

الخطة الدراسية لقسم الحاسب الآلي

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وصف المقررات لخطّة قسم الحاسب الآلي

105 اکت -مهارات اكاڊيمية وحياتية- ٣ ساعات

This course covers skills needed in student's life such as goal setting, time management, communication, analytical thinking, decision-making, and problem solving. The student is expected to put these skills in practice, utilizing service-learning methodology in order to enrich academic learning outcomes while teaching civic responsibility, and strengthen local communities. This course aims to develop leadership skills, career-related skills, and sense of caring .for others

111رياض -رياضيات 1- ٣ ساعات

This course is designed to develop the topics of differential and integral calculus. Emphasis is placed on limits, continuity, derivatives and integrals of algebraic and transcendental functions of one variable. Upon completion, students should be able to select and use appropriate models and techniques for finding solutions to derivative-related problems.

125نجم -اللغة الإنجليزية- 9 ساعات

To inculcate and develop the habits of reading English texts, mostly at general level. To develop general lexical skills. To identify and write simple sentences and develop writing skills with special reference to spelling and writing short sentences. To expand general listening and reading skills

130تقن -مهارات الحاسب - ٣ ساعات

Overview of computer systems—hardware, operating systems, and microcomputer application software, including the Internet, word processing, spreadsheets, presentation graphics, and databases. Current issues such as the effect of computers on society, and the history and use of computers in business, educational, and other modern settings are also studied, keyboarding proficiency.

139نجم - مصطلحات الحاسب باللغة الإنجليزية - ساعتين

Everyday uses of computer - Types of Computer - Parts of computer - Keyboard and mouses - Computing words and abbreviations - Input devices - Output devices - Storage devices - Graphical user interface - Computing support assistant - Networks - Communications - The internet 1: email and newsgroups - The internet 1: The World Wide Web - Website designer

100فيز -اساسيات الفيزياء- ٣ ساعات

General Physics I is the first of a two semester sequence in General Physics designed to present concepts and applications of the following topics: kinematics, dynamics, gravitation, energy, momentum and heat. There are three hours of lecture and two hours of laboratory each week.

121رياض -رياضيات 2 - ٣ ساعات

This course is designed to develop the topics of linear algebra, systems of linear equations, matrices, determinants, vector spaces, inner product spaces, eigenvalues and eigenvectors, and linear transformations.

126نجم -اللغة الانجليزية 2- 6 ساعات

Comprehend and practice the vocabulary used in academic speech and writing regardless the discipline the students are concerned with. understand and deal with the vocabulary used in academic textbooks and articles as well as in lectures and seminars. summarize or integrate information without plagiarism; paraphrase.

202عال - مبادئ البرمجة والخوارزميات- ٣ساعات

This course gives an introduction about algorithms and programming. The course gives an overview about what an Algorithm is, how it can be designed, approaches for solving computational problem and finally a first interaction of student with computer programming to solve the problems using JAVA.

304تقن - تقنيات الانترنت- ٣ ساعات

This course presents the Internet from a dynamic workplace perspective. Reflects on how emerging technologies will empower society to do more with the Internet. Covers core Internet technologies, Web page design and authoring, computational thinking, networking fundamentals, and technology planning.

201تقن -مقدمة في قواعد البيانات- ٣ ساعات

This course covers a wide array of topics such as characteristics and advantages of the database management systems (DBMS), concepts of database and its architecture, data models, database schemes and instances, database models, relational data model (ER-diagram) and SQL (Structured Query Language); including data definition, queries, update, statements, and views in SQL, database design; functional dependencies, normal forms, and relational algebra, relational model constraints; domains, keys, and integrity constraints.

202تقن - شبكات 1- ٣ ساعات

This course presents an overview of the technology, architecture and software used by systems of network connected computers. The course will cover data transmission, local area network architecture, network protocols, inter-networking and distributed systems.

212عال -لغة برمجة 1- ٣ ساعات

This course is an introductory course of JAVA programming and is one of the core courses for computer programming. Topics focus on the programming essentials using java, object oriented concepts of java, inheritance, polymorphism, encapsulation and abstraction etc, and problem solving by programming

210رياض - مبادئ الإحصاء والاحتمالات- ٣ ساعات

This course presents basic statistical principles and methods. It focuses on descriptive statistics, probability theory, Binomial, Poisson, z, t, and Chi-square distributions, central limit theorem, confidence intervals and hypothesis testing.

211عال - تصميم المنطق الرقمي - ٣ ساعات

This course presents the introductory concepts that are needed in order to design digital systems. Classical methods, including Number system, Boolean algebra, gate level design, combinational and sequential logic design methods. The lab experiments will involve the design and implementation of digital circuits. Emphasis is on the use computer aided tools in the design, simulation, and testing of digital circuits.

203تقن - تنظيم و عمارة الحاسب الالى - ٣ ساعات

Main concepts of computer architecture; Hardware components of a computer; Instruction set: instruction formats, encoding of instructions, types; Execution unit: registers design, combinational shifters, ALU, division and multiplication algorithms; Control unit: register transfer language, hardwired and micro-programmed control unit; Memory unit: RAM, cache memory, associative memory, virtual memory; Input/output processors; Introduction to Assembly Language; Introduction multiprocessor systems and parallel processing.

207رياض - الرياضيات المتقطعة - ٣ ساعات

Introduction to abstraction; use and development of precise formulations of mathematical ideas; informal introduction to logic; introduction to naïve set theory; induction; relations and functions; graphs and trees.

213عال - لغة البرمجة ٢ - ٣ ساعات

The goal of this course is to take students from core java(212 عال)to the advanced level of java programming .This course covers the advanced topics of java programming (Advanced Class Design ,JAVA Stream , File and I/O Fundamentals -,Generics and Collections - Multithreaded Programming, AWT and event handling, Swing and GUI, Applet and Java Beans etc.)

215عال - نظم ادارة قواعد البيانات - ٣ ساعات

This course include a wide array of topics, the main objective of this course is to expose the student to the various ideas of database design concept, storage and file structure, indexing and hashing techniques, query processing and optimization, transaction processing, concurrency control, and recover

221نما - تحليل وتصميم النظم - ٣ ساعات

System analysis and design deal with planning the development of information systems through understanding and specifying in detail what a system should do and how the components of the system should be implemented and work together. System analysts solve business problems through analyzing the requirements of information systems and designing such systems by applying analysis and design techniques. This course deals with the concepts, skills, methodologies, techniques, tools, and perspectives essential for systems analysts. The practical components of this course are object oriented and use-case driven, requiring students to go through the steps of system analysis and design to solve a real-life business problem.

204 تقن - برمجة الويب - ٣ ساعات

This course provides an introduction of web-development techniques that use HTML, CSS and JavaScript as a web development essentials including database connectivity (JDBC), Basics of PHP, Basics of Java for Web Development and Basics of Asp.Net as an advanced technique of web programming.

205 عال - نظم التشغيل- ٣ ساعات

The course will start with a brief historical perspective of the evolution of operating systems over the last fifty years and then cover the major components of most operating systems. This discussion will cover the tradeoffs that can be made between performance and functionality during the design and implementation of an operating system. Particular emphasis will be given to three major OS subsystems: process management (processes, threads, CPU scheduling, synchronization, and deadlock), memory management (segmentation, paging, swapping), and file systems; and on operating system support for distributed systems.

208 عال - مقدمة في الذكاء الاصطناعي- ٣ ساعات

This course is an introductory course to artificial intelligence. The purpose of this course is to provide an overview of this field. We will focus on problems in the field of AI and techniques and algorithms for solving those problems, therefore we will cover topics including: agents, search, planning, Uncertainty and learning. Students will not be expected to have any prior knowledge of AI, but they will be expected to have good programming skills and a grasp of basic theoretical techniques for analyzing computer algorithms.

219 عال - تراكيب البيانات- ٣ ساعات

The main objective of this course is to provide students with a basic of data structures. It is cover wide area of topic such as Array, Linked lists, Stacks, Queues, Recursion, Graph and Tree structures. This course is also aims to provide students with an understanding of the basic searching and sorting algorithms, including, binary search and bubble sort, selection sort, and merge sort. The students will also provide with a conceptual understanding of the trade-offs among different abstract of data structures, hence enabling students to choose an optimal and appreciated data structure for a particular application.

220 عال - مقدمة في هندسة البرمجيات - ٣ ساعات

This course covers the fundamentals of software engineering, including understanding system requirements, finding appropriate engineering compromises, effective methods of design, coding, and testing, team software development, and the application of engineering tools. The course will combine a strong technical focus with a capstone project providing the opportunity to practice engineering knowledge, skills, and practices in a realistic development setting with a real client.

301 عال - المعالجات الدقيقة ولغة التجميع - ٣ ساعات

In this course, we will cover topics such as Machine organization; assembly language: addressing, stacks, argument passing, arithmetic operations, decisions, modularization; Input/Output Operations and Interrupts; Memory Hierarchy and Cache memory; Pipeline Design Techniques; Super scalar architecture; Parallel Architectures.

305 تقن - شبكات - ١ - ٣ ساعات

The course is the second in a series of courses on computer networking. It assumes familiarity with the basics of network architecture including the physical layer, the link layer, the network layer, and the transport layer. The course's topics include: an introduction the internet, the World Wide Web (WWW), and the Hypertext Transfer Protocol (HTTP), internet servers, high speed networks, optical networks, cellular networks, fixed infrastructure networks, multicast, intranet and internet routing protocols, comparison between distance vector and link state routing mechanisms, encryption, and resource reservation. Protocols for the above topics will be discussed along with their properties and ways to improve them the course's topics will be divided roughly into three sections: transport layer issues (inter-network routing, congestion control and avoidance).

322 نما - امن المعلومات - ٣ ساعات

This course consists of Introduction to Information Security, Need for Security, Application Security, operating System Security, Web Security, Planning for Security, Security Technology: Firewalls, Intrusion Detection and Prevention Systems, Cryptography, Implementing Information Security, Student study the optimum protection strategies from harmful software from the internet and the protection techniques. Finally, complete Computer security for optimum security levels.

353 عال - الرسم بالحاسب - ٣ ساعات

This course is an amalgamation of the various basic concepts of Computer Graphics involving algorithms and practical sessions with Java (2D and 3D API's). A strong part for this course is the use of Blender (Open Source) to teach the concepts of graphics in details and making the students work on the system. Project design and conceptual ideas will be used in the system to enhance the capability of the course taker in graphical designing and animation effects. All programs depending on the topics can be created in C/Java and some additional Blender project must be taken in practical sessions.

410تقن - الوسائط المتعددة وتقنيات الويب المتقدمة - ٣ ساعات

The goal of this course is to get students acquainted with the latest Multimedia and web application development Tools. The students will acquire advanced skills in web development along with the real hands on experience to build complex web applications. After having completed this course, students will have a thorough knowledge of all advanced web technologies. Topics include the Multimedia technologies, web development process, advanced layout and design features, advanced study of scripting languages, Adobe flash action scripting web application designing patterns, web services, Database concepts for web and the latest web development technologies introduced by Microsoft and Oracle.

410عال المترجمات- ٣ ساعات

This module introduces topics include compiler design, lexical analysis, parsing, symbol tables, declaration and storage management, code generation, and optimization techniques. The aim of this module is to show how to apply the theory of language translation introduced in the prerequisite courses to build compilers and interpreters. It covers the building of translators both from scratch and using compiler generators. In the process, the module also identifies and explores the main issues of the design of translators. The construction of a compiler/interpreter for a small language is a necessary component of this module, so students can obtain the necessary skills

411عال - تحليل وتصميم الخوارزميات- ٣ ساعات

This course introduces formal techniques to support the design and analysis of algorithms, focusing on both the underlying mathematical theory and practical considerations of efficiency. Topics include asymptotic complexity bounds, techniques of analysis, and algorithmic strategies such as Divide and Conquer, Greedy approach and etc.

412عال -التفاعل بين الانسان والحاسب- ٣ ساعات

Human-computer interaction is an interdisciplinary field that integrates theories and methodologies from computer science, cognitive psychology, design, and many other areas. The course is intended to introduce the student to the basic concepts of human-computer interaction. It will cover the basic theory and methods that exist in the field. The course will unfold by examining design and evaluation. Case studies are used throughout the readings to exemplify the methods presented and to lend a context to the issues discussed. The students will gain principles and skills for designing and evaluating interactive systems.

432عال – مقدمة في تطبيقات الموبايل (إختيارية 1) - ٣ ساعات

Mobile Application Development is a project oriented course which strongly emphasis on application development for the mobile operating systems. The theoretical part of the course covers all fundamental concepts of mobile development and the practical part teaches students how to build mobile's apps, for Android using Eclipse, Android Studio and for iPhones using X-code & iOS SDK. At the end of the course students are expected to complete a major project with the goal of releasing an app on mobile apps Market place

Cooperative training is a prerequisite for graduate students. Through this course, students can work for a specific government or private facilities in order to equip them with practical experience in the areas of specialization. The training Falls within the regular instructions of training programs that contains actions related to duration, entry requirements, selection of training, plan, work, evaluate the trainee, and the contribution of the academic supervisor

488 عال- مشروع التخرج - ١ - ٣ ساعات

The Graduation Project (GP) represents the highest achievement of Computer Science student's undergraduate experience, enabling him or her to apply fundamental computer science principles to the solving technical and business related problems. It provides a systematic process where students can select an area of interest and focus on solving the problem of a specific topic. The GP is known as a compulsory project for the students to complete at the end of their program. Students should regard their graduate projects as an opportunity for integrating what they have learnt during the graduate program and applying these concepts and skills to a real problem at work. The GP is pursued over two consecutive semesters by each group of students. Each GP is supervised by a faculty member in the college. The graduation project starts with a Project Proposal (usually in the 7th semester of an undergraduate study) and is followed by the Project Implementation (in the 8th semester).

In the 7th semester, the students should be able to demonstrate their ability to analyse the problem, identify, and define the computing requirements for the project. The students should be able to demonstrate their ability to apply their progressive knowledge of computing, mathematics and outline the computing requirements appropriate for a proposed solution. By the end of 7th semester, the students are expected to present and defend a comprehensive project proposal.

420 عال - النمذجة والمحاكاة - ٣ ساعات

This subject provides students with 1. The basic system concept and definitions of system. 2. Techniques to model and to simulate various systems. 3. The ability to analyze a system and to make use of the information to improve the performance.

421 عال - التشفير - ٣ ساعات

This course is an introduction to the basic theory and practice of cryptographic techniques used in computer security. We will cover topics such as encryption (secret-key and public-key), message integrity, digital signatures, user authentication, key management, cryptographic hashing, Network security protocols (SSL, IPsec), public-key infrastructure, digital rights management, and a bit of zero-knowledge protocols.

423 عال - أخلاقيات الحاسب - ٣ ساعات

This course is an introduction to the content for a Computer Ethics Undergraduate Course to be taught at the Computer Science department. The course concentrates on theory and practice of computer ethics. The aim of the course is to study the basis for ethical decision making and the methodology for teaching ethical decisions concerning computing matters.

This course is the continuation of previous course —Introduction to Mobile Application Development. The goal of this course is to provide a rich experience to the students for developing several types of mobiles Apps. These advanced topics give a much deeper understanding of the internals of mobile apps and explains more complex features of development. Topics include Background Services, Security Services, Internet Services, Location Based Services, Cloud Integration, Social Framework, Debugging & Testing, Using Bluetooth, Gaming, and Wireless Networking for Mobile Apps, and the latest frameworks to create advanced apps.

Starting from 8th Semester, students are expected to complete their projects according to their project proposal that they have proposed during Semester 7. They should highlight their achievement and contribution appropriately. By the end of this project, students should be able to show their ability to implement and evaluate a computer-based system, process, component, or program to meet desired need of the project. They should also demonstrate their capability to use current tools and techniques and engage themselves in continuing professional development. They are expected to show their awareness about professional, ethical, legal, security and social issues and responsibilities by the end of this project.

