قسم تقنية المعلومات

المقررات الإجبارية العامة لجميع المسارات :

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
٣	تواصل الشبكات	CPIT 600	تم ٦٠٠
٣	هندسة البرمجيات والتصميم الكياني	CPIT 601	تم ٦٠١
٣	إدارة نظم قواعد البيانات	CPIT 602	تم ٦٠٢
٢	تحليل كمي	CPIT 603	تم ٦٠٣
١	طرق البحث	CPIT 694	تم ٦٩٤
١	حلقة بحث	CPIT 695	تم ٦٩٥

مقررات المسار الأول: إدارة تقنية المعلومات

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
مقررات إجبارية			
٣	معمارية تقنية المعلومات للمنشآت	CPIT 620	تم ٦٢٠

النشأة:

أنشيء القسم في عام ١٤٢٧هـ . وبدء الدراسات العليا عام ١٤٣٣هـ

الدرجات العلمية:

• الماجستير بالمقررات الدراسية والرسالة .

ماجستير تقنية المعلومات

(بالمقررات الدراسية والرسالة)

المتطلبات العامة للبرنامج:

للحصول على درجة الماجستير في تقنية المعلومات يجب أن يكمل الطالب ما لا يقل عن (٣٣) وحدة دراسية معتمدة بما فيها رسالة الماجستير، وتكون موزعة على النحو الآتي:

• (١٦) وحدة معتمدة للمقررات الإجبارية .
• (٩) وحدة معتمدة للمقررات الاختيارية .
• (٨) وحدات معتمدة لرسالة الماجستير .

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
مقررات إختيارية (يختار الطالب ثلاث مواد بالتنسيق مع المشرف الأكاديمي)			
٣	هندسة الشبكة العنكبوتية	CPIT 631	تم ٦٣١
٣	معمارية الحوسبة السحابية	CPIT 632	تم ٦٣٢
٣	التجارة الإلكترونية	CPIT 633	تم ٦٣٣
٣	حوسبة الإنترنت	CPIT 634	تم ٦٣٤
٣	الأمن الإلكتروني	CPIT 645	تم ٦٤٥
	مواضيع مختارة في أمن الانترنت	CPIT 697	تم ٦٩٧

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
مقررات إختيارية (يختار الطالب ثلاث مواد بالتنسيق مع المشرف الأكاديمي)			
٣	إدارة مشاريع تقنية المعلومات	CPIT 621	تم ٦٢١
٣	إدارة المعرفة	CPIT 622	تم ٦٢٢
٣	تصميم وتنفيذ إدارة موارد المنشأة	CPIT 623	تم ٦٢٣
٣	التخطيط الإستراتيجي لتقنية المعلومات	CPIT 624	تم ٦٢٤
٣	الأمن الإلكتروني	CPIT 645	تم ٦٤٥
٣	مواضيع مختارة في إدارة تقنية المعلومات	CPIT 696	تم ٦٩٦

مقررات المسار الثالث: أمن الشبكات :

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
مقررات إجبارية			
٣	أمن المعلومات المتقدمة	CPIT 640	تم ٦٤٠

مقررات المسار الثاني: تقنيات الإنترنت :

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
مقررات إجبارية			
٣	برمجة TCP/IP	CPIT 630	تم ٦٣٠

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
مقررات إختيارية (يختار الطالب ثلاث مواد بالتنسيق مع المشرف الأكاديمي)			
٣	أمن الإنترنت والشبكات	CPIT 641	تم ٦٤١
٣	خوارزميات التشفير	CPIT 642	تم ٦٤٢
٣	الجنائيات الحاسوبية	CPIT 643	تم ٦٤٣
٣	تأمين الشبكات	CPIT 644	تم ٦٤٤
٣	الأمن الإلكتروني	CPIT 642	تم ٦٤٥
٣	مواضيع مختارة في أمن الشبكات	CPIT 697	تم ٦٩٢

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
مقررات إختيارية (يختار الطالب ثلاث مواد بالتنسيق مع المشرف الأكاديمي)			
٣	برمجة TCP/IP	CPIT 630	تم ٦٣٠
٣	أمن المعلومات المتقدمة	CPIT 631	تم ٦٣١
٣	معمارية الحوسبة السحابية	CPIT 632	تم ٦٣٢
٣	أمن الإنترنت والشبكات	CPIT 641	تم ٦٤١
٣	خوارزميات التشفير	CPIT 642	تم ٦٤٢

ج- الرسالة (٨) وحدة معتمدة :

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
٨	الرسالة	CPIT 630	تم ٦٩٩

مقررات المسار الرابع: تقنية المعلومات المتقدمة :

الوحدات الدراسية	اسم المقرر	رمز ورقم المقرر	
		English	عربي
مقررات إجبارية			
	معمارية تقنية المعلومات للمنشآت	CPIT 620	تم ٦٢٠

Courses Description

Course Code	Course Title	Credits	Prerequisite
CPIT 600	Internetworking	3	

Course Description	**This course covers advanced topics on internetworking, Internet architecture and protocols. Topics include internetworking concept, Internet architectural model, IP protocol, classfull and classless addresses, and transport and application layers protocols. This course also includes routing algorithms, routing between peers, routing within an autonomous system, mobile IP, private network interconnection, bootstrap and auto-configuration, domain name system, and network management**

Course Code	Course Title	Credits	Prerequisite
CPIT 601	Object Oriented Software Engineering	3	

Course Description	**Building on large-scale and complex software systems from available parts with the goal of increasing return on investment, decreasing time to market, and assuring quality and reliability. The course covers the basic software component concepts, overview of advanced topics on software components and component-based software engineering from research and practice**

Course Code	Course Title	Credits	Prerequisite
CPIT 602	Database Systems Administration	3	

Course Description	**This course is intended for students who wish to specialize in database management systems or wish to practice the advanced techniques involved in optimization of data storage, database design and queries. This course covers advanced topics like physical storage and access methods, query optimization, transaction processing, concurrency control, distributed databases and object oriented databases. Designing and Creating Your Database, OFA Optimal Flexible Architecture and other advanced topics in Database administration.**

	Course Code	Course Title	Credits	Prerequisite
	CPIT 603	Quantitative Analysis	2	
Course Description	This course introduces the graduate student to basic methods of empirical inquiry in the social sciences. The overwhelming majority of studies that test hypotheses, empirically fit models, produce predictions, or estimate policy impacts are based upon some form of quantitative or statistical analysis. This course will provide a basic introduction to statistical methods for political scientists and policy analysts. The course will provide a solid foundation in statistical inference, enabling the student to become a competent producer of basic statistical research.		

	Course Code	Course Title	Credits	Prerequisite
	CPIT 620	Enterprise IT Architecture	3	CPIT 601
Course Description	Planning for business transformation using IT, strategy analysis for business plans and balanced scorecard, identifying strategic opportunities for business transformation, real-world case studies for business transformation, managing and sustaining enterprise architecture, The course is a practical extension of Enterprise Architecture Concepts, analyzing various existing and new business models and master plans through case studies, explaining how to achieve a balanced relationship between business, technology and organization. Significant problems of EA practice and trends of the area are also covered		

	Course Code	Course Title	Credits	Prerequisite
	CPIT 621	IT Project Management	3	CPIT 620
Course Description	This course will introduce students to the qualitative and quantitative aspects of IT management in general and IT software project management in particular. It course examines the issues of IT projects such as planning, organization, control and risk management. It further covers the IT strategies and the role of project managers to address issues related to IT projects. This course will analyze the fundamental principles of IT Project management and it provides a good knowledge of responsibilities of project manager. It focuses the different methods and techniques used for IT project management.		

Course Code	Course Title	Credits	Prerequisite
CPIT 622	Knowledge Management	3	CPIT 620

Course Description	The primary intent of this course is to demonstrate a philosophy and procedure through which one may learn how to properly model the knowledge-base component of an IT system. This course addresses the design and implementation of Rules Based IT Systems that are used to capture and utilize the knowledge of human experts in a particular area of expertise. The topics include in the development of IT systems: knowledge acquisition, knowledge processing, validation, implementation, and the role of scientists.

Course Code	Course Title	Credits	Prerequisite
CPIT 623	ERP Design and Implementation	3	CPIT 620

Course Description	The course will focus how to design, develop and implement the ERP systems for the IT organizations. It will cover that how ERP systems improve the effectiveness of IT-based systems in the enterprise companies. The course will recognize the business benefits of using ERP systems in the enterprise wide IT companies. It will bring together IT factors associated with the evolution of ERP systems: BPR, Client-server networking, Integrated databases, Examine role of process modeling in redesigning business models, Planning, Design, and Implementation of an effective IT Systems using SAP, Oracle financials and Microsoft Dynamics.

Course Code	Course Title	Credits	Prerequisite
CPIT 624	IT Strategic Planning	3	CPIT 620

Course Description	This course covers IT and productivity, Data issued, Methods and data, Potential data problems, Sensitivity analysis and rate of returns in IT and Managerial implications. This course will adopt an IT enterprise management perspective with the aim to develop an understanding of managerial and organizational performance and of strategic decision making, in a competitive business environment. It will cover conceptual and practical skills in integrating IT systems into financial, organizational, marketing and production/service function of an organization with an overall business strategy. Other topics include cross-cultural management, the management of high technology, managing the physical environment, and public sector management.

Course Code	Course Title	Credits	Prerequisite
CPIT 630	TCP/IP Programming	3	CPIT 600

Course Description	TCP/IP is a very large protocol suite for internet computing and web computing. This course emphasizes on thorough high-level understanding of this protocol suite and other practical issues concerning TCP/IP today.TCP/IP Protocols and standards that are commonly used in developing such distributed systems will be covered. The course covers networking applications and their specific application protocols, and also the management protocol (SNMP). Selected advanced topics on current and evolving Internet protocols, in particular IP multicasting, differentiated services and quality of service, virtual private networks, and IPv6, will also be studied.

Course Code	Course Title	Credits	Prerequisite
CPIT 631	Web Engineering	3	CPIT 630

Course Description	Web applications are complex systems that deliver a plethora of functionality to a large number of users, and exhibit unique behaviors and demands in terms of performance, scalability, usability, and security. Web engineering is an emerging and multidisciplinary process that is used to create quality web applications. Web Engineering introduces a structured methodology utilized in software engineering to Web development projects. This course will discuss the limits of current web technologies, the similarities and differences between web and software engineering, design, information and service architectures, content management, and testing disciplines.

Course Code	Course Title	Credits	Prerequisite
CPIT 632	Cloud Computing Architecture	3	CPIT 630

Course Description	. The course examines basic APIs used in the Cloud, including the techniques for building, deploying, and maintaining applications. We learn how to weave existing SaaS offerings into new services and how to use Hadoop, the open source implementation of MapReduce framework and RestFul Web services, to build very powerful and efficient applications. We also learn how to deal with not trivial issues in the Cloud: load balancing, caching, distributed transactions, and identity and authorization management.

Course Code	Course Title	Credits	Prerequisite
CPIT 633	E-commerce	3	CPIT 630

Course Description	This course is designed to provide in-depth coverage of electronic commerce concepts. The learner will participate in a variety of activities designed to provide familiarity with the tools and issues associated with a web-delivered commercial enterprise. The learner will plan, design, develop and test web environments designed to meet secure retail and organizational needs.

Course Code	Course Title	Credits	Prerequisite
CPIT 634	Internet Computing	3	CPIT 630

Course Description	This course covers the basic principles and practices of distributed computing over the Internet. It focuses on the Internet as a domain for sharing resources with Grids, distributed computing with Web services, and service-oriented computing. The Internet is increasingly used as a large interconnection network for deploying distributed applications to solve challenging problems in diverse areas. Application areas include Finance and E-business, Government Services, Scientific Computing and Grids, Bioinformatics, Physics, Remote Visualization, Remote Collaboration, Multimedia applications, and File Sharing. The Internet is pandemic to modern uses of technology.

Course Code	Course Title	Credits	Prerequisite
CPIT 640	Advanced Information Security	3	CPIT 600

Course Description	This course investigates advanced topics in cryptography. Topics include private and public key cryptosystems, cryptographic hash functions, message authentication codes, basic digital signature schemes, and user authentication. Additional topics include digital watermarking, fingerprinting, and steganography. Students will write a term paper, either theoretical based on literature or reporting a student's own implementation or experiments with a chosen cryptographic scheme. Depending on the size of the group, some or all students will give a presentation to the class

Course Code	Course Title	Credits	Prerequisite
CPIT 641	Internet and Network Security	3	CPIT 640

Course Description	The course is devoted to investigate the security of networks at various protocol levels. Topics include network level security and the IPsec protocol, virtual private networks, key management and distribution, transport level security: SSL, TLS, and SSH protocols. Additional topics include wireless network security, application-specific protocols for e-mail security: PGP and S/MIME, malicious software and antivirus, intrusion detection, and firewalls: types, locations, and configurations

Course Code	Course Title	Credits	Prerequisite
CPIT 642	Cryptographic Algorithms	3	CPIT 640

Course Description	The course is devoted to the review of basic cryptographic algorithms, their implementation and usage. Classical encryption techniques and those of Rivest-Shamir-Adleman and EL Gamal will be seen in depth, and an overview of several others will be presented. This course also presents authentication schemes and interactive proof protocols. Students will write a term paper, either theoretical based on literature or reporting a student's own implementation or experiments with a chosen cryptographic scheme. Depending on the size of the group, some or all students will give a presentation to the class

Course Code	Course Title	Credits	Prerequisite
CPIT 643	Computer Forensics	3	CPIT 640

Course Description	This course provides students with knowledge and understanding of computer forensics to know different aspects of computer crime and ways in which to uncover, protect and exploit digital evidence. It will provide a theoretical foundation for the techniques and methods needed for the extraction of information from digital devices. Students will gain exposure to the spectrum of available computer forensics tools, both hardware and software, and be able to use them to perform rudimentary investigations along with developing their own tools for special needs situations.

Course Code	Course Title	Credits	Prerequisite
CPIT 644	Secure Network	3	CPIT 640

Course Description	**This course provides students with knowledge to understand the basics of security in a networked world. It will provide students with the foundation needed to understand the problems of wired and wireless network security, perform a risk analysis to ascertain the threats and cost of an attack, and design and implement security strategies to effectively build a defense to minimize the effects of these attacks.**

Course Code	Course Title	Credits	Prerequisite
CPIT 645	E-Security	3	CPIT 600

Course Description	**The course will focus on the technology, concepts, issues and principles that are important in the design and implementation of secure e-system. The course will examine technology for protecting such systems. It provides an in depth review of the theoretical and applied topics in e-security. Students satisfactorily completing the course will be able to formulate a security model for web environment and be able to evaluate the security models and risks of e-system. It focuses on concepts and methods associated with planning, designing, implementing, managing, and auditing security at all levels in an e-system.**

Course Code	Course Title	Credits	Prerequisite
CPIT 690	Selected Advance Topics on IT Management	3	CPIT 620

Course Description	**Topics on current research and professional issues in technology management.**

Course Code	Course Title	Credits	Prerequisite
CPIT 691	Selected Advance Topics on Internet Technologies	3	CPIT 630
Course Description	Topics on current research and professional issues in internet technologies.		

Course Code	Course Title	Credits	Prerequisite
CPIT 692	Selected Advance Topics on Networks Security	3	CPIT 640
Course Description	Topics on current research and professional issues in internet technologies.		

Course Code	Course Title	Credits	Prerequisite
CPIT 694	Research Methods	1	CPIT 601
Course Description	In this course, students are introduced to: the Definition and Value of Research, Scientific Methods of Research and its Special Features, Classification of Research, How to select a topic for research? Theory and Research, Concepts, Variables and types of variables, Hypothesis Testing and Characteristics, Review of literature, Conducting a Systematic Literature Review, Theoretical Framework, Problem Definition and research Proposal, The Research Process, Ethical Issues in Research, Measurement of Concepts, Criteria for Good Measurement, Research Design, Survey research, Personal interviewing, Telephone interviewing, Intercept and interviews in malls and other high traffic areas		

Course Code	Course Title	Credits	Prerequisite
CPIT 695	Seminar	1	CPIT 694

Course Description	In this course, student will prepares the proposal of his/her M.Sc. thesis. The student will produce and defend their thesis outlines. The proposal will contain a more detailed description of intended research points, a detailed literature review and project plan. The student will be evaluated on their report, and viva.

Course Code	Course Title	Credits	Prerequisite
CPIT 699	Thesis	8	CPIT 695

Course Description	The Thesis is the culmination of the Masters course by applying the knowledge gained and the study methods used, to make a detailed analysis of a particular topic in an IT related field. This will involve a survey of recent developments in the field, a critical analysis of these developments and a prognosis of future developments. As part of the thesis work student will also need to produce orgional contribution that has been verified using scientific reasoning such as prototyping or simulation.