هيئة اعتماد مؤسسات التعليم العالي وضمان جودتها

Accreditation and Quality Assurance Commission for Higher Education Institutions

المركز الوطني للاختبارات

كفايات برنامج وتخصصات علوم الحاسوب وتكنولوجيا المعلومات

1 - تخصص أمن وحماية الشبكات والمعلومات

Ability to apply analytical and critical thinking skills for solving organizational problems.

Ability to analyze a problem, identify and define the computing requirements to its solutions.

Ability to design, implement and evaluate a computer-based system, component, or process of an information system to meet the desired needs

Ability to demonstrate comprehensive understanding of security services, mechanisms, threats, and attacks in accordance with the standards as well as defining the relations between the components of various security models.

Ability to describe different techniques used in symmetric and asymmetric cryptography algorithm for information security and to analyze their strength and performance related issues.

Ability to describe different techniques used in computer networks monitoring, managements, and detections and prevention of intrusions and access control.

Ability to design solutions that use cryptographic hashing algorithms, key distribution and management techniques for mutual and message authentication to mitigate trust related attacks.

Ability to describe security solutions that can be applied across internal and external networks to lower the risk of local and cybersecurity attacks and eliminate the exposure to hacking, malwares and similar threats.

Ability to design solutions using secure protocols that keep data safe from internal and external misuse over the data link layer, network layer, and wired and wireless data link layers.

Ability to demonstrate comprehensive understanding of the legal issues related to violating and providing security services as well as the digital forensic processes used in the detection of related security evidences.

An ability to apply knowledge of computer networks concepts and principles to solving problems related to networked computer systems

2 - تخصص هندسة البرمجيات

An ability to apply knowledge of computing and mathematics in the development of computer algorithms and solutions

An ability to analyze a problem or a system, and identify and define the computing requirements appropriate to its solution.

An ability to design a computer-based system, process, algorithm, quality plan, component, database, or program to meet desired needs.

An ability to create a software project that is well structured, modular, well documented, efficient, and correct based on the quality models and apply software engineering when solving problems

Ability to plan, run, monitor, control, document and finish any software project.

Be able to demonstrate an understanding of advanced knowledge of the practice of software engineering, from vision to analysis, design, validation and deployment, using critical thinking and judgment

Ability to evaluate the impact of potential solutions to software engineering problems in a global society, using their knowledge of contemporary issues and emerging software engineering trends, models, tools, and techniques.

An Ability to apply abstraction, modeling and software engineering methods to the scoping, analysis, design, construction and operation of a software system.

An ability to validate and test a software solution

The ability to s elicit, analyze and specify the software requirements through a productive working relationship with various stakeholders of the project.

An ability to apply relational database concepts, principles, and theories to designing and creating information systems

An ability to apply computer networks, operating system and hardware concepts and principles to problem solving in the context of computer systems

An Ability to apply best practices related to software maintenance.

An Ability to apply best practices related to software Quality and Reliability

An ability to document a software product

3 - تخصص علم الحاسوب

An ability to apply knowledge of computing and mathematics in the development of computer algorithms and solutions.

An ability to analyze a problem or a system, and identify and define the computing requirements appropriate to its solution

An ability to design, implement, and evaluate a computer-based system, process, algorithm, component, database, or program to meet desired needs

An ability to write programs that are well structured, modular, well documented, efficient, and correct with respect to a specification.

An ability to apply relational database concepts, principles, and theories to designing and creating information systems.

An ability to apply operating system and hardware concepts and principles to problem solving in the context of computer systems.

An ability to apply knowledge of computer networks concepts and principles to solving problems related to networked computer systems.

An ability to use current techniques, skills, and tools necessary for computing practice.

4 - تخصص نظم المعلومات الحاسوبية

Ability to apply analytical and critical thinking skills for solving organizational problems.

Ability to analyze a problem, identify and define the computing requirements to its solutions.

Ability to design, implement and evaluate a computer-based system, component, or process of an information system to meet the desired needs

Ability to solve problems related to programming, networking, database, and Web design in the Information Technology environment

Ability to identify the potential local and global impact of information systems solutions on individuals, organization and the society.

Ability to evaluate and implement organizational planning, design, and integration of information systems solutions in a competitive environment.

Ability to identify innovative and efficient solutions in continuing professional development.

Ability to develop an understanding of the best practices and standards and their application

Ability to understand legal, information security and social issues associated with information systems.

Ability to manage Data, implement their appropriate storage, retrieval and analysis to discover useful patterns and predict future trends.

An ability to apply knowledge of computer networks concepts and principles to solving problems related to networked computer systems.

5 - تخصص نظم المعلومات الإدارية

Ability to plan, develop, implement, deploy and evaluate high quality applications, interactive websites, and procedural components of a data processing system in a business environment.

Ability to explain and apply the core aspects of information technology principles and tools, and manage their implementation in a business context.

Ability to search, analyze, and synthesize current information systems and solutions in the rapidly changing information technology profession.

Ability to understand the characteristics of operation research and its best practices, standards and tools that used to achieve effective solutions.

Ability to understand ethical, legal, and information security, base decisions and professional guidelines and practices associated with business information technology.

Effectively utilize database and database management systems to organize, store and retrieve data.

Ability to identify current and emerging technologies and apply them to today's organizations.

Apply project management methods in complex systems development environments.

Ability to evaluate the integration of Internet technologies into business at every level, from manufacturing, supply chain, and inventory management to customer relationships.

6 - تخصص الرسم الحاسوبي Computer Graphics

An ability to apply knowledge of computing and mathematics in the development of computer graphics algorithms and solutions.

An ability to analyze a problem or a system, and identify and define the computing requirements appropriate to its solution

An ability to design, implement, and evaluate a computer-based system, process, algorithm, component, or program to meet desired needs

An ability to write programs that are well structured, modular, well documented, efficient, and correct with respect to a specification.

An ability to construct interactive computer graphics programs.

An ability to apply algorithms for modeling and rendering graphics data.

An ability to apply critical thinking skills to art and graphics related issues.

An ability to demonstrate proficiency with industrial applications to visual communication related technologies.

An ability to write programs that implement fundamental image processing algorithms.

An ability to apply operating system and hardware concepts and principles to problem solving in the context of computer systems.

An ability to use current techniques, skills, and tools necessary for computer graphics practice.

7 - تخصص نظم الوسائط المتعددة

An ability to apply knowledge of computing and mathematics in the development of computer graphics algorithms and solutions.

An ability to analyze a problem or a system, and identify and define the computing requirements appropriate to its solution

An ability to design, implement, and evaluate a computer-based system, process, algorithm, component, or program to meet desired needs

An ability to write programs that are well structured, modular, well documented, efficient, and correct with respect to a specification.

An ability to construct interactive computer graphics programs

An ability to apply and use virtual reality concepts, programs, and tools.

An ability to demonstrate proficiency with industrial applications to multimedia technologies

An ability to write programs that implement fundamental image processing algorithms

An ability to apply operating system and hardware concepts and principles to problem solving in the context of computer systems.

An ability to use current techniques, skills, and tools necessary for Multimedia.

8 - تخصص تكنولوجيا الإنترنت

An ability to apply knowledge of computing and mathematics in the development of computer algorithms and solutions.

An ability to analyze a problem, a system, a web solution, and identify and define the computing requirements appropriate to its solution

An ability to design, implement, and evaluate a computer-based system, process, algorithm, component, website, web-based solution, database, or program to meet desired needs

An ability to write web programs that are well structured, modular, well documented, efficient, and correct with respect to a specification.

An ability to apply relational database concepts, principles, and theories to designing and creating information systems.

Ability to describe different network structures, wired and wireless, network protocols, and identify the hardware and software solutions that can be employed to create, protect, maintain, and repair each type of network.

Ability to describe security solutions that can be applied to protect e-government related data and processes over both the client and server side.

An ability to use current techniques, skills, and tools necessary for web-based solutions.

Ability to understand cloud computing deployment models (cloud services, virtualization and shared data management) and develop a cloud applications and deploy them to cloud platforms.

Ability to develop, deploy a Web and Mobile solutions targeted at some or all of the major mobile platforms to meet desired requirements.

Ability to understand web application architecture and use data interchange formats to integrate with other web services and applications

Ability to understand theoretical and practical aspects of information retrieval and data mining.

9 - تخصص نظم الشبكات الحاسوبية

Ability to apply analytical and critical thinking skills for solving organizational problems.

Ability to analyze a problem, identify and define the computing requirements to its solutions.

Ability to design, implement and evaluate a computer-based system, component, or process of an information system to meet the desired needs

Ability to plan, design, implement, and troubleshoot simple and complex networks.

Ability to demonstrate comprehensive understanding for information and network security; planning, risk management, security technologies, and personnel.

Ability to describe different network structures and protocols, and identify the hardware and software solutions that can be employed to create, protect, maintain, and repair each type of network.

Ability to apply in-depth knowledge of wireless communications principles, systems, and networks to the solution of wireless engineering problems

Ability to apply analytical and critical thinking skills for solving organizational problems that are related to networks integration and authorized access through various networks with different policies.

Ability to analyze, design, and implement , networking solutions for constrained devices that serve critical information systems such as healthcare systems, monitoring applications, ...

An ability to describe the role of internetworking operating system (IOS) in controlling and monitoring the hardware and software of various computer networks.