah Althunibat	Date of approval	21/11/2017
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