****

**المركز الوطني للاختبارات**

كفايات برنامج وتخصصات علوم الحاسوب وتكنولوجيا المعلومات

|  |
| --- |
| 1 - تخصص أمن وحماية الشبكات والمعلومات |
|
| Plan, design, implement, analyze, integrate, and troubleshoot simple and complex networks. |
| Demonstrate comprehensive understanding for information and network security; planning, risk management, security technologies, and personnel. |
| Perform two-factor authentication methods by analyzing intrusions and gather information and evidence about attacks in a legal forensically matter. |
| Given a computer network engineering problem, apply critical thinking, problem-solving techniques and effective communications skills to find solutions to the problem. |
| Ability to apply in-depth knowledge of wireless communications principles, systems, and networks to the solution of wireless engineering problems. |

|  |
| --- |
| 2 - تخصص هندسة البرمجيات |
|
| Create software products based on the quality models and apply software engineering when solving problems. |
| Be able to demonstrate an understanding of advanced knowledge of the practice of software engineering, from vision to analysis, design, validation and deployment. |
| Plan, run, monitor, control, document and finish any software project. |
| Design the quality plan and introduce the processes that control and guarantee the quality of any software product |
| Identify, formulate, and solve software engineering problems, including the specification, design, implementation, and testing of software systems that meet specification, performance, maintenance and quality requirements. |
| Ability to elicit, analyze and specify software requirements through a productive working relationship with various stakeholders of the project. |
| 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. |
| Apply coherent and advanced knowledge of software engineering in diverse contexts and domains using critical thinking and judgment. |
| Apply problem solving, design and decision-making methodologies to identify and provide innovative solutions to complex problems with intellectual independence. |
| Apply abstraction, modeling and software engineering methods to the scoping, analysis, design, construction and operation of a software system. |

|  |
| --- |
| 3 - تخصص علم الحاسوب |
|
| An ability to apply knowledge of computing and mathematics in the development of computer algorithms and solutions. |
| Write programs that are well structured, modular, well documented, efficient, and correct with respect to a specification. |
| Apply relational database concepts, principles, and theories to designing and creating information systems. |
| An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems. |
| Apply operating system and hardware concepts and principles to problem solving in the context of computer systems. |
| Apply knowledge of networking concepts and principles to solving problems related to networked computer systems. |

|  |
| --- |
| 4 - تخصص نظم المعلومات الحاسوبية |
|
| Apply analytical and critical thinking skills for solving organizational problems. |
| Solve problems (programming networking, database, and Web design) in the Information Technology environment. |
| Ability to analyze, design, and implement an information system. |
| Identify the potential global impact of information systems solutions. |
| Evaluate and implement organizational planning, design, and integration of information systems solutions in competitive environment. |
| Identify innovative and efficient solutions to solve organizational problems. |
| Ability to improve the effectiveness of group processes and work products |
| Develop an understanding of the best practices and standards and their application. |
| Understand legal and information security associated with information systems. |

|  |
| --- |
| 5 - تخصص نظم المعلومات الإدارية |
|
| Plan, develop, implement, deploy and evaluate high quality applications, interactive websites, and procedural components of a data processing system in a business environment. |
| Explain and apply the core aspects of information technology principles and tools, and manage their implementation in a business context. |
| Demonstrate the ability to search, analyze, and synthesize current information systems and solutions in the rapidly changing information technology profession. |
| Work independently and cooperatively to deliver and design reports, programs, projects, databases and other deliverables that document a business organization's information technology requirements. |
| Understand the characteristics of operation research and its best practices, standards and tools that used to achieve effective solutions. |
| Understand ethical, legal, and information security, base decisions and professional guidelines and practices associated with business information technology. |
| Encourage an innovative, creative, compassionate attitude that inspires employees to follow the entrepreneurial outlook of a well organized manager |

|  |
| --- |
| 6 - تخصص الرسم الحاسوبي |
|
| علوم الحاسبات و الخوارزميات |
| البرمجة |
| مكونات الحاسوب الرئيسية |
| الرسم الحاسوبي |
| تطبيقات وعلوم المعلومات |

|  |
| --- |
| 7 - تخصص الوسائط المتعددة |
|
| علوم الحاسبات |
| البرمجيات |
| الوسائط المتعددة |
| مكونات الحاسوب والشبكات |
| تطبيقات وعلوم الوسائط المتعددة |

|  |
| --- |
| 8 - تخصص تكنولوجيا الإنترنت |
|
| أساسيات في علوم الحاسوب |
| تطوير نظم الانترنت وادواتها |
| أنظمة الانترنيت وتطبيقاتها |
| الشبكات السلكية واللاسلكية وأمن المعلومات |
| إدارة المعرفة: ( قواعد بيانات، النظم الموزعة) |

|  |
| --- |
| 9 - تخصص نظم الشبكات |
|
| قواعد البيانات |
| تنظيم ومعمارية الحاسوب |
| نظم التشغيل |
| تراكيب بيانات و الخوارزميات |
| هندسة برمجيات |
| شبكات الحاسوب |
| برمجة كينونية و برمجة مرئية |
| أمن الشبكات |