MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Information Technology Fundamentals**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☒ **Seminar**	
Module Code	**IT101**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Information Technology		**College**	College of Science	
Module Leader	Bandar Abdul abbas Almankoshi		**e-mail**	bandar@uowa.edu.iq	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	M.Sc.	
Module Tutor	-		**e-mail**	-	
Peer Reviewer Name	-		**e-mail**	-	
Scientific Committee Approval Date	-		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Objectives

أهداف المادة الدراسية

The module aims for information technology fundamentals in the Information. Technology department can vary depending on the specific educational institution or program. However, here are some general aims that are often covered in such a module:

1. Introduction to Information Technology: Provide an overview of the field of information technology, its importance, and its role in various industries.
2. Hardware and Software Fundamentals: Introduce the basic components of computer hardware, such as CPUs, memory, storage devices, and peripheral devices. Also, cover the basics of software, including operating systems, applications, and programming languages.
3. Networking Concepts: Familiarize students with the fundamentals of computer networks, including network architectures, protocols, network devices, and communication technologies.
4. Data Management and Databases: Introduce the principles of data management, including data types, data organization, database systems, and data security.
5. Information Systems: Explore the concept of information systems, including their components, functions, and the role of IT in supporting business processes.
6. Cybersecurity: Raise awareness about the importance of cybersecurity and introduce basic concepts of securing computer systems, networks, and data.
7. Web Technologies: Cover the basics of web development, including HTML, CSS, and JavaScript, as well as web design principles and website deployment.
8. Human-Computer Interaction (HCI) is a multidisciplinary field that focuses on the design, evaluation, and implementation of interactive computing systems for human use. In the IT field, HCI plays a crucial role in creating user-friendly and efficient software, websites, and other digital interfaces. Here are some key aspects of HCI in the IT industry.
9. System integration refers to the process of combining different subsystems, components, or software applications into a unified and cohesive system. It involves connecting and integrating various IT systems, databases, networks, and applications to enable seamless data flow, communication, and functionality across the organization. System integration plays a critical role in enabling interoperability, streamlining business processes, and maximizing the value of IT investments. Here are key aspects and considerations related to system integration.
10. IT Project Management: Provide an understanding of project management principles and practices in the context of IT projects, including planning, organizing, and controlling IT projects effectively.
11. Emerging Technologies: Discuss current trends and emerging technologies in information technology, such as cloud computing, artificial intelligence, Internet of Things (IoT), and big data analytics.
12. Ethical and Legal Considerations: Explore ethical issues related to IT, such as privacy, intellectual property, and responsible use of technology. Also, discuss legal frameworks and regulations relevant to IT.

These aims are not exhaustive and can vary depending on the specific curriculum and

	institution. The module aims to provide students with a solid foundation in information technology concepts, principles, and skills, preparing them for further. studies or careers in the field of IT.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Module Learning Outcomes for an Information Technology Fundamentals module in an Information Technology department can include the following: 1. Knowledge and Understanding: a. Demonstrate knowledge and understanding of the basic concepts, principles, and theories in information technology. b. Understand the fundamental components of computer hardware, software, and networking. c. Explain the importance of data management, information systems, and cybersecurity in organizations. 2. Technical Skills: a. Apply practical skills in using computer hardware and software effectively. b. Configure and troubleshoot basic computer networks. c. Use database management systems to organize and retrieve data. 3. Critical Thinking and Problem Solving: a. Analyze and solve basic technical problems related to hardware, software, and networking. b. Apply logical thinking and problem-solving skills to address IT-related challenges. c. Evaluate different information technology solutions and make informed decisions. 4. Communication: a. Communicate effectively with peers and instructors using appropriate IT terminology. b. Present technical information clearly and concisely. c. Collaborate with others in group projects and discussions related to IT concepts. 5. Ethical and Professional Conduct: a. Recognize and adhere to ethical guidelines and professional standards in IT. b. Understand the legal and regulatory frameworks related to IT. c. Demonstrate responsible and ethical use of technology and respect for intellectual property. 6. Lifelong Learning: a. Demonstrate a curiosity and enthusiasm for ongoing learning in the field of information technology. b. Engage in self-directed learning and stay updated with emerging trends and technologies. c. Adapt to changes in technology and apply new skills as needed. These learning outcomes are designed to provide students with a solid foundation in information technology fundamentals, preparing them for further studies or careers in the IT field. They encompass both knowledge-based understanding and practical skills, as well as critical thinking and ethical considerations.
Indicative Contents المحتويات الإرشادية	The indicative contents for an Information Technology Fundamentals module in an Information Technology department may include the following topics: 1. Introduction to Information Technology: ● Definition and scope of information technology. ● Evolution and history of information technology.

	● Importance of information technology in various industries. 2. Computer Networks: ● Network architectures (LAN, WAN, client-server, peer-to-peer). ● Network protocols (TCP/IP, HTTP, FTP, etc.). ● Network devices (routers, switches, modems, etc.). ● Network security and common threats. 3. Data Management and Databases: ● Data types and data representation. ● Database concepts and models. ● Structured Query Language (SQL) and database operations. ● Data integrity, normalization, and database design principles. 4. Cybersecurity: ● Importance of cybersecurity and its challenges. ● Common security threats and vulnerabilities. ● Security measures and best practices. ● Cryptography and encryption techniques. 5. Emerging Technologies: ● Cloud computing and virtualization. ● Artificial intelligence and machine learning. ● Internet of Things (IoT) and its applications. ● Big data analytics and data-driven decision making. ● Ethical and Legal Considerations: 6. Ethical issues in information technology. ● Intellectual property rights and plagiarism. ● Privacy and data protection. ● Legal frameworks and regulations related to IT. 7. Human Computer Interaction: ● Show when human factors first became an issue in computer hardware and software design. ● Define the meaning of human-computer interaction or HCI. ● Define the meaning of user experience design or UXD. ● Describe the evolution from human factors to User Experience Design (UX). 8. Information Management (IM): IM refers to the process of ● organizing ● storing ● retrieving managing data and information within an organization. It involves various practices, technologies, and strategies to ensure that information is effectively captured, processed, stored, and utilized to support organizational goals and decision-making. Here are some key aspects of information management in the IT field. These indicative contents provide a broad overview of the topics that may be covered in an Information Technology Fundamentals module. The specific curriculum may vary based on the educational institution or program requirements.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	When it comes to the learning and teaching strategies for an Information Technology Fundamentals course in an Information Technology department, a combination of theoretical and practical approaches is often used to enhance students' understanding and application of the concepts. Here are some common strategies employed: 1. Lectures: In-class lectures provide an opportunity for the instructor to present theoretical concepts, explain complex topics, and provide an overview of key principles in information technology. 2. Interactive Discussions: Engaging students in discussions encourages active participation and critical thinking. It allows students to ask questions, share their perspectives, and collaborate with peers to deepen their understanding of the subject matter. 3. Hands-on Practical Exercises: Practical exercises and lab sessions provide students with the opportunity to apply the theoretical knowledge gained in lectures. It helps them develop technical skills, such as configuring computer systems, programming, database management, and networking. 4. Case Studies and Real-World Examples: Incorporating case studies and real-world examples helps students understand how information technology concepts are applied in practical scenarios. It enables them to analyze and solve problems and make connections between theory and real-world situations. 5. Group Projects and Collaborative Learning: Assigning group projects allows students to work together, enhancing their teamwork and communication skills. It also fosters collaborative problem-solving and encourages students to apply their knowledge to solve complex IT challenges. 6. Online Learning Resources: Utilizing online learning platforms, educational websites, and interactive multimedia resources can supplement classroom teaching. These resources can provide additional explanations, tutorials, quizzes, and simulations to enhance understanding and provide self-paced learning opportunities. 7. Guest Speakers and Industry Visits: Inviting guest speakers from the industry or organizing visits to IT companies can expose students to real-world practices, industry trends, and professional perspectives. It can help students understand the relevance of the course material to professional IT careers. 8. Assessments and Feedback: Regular assessments, such as quizzes, assignments, and exams, allow students to evaluate their understanding and progress. Constructive feedback from instructors on their performance helps students identify areas of improvement and reinforces their learning. 9. Online Discussion Forums: Establishing online discussion forums or platforms where students can ask questions, share resources, and engage in peer-to-peer learning can foster a collaborative learning environment outside the classroom. 10. Continuous Learning and Updates: Encouraging students to stay updated with the latest trends, technologies, and industry news through recommended readings, online resources, and professional development opportunities promotes lifelong learning and adaptability in the field of information technology.

	These strategies aim to create an engaging and immersive learning experience that combines theoretical knowledge with hands-on practice, critical thinking, and realworld applications. The specific strategies employed may vary based on the teaching style of the instructor, the resources available, and the educational institution's approach to IT education.

Student Workload (SWL)

الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	50	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	50	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**100**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	
	Assignments	2	10% (10)	2 and 12	
	Project	1	10% (10)	Continuous	
	Report	1	10% (10)	13	
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	
	Final Exam	3hr	50% (50)	16	
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Definition of the Information Technology Academic Discipline.
Week 2	Data communication: Introduction about data communication, Components of data communication, Data communication basic terms, Signals, Transmission media, Effective data communication, Data rate, Bandwidth.

Week 3	Describe how integrating various modules can produce a working system, describe how integration is an important function of all IT professionals.
Week 4	Networking: a. Describe networking and the research scope of networking study. b. Identify some components of a network. c. Name several network devices and describe their purpose. d. Describe ways information technology uses or benefits from networks
Week 5	Networking: e. Illustrate the role of networks in information technology. f. Identify people who influenced or contributed to the area of networks. g. Identify several contributors to networks and relate their achievements to the area.
Week 6	The Internet: Internet Applications a. Describe how the world-wide web has impacted people's lives over time. b. Illustrate the growth and changes in mobile devices and applications over time.
Week 7	Cybersecurity Principles: a. Make sense of the hard problem areas in cybersecurity that continue to make cybersecurity a challenge to implement. b. Describe how a significant cybersecurity event has led to increased organizational focus on cybersecurity. c. Tell a story of a significant cybersecurity advance.
Week 8	Cybersecurity Principles: a. Evaluate when the Confidentiality, Integrity, and Availability (CIA) of information has been or could be violated with regards to providing trust of information. b. Compare and evaluate different approaches/implementations of digital currencies.
Week 9	Human Computer Interaction: a. Show when human factors first became an issue in computer hardware and software design. b. Define the meaning of human-computer interaction or HCI. c. Define the meaning of user experience design or UXD. d. Describe the evolution from human factors to User Experience Design (UX).
Week 10	Human Computer Interaction: a. Contrast the physical and non-physical aspects of UXD. b. Identify several modern high-tech computing technologies that present UXD challenges. c. Describe several reasons for making UXD an essential part of the information technology discipline.
Week 11	Information Management (IM): ● organizing ● storing ● retrieving managing data and information within an organization. It involves various practices, technologies, and strategies to ensure that information is effectively captured, processed, stored, and utilized to support organizational goals and decision-making. Here are some key aspects of information management in the IT field
Week 12	Information Management (IM): ● Data Governance ● Data Integration

	● Data Warehousing ● Database Management Systems (DBMS) ● Information Security ● Knowledge Management ● Information Lifecycle Management (ILM)
Week 13	System integration: ● Integration Technologies ● Data Integration ● Application Integration ● Enterprise Service Bus (ESB) ● Legacy Systems Integration
Week 14	System integration: ● Legacy Systems Integration ● Business Process Integration ● Cloud Integration ● Testing and Validation ● Security and Governance
Week 15	Preview
Week 16	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Fundamentals of Information Technology, by: Salah Alkhafaji. Introduction of Information Technology, by V. Rajaraman, PHI Learning Private Limited	No
Recommended Texts		
Websites	http://www.sqlcourse.com/ http://www.db-book.com/	

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks %**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.