MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**E-Mangement**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS301**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	3		**Semester of Delivery**	5	
Administering Department	CSIT		**College**	CSIT	
Module Leader	Dr. Nahla Abbas Flayh		**e-mail**	Nahla.flayh@uobasrah.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	09/06/2023		**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 main objectives of this course are: 1. Understand the concept of e-management. 2. Analyze the impact of digital technologies on business management. 3. Develop digital leadership skills. 4. Foster digital business strategy development. 5. Understand digital marketing and customer engagement. 6. Manage digital transformation initiatives. 7. Cultivate skills in e-commerce and online business models. 8. Stay informed about emerging trends in e-management.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Develop a deep understanding of the principles, theories, and concepts related to managing businesses in the digital age, including the impact of digital technologies on business operations and strategies. 2. Gain the ability to formulate and execute effective digital business strategies that align with organizational goals, considering market dynamics, competitive positioning, and leveraging digital technologies. 3. Cultivate leadership skills required in a digital environment, such as strategic thinking, adaptability, innovation, and the ability to lead and motivate teams through digital transformations. 4. Develop the ability to analyze and interpret data using digital analytics tools, enabling data-driven decision-making and performance measurement in various aspects of business management. 5. Understand the fundamentals of e-commerce and develop strategies for successful online business models, customer engagement, supply chain management, and payment systems. 6. Gain knowledge and skills to lead and manage digital transformation initiatives within organizations, including assessing digital maturity, identifying opportunities for improvement, and implementing digital solutions.
Indicative Contents المحتويات الإرشادية	1. **Introduction to E-Management:** • Overview of e-management and its significance in the digital age

	• Evolution of digital technologies and their impact on business management • Trends and challenges in e-management **2. Digital Business Strategy:** • Formulating digital business strategies aligned with organizational goals • Competitive positioning and differentiation in the digital marketplace • Digital business models and revenue generation strategies • Strategic planning for digital transformation **3. E-Marketing and Digital Advertising:** • Digital marketing strategies and techniques • Online consumer behavior and targeting • Social media marketing and content marketing • Search engine optimization (SEO) and search engine marketing (SEM) • Mobile marketing and location-based marketing **4. E-Commerce Management:** • Introduction to e-commerce and its types (B2C, B2B, C2C) • E-commerce platforms and online marketplaces • E-commerce website design and user experience • E-commerce payment systems and security • Supply chain management in e-commerce **5. Data Analytics and Decision-Making:** • Importance of data analytics in e-management • Collecting, analyzing, and interpreting digital data • Key performance indicators (KPIs) and metrics for e-management • Data visualization and reporting • Data-driven decision-making in various functional areas (marketing, operations, finance) **6. Digital Leadership and Change Management:** • Leadership skills required in a digital environment • Managing digital transformations within organizations • Change management strategies and overcoming resistance

	• Innovation and fostering a digital culture **7. Emerging Technologies and Future Trends:** • Overview of emerging technologies in e-management (e.g., AI, blockchain, IoT) • Impact of technology trends on business management • Opportunities and challenges of adopting emerging technologies • Future trends in e-management and digital business **8. Case Studies and Practical Applications:** • Analyzing real-world case studies of successful e-management practices • Applying e-management principles to solve business challenges • Group projects and simulations to develop practical skills

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	When it comes to learning and teaching strategies for e-commerce, it's important to consider the digital nature of the subject matter. Here are some strategies that can be effective in teaching and learning e-commerce: 1. Blended Learning: Combine traditional classroom teaching with online resources and activities. 2. Case Studies and Real-Life Examples: Use real-world case studies and examples to illustrate the application of e-commerce concepts and theories 3. Practical Projects and Assignments: Assign practical projects that require students to apply e-commerce principles and develop relevant skills. 4. Guest Speakers and Industry Experts: Invite guest speakers from the e-commerce industry to share their experiences, challenges, and best practices. 5. Collaborative Learning: Encourage collaborative learning by assigning group projects or facilitating online discussions and forums. This allows students to exchange ideas, discuss e-commerce trends, and learn from each other's experiences.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	47	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	78	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	3 and 10	#1, #2 and #8
	Assignments	2	10% (10)	2 and 12	#3, #4 and #6, #7
	Projects	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	#1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to E-Management • Overview of e-management and its relevance in the digital age • Evolution of digital technologies and their impact on businesses • Trends and challenges in e-management
Week 2	Digital Business Strategy • Formulating digital business strategies aligned with organizational goals • Competitive positioning and differentiation in the digital marketplace
Week 3	**Digital Business Strategy:** • Formulating digital business strategies aligned with organizational goals • Competitive positioning and differentiation in the digital marketplace
Week 4	**Digital Business Strategy:** • Digital business models and revenue generation strategies • Strategic planning for digital transformation
Week 5	**E-Marketing and Digital Advertising:** • Digital marketing strategies and techniques • Online consumer behavior and targeting • Social media marketing and content marketing
Week 6	**E-Marketing and Digital Advertising:** • Search engine optimization (SEO) and search engine marketing (SEM) • Mobile marketing and location-based marketing
Week 7	**E-Commerce Management:** • Introduction to e-commerce and its types (B2C, B2B, C2C) • E-commerce platforms and online marketplaces • E-commerce website design and user experience
Week 8	**E-Commerce Management:** • E-commerce payment systems and security • Supply chain management in e-commerce

Week 9	**Data Analytics and Decision-Making:** • Importance of data analytics in e-management • Collecting, analyzing, and interpreting digital data
Week 10	**Data Analytics and Decision-Making:** • Key performance indicators (KPIs) and metrics for e-management • Data visualization and reporting • Data-driven decision-making in various functional areas (marketing, operations, finance)
Week 11	**Digital Leadership and Change Management:** • Leadership skills required in a digital environment • Managing digital transformations within organizations
Week 12	**Digital Leadership and Change Management:** • Change management strategies and overcoming resistance • Innovation and fostering a digital culture
Week 13	**Emerging Technologies and Future Trends:** • Overview of emerging technologies in e-management (e.g., AI, blockchain, IoT) • Impact of technology trends on business management • Future trends in e-management and digital business
Week 14	**Case Studies and Practical Applications:** • Analyzing real-world case studies of successful e-management practices • Applying e-management principles to solve business challenges
Week 15	• Group project presentations • Discussion and reflection on the course
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Textbook: 1. E-Commerce : Business, Technology and Society, by Kenneth C. Laudon and Carol Guercio Traver,Published 2021	Yes (E-copy)

	2. Digital Marketing: Strategy, Implementation and Practice" by Dave Chaffey and Fiona Ellis-Chadwick2019	
Recommended Texts	Finance Book, The: Understand the numbers even if you're not a finance professional (Financial Times) 1st Edition by Stuart Warner (Author), Si Hussain (Author)	Yes (E-copy)
Websites		

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Operating Systems**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS302**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	3		**Semester of Delivery**	5	
Administering Department	CIS		**College**	CSIT	
Module Leader	Dr. Abbas H. Hassin Alasadi		**e-mail**	abbas.hassin@uobasrah.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	1. Understand the purpose and functions of an operating system: • Learn about the role of an operating system in managing computer hardware and software resources. • Understand how an operating system provides a user interface and facilitates communication between applications and hardware. 2. Study process management: • Understand the concept of a process and its components. • Learn about process scheduling algorithms, process synchronization, and inter-process communication mechanisms. 3. Explore memory management: • Understand the concept of memory hierarchy and memory organization in a computer system. • Learn about memory allocation techniques, virtual memory, and memory protection mechanisms. 4. Study file systems: • Understand the concept of a file and file system organization. • Learn about file operations, directory structures, and file system implementation techniques. 5. Explore input/output (I/O) management: • Understand the principles of I/O devices and their interaction with the operating system. • Learn about I/O device drivers, buffering, and I/O scheduling algorithms. 6. Study deadlock handling: • Understand the concept of a deadlock and its causes. • Learn about deadlock prevention, avoidance, detection, and recovery strategies. 7. Understand security and protection mechanisms: • Learn about access control mechanisms, authentication, and authorization. • Study different security threats and techniques for protecting the operating system and user data. 8. Explore distributed systems: • Understand the concepts and challenges of distributed systems. • Learn about network protocols, distributed file systems, and synchronization algorithms in distributed environments. 9. Analyze case studies: • Study real-world operating systems like Unix, Linux, Windows, or macOS. • Understand these operating systems' design principles, architectural components, and functionalities.
Module Learning Outcomes	1. Understand the fundamental concepts and principles of operating systems. 2. Understand the relationship between hardware and software components in

مخرجات التعلم للمادة الدراسية	an operating system. 3. Understand memory management in operating systems: 4. Describe virtual memory concepts, including paging, segmentation, and demand paging. 5. Understand the structure of a file system. 6. Describe the principles of I/O devices and their interaction with the operating system. 7. Explain I/O device drivers, buffering, and I/O scheduling algorithms. 8. Understand the security and protection mechanisms in operating systems. 9. Describe access control mechanisms, including authentication and authorization. 10. Explain security threats and countermeasures in an operating system. 11. Implement security measures to protect the system and user data. 12. Understand the architectural components and functionalities of these operating systems. 13. Compare and evaluate the strengths and weaknesses of different operating systems.
Indicative Contents المحتويات الإرشادية	1. Introduction to Operating Systems: • Purpose and types of operating systems. • Evolution and history of operating systems. 2. Process Management: • Processes, threads, and scheduling. • Process synchronization and communication. 3. Memory Management: • Memory organization and allocation techniques. • Virtual memory and paging. 4. File Systems: • File system structure and operations. • Directory structures and file allocation methods. 5. I/O Management: • I/O devices, drivers, and operations. • I/O buffering and scheduling. 6. Deadlocks: • Deadlock concept, prevention, detection, and recovery. 7. Security and Protection: • User authentication, access control, and security threats. 8. Distributed Systems: • Concepts, challenges, and synchronization in distributed systems. 9. Case Studies: • Analysis of real-world operating systems and their features.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Employing these strategies can create a comprehensive and engaging learning experience in an operating system module, such as lectures, interactive discussions, hands-on lab sessions, case studies, assignments, projects, guest lectures, online resources, assessments, group projects, and continuous support.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**62**	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	88	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	#1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	#3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	#1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Operating Systems • Lecture: Purpose and types of operating systems • Discussion: Evolution and history of operating systems
Week 2	Process Management • Lecture: Processes, threads, and scheduling • Lab Session: Implementing process scheduling algorithms
Week 3	Process Synchronization • Lecture: Process synchronization and inter-process communication • Lab Session: Implementing synchronization mechanisms
Week 4	Memory Management • Lecture: Memory Organization and allocation techniques • Lab Session: Simulating memory allocation strategies
Week 5	Virtual Memory • Lecture: Virtual memory concepts and demand paging • Lab Session: Implementing a basic virtual memory system
Week 6	File Systems • Lecture: File system structure and Operations • Lab Session: Implementing file operations and directory structures
Week 7	I/O Management • Lecture: I/O devices, drivers, and operations • Lab Session: Simulating I/O buffering and scheduling algorithms
Week 8	Deadlocks • Lecture: Deadlock concept and necessary conditions • Lab Session: Implementing deadlock detection and recovery algorithms
Week 9	Security and Protection

	• Lecture: User authentication, access control, and security threats • Discussion: Case studies on security vulnerabilities and countermeasures
Week 10	Distributed Systems • Lecture: Concepts, challenges, and Synchronization in distributed systems • Lab Session: Simulating distributed file systems and synchronization algorithms
Week 11	Case Study: Unix • Lecture: Analysis of Unix architecture and features • Group Project: Analyzing Unix file system and process management
Week 12	Case Study: Linux • Lecture: Analysis of Linux architecture and features • Group Project: Comparing Linux and Unix system calls and utilities
Week 13	Case Study: Windows • Lecture: Analysis of Windows architecture and features • Group Project: Exploring Windows Registry and security mechanisms
Week 14	Review and Exam Preparation • Review of key topics and concepts • Exam practice and preparation
Week 15	Project Presentations and Wrap-up • Group project presentations • Discussion and reflection on the course
Week 16	**A preparatory week before the Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Setting up the development environment for Java programming and familiarizing students with the basic syntax and concepts
Week 2	Creating and managing processes and threads in Java, including process scheduling and thread synchronization.

Week 3	Implementing memory allocation techniques in Java, such as dynamic data structures for managing memory.
Week 4	Creating, reading, and writing files in Java, implementing file operations and directory structures.
Week 5	Implementing I/O operations in Java, including input/output streams, file handling, and buffering.
Week 6	Implementing deadlock detection and prevention algorithms in Java, analyzing resource allocation graphs.
Week 7	Implementing user authentication, access control mechanisms, and security measures in Java applications.
Week 8	Implementing distributed communication and synchronization in Java using network protocols and sockets.
Week 9	Implementing virtual memory concepts in Java, including demand paging and page replacement algorithms.
Week 10	Reviewing key lab session topics and concepts, practicing lab-related questions, and preparing for the lab session exam.
Week 11	Lab Session Exam
Week 12	Conduct a lab session exam to assess students' practical understanding of the lab topics covered.
Week 13	Case Study: Unix-like Operating Systems and Java

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Textbook: 1. "Operating System Concepts" by Abraham Silberschatz, Peter B. Galvin, and Greg Gagne, 2020 2. "Modern Operating Systems" by Andrew S. Tanenbaum and Herbert Bos, 2014.	Yes (E-copy)
Recommended Texts	"Operating Systems: Internals and Design Principles" by William Stallings.	Yes (E-copy)
Websites	GeeksforGeeks: https://www.geeksforgeeks.org/	

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 is 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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Networks I**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS303**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	3		**Semester of Delivery**	5	
Administering Department	CIS		**College**	CSIT	
Module Leader	Dr. Muslim Mohsin Khudhair		**e-mail**	Muslim.khudhair@uobasrah.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	1. Learn about communication systems in general and learn about computer networks and their classifications. 2. Understand network architecture, OSI models, and TCP/IP. 3. Learn how to encode data to be transmitted over computer networks. 4. Learn how to route data through the Routing network and the protocols used in it.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. This course provides a technical and operational overview of digital computer networks, the foundation for all modern information systems and services. 2. It will learn about the major software and hardware technologies used on home and enterprise computer networks as well as the global Internet. 3. It will learn how information is encoded into digital packets, how it is transported across local networks like the one at SU, and how SU and other organizations interconnect over the Internet backbone. 4. This course will emphasize the critical importance of open network standards and protocols, which allow software and hardware from a variety of vendors to interoperate while also driving down the cost of network systems. 5. In addition to the exploring the capabilities and limitations of today's most popular networks, including Ethernet, Wi-Fi, and Cellular, we'll also cover topics closely related to networks.
Indicative Contents المحتويات الإرشادية	**1. Introduction:** Data communications, classification of computer networks, computer networks topologies, communication protocols and standards, layered tasks, the OSI model and layers, TCP/IP protocol suite, addressing. **2. Exploring the Network** Understand and describe the devices and services used to support communications in data networks and the Internet. 3. Network Protocols and Communications Understand and describe the role of protocol layers in data networks. **4. Physical Layer:** Data and signals, analog and digital, analog and digital signals, signals and communication, digital signals, transmission of digital signals, transmission impairments, data rate limits and transmission and performance, digital to digital conversion. **5. Data Link Layer:** Error detection and correction: introduction, CRC and checksum, framing, flow and error control. **6. Transport Layer:** Process to process delivery, Protocols: UDP, TCP and SCTP, congestion control, quality of service. **7. Application Layer Functionality and Protocols:** How do the functions of the three upper OSI model layers provide network services to end-user applications? How do the TCP/IP application layer protocols provide the services specified by the upper layers of the OSI model? How do people use the application layer to communicate across the information network?, What are the functions of well-known TCP/IP applications, such as the World Wide Web and e-mail, and their related services (HTTP, DNS, DHCP, STMP/POP, and Telnet).

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	In a computer network course, students will learn strategies to know the basic concepts of communications and computer networks, and identifies their basics, benefits, shapes, architectures, layers, functions, and possible services, in addition to how to network them.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**45**	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	105	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	#1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	#3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	#1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	General concepts of communication • Communications between devices and components of the communication system and protocols.
Week 2	General concepts about networks • Definition of networks, types of connectivity, protocols and standards.
Week 3	Network models • General study of network models (OSI and Internet models).
Week 4	Learn about more network models • A detailed study of the layers of network models.
Week 5	Study of the physical layer • Study data and digital and analog signals.
Week 6	Learn more about the physical class • Signals and communications, digital and analog transmissions and specifiers.
Week 7	Studying the data link layer • Study the tasks and work of the data link layer.
Week 8	Learn more about the data link layer • Error detection and correction, framing, transmission and error control.
Week 9	Network layer study • Study the functions and work of the network layer.
Week 10	Learn more about the network layer • Addressing, networking, routing concepts.
Week 11	Learn more about the network layer • Routing, routing table components, routing algorithms.
Week 12	Transport layer study • Study the tasks and work of the transport layer.
Week 13	Learn more about the transport layer • Transport layer protocols, congestion control, and quality of service.
Week 14	Learn about cables and their types

	• Study the types of cables and compare them and their uses.
Week 15	Learn about devices and how to connect the network • Connecting networks using cables, routers and switches.
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	Textbook: 3. Behrouz A. Forouzan - Data Communications and Networking with TCP_IP Protocol Suite-McGraw Hill (2021) 4. Er Vikrant Vij - Computer Networks-Laxmi Publications (2018)	Yes (E-copy)

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Software Engineering**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS304**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	3		**Semester of Delivery**	5	
Administering Department	CIS		**College**	CSIT	
Module Leader	Dr. Abbas H. Hassin Alasadi		**e-mail**	abbas.hassin@uobasrah.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	1. Understand the fundamental concepts and principles of software engineering. 2. Gain knowledge of software development life cycle models and their application. 3. Learn techniques for gathering and analyzing software requirements. 4. Develop skills in software design and architectural modeling. 5. Acquire knowledge of software testing techniques and quality assurance practices. 6. Understand the importance of software maintenance and learn strategies for software evolution. 7. Gain practical experience in software development through hands-on projects and assignments. 8. Develop skills in software project management, including planning, estimation, and risk management. 9. Learn about software configuration management and version control systems. 10. Understand the ethical considerations and professional practices in software engineering.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand software engineering principles, methodologies, and life cycles. 2. Analyze and document software requirements effectively. 3. Design software systems and architectures using appropriate techniques. 4. Apply software testing techniques to ensure quality and reliability. 5. Utilize software development tools, programming languages, and version control systems proficiently. 6. Apply project management techniques to plan and track software development projects. 7. Implement strategies for software maintenance, evolution, and refactoring. 8. Collaborate effectively in software development teams. 9. Adhere to ethical considerations and professional practices in software engineering. 10. Stay updated with emerging trends and technologies in software engineering.
Indicative Contents المحتويات الإرشادية	1. Introduction to Software Engineering • Definition and scope of software engineering • Software development life cycle models • Roles and responsibilities of software engineers 2. Software Requirements Engineering • Requirements elicitation and analysis • Requirements specification and documentation • Requirements validation and management 3. Software Design and Architecture • Software design principles and concepts • Design methodologies and approaches • Architectural styles and patterns 4. Software Construction

	• Programming languages and paradigms • Software development tools and environments • Coding standards and best practices 5. Software Testing and Quality Assurance • Testing fundamentals and techniques • Test planning and execution • Quality assurance and process improvement 6. Software Maintenance and Evolution • Software maintenance activities and strategies • Software reengineering and refactoring • Legacy system management 7. Software Project Management • Project planning and estimation • Risk management • Team organization and communication

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	In a software engineering course, students will learn strategies to effectively gather and analyze requirements, design software systems, conduct testing and quality assurance, manage projects, maintain and evolve software, handle configuration management, collaborate in teams, adhere to ethical and professional practices, and stay updated with emerging trends. These strategies provide a comprehensive approach to software engineering, equipping students with the skills and knowledge necessary to develop high-quality software systems professionally and responsibly.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**47**	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	103	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5 and 10	#1, #2 and #3
	Assignments	2	10% (10)	2 and 12	#4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#8, #9 and #10
Summative assessment	Midterm Exam	2hr	10% (10)	7	#1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Software Engineering • Definition and scope of software engineering • Software development life cycle models • Roles and responsibilities of software engineers
Week 2+3	Software Requirements Engineering • Requirements elicitation and analysis • Requirements specification and documentation • Requirements validation and management
Week 4+5	Software Requirements Engineering • Requirements elicitation and analysis • Requirements specification and documentation • Requirements validation and management

Week 6+7	Software Requirements Engineering • Requirements elicitation and analysis • Requirements specification and documentation • Requirements validation and management
Week 8+9	Software Testing and Quality Assurance • Testing fundamentals and techniques • Test planning and execution • Quality assurance and process improvement
Week 10+11	Software Maintenance and Evolution • Software maintenance activities and strategies • Software reengineering and refactoring • Legacy system management
Week 12	Software Project Management • Project planning and estimation • Risk management • Team organization and communication
Week 13	Software Configuration Management • Version control systems • Build and release management • Configuration management processes
Week 14	Software Metrics and Measurement • Software metrics for quality and productivity • Measurement techniques and analysis • Performance evaluation and optimization
Week 15	Software Engineering Ethics and Professional Practices • Ethical Considerations in software engineering • Professional codes of conduct • Intellectual property and copyright issues
Week 15	Project Presentations and Wrap-up • Group project presentations • Discussion and reflection on the course

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Textbook: 5. Sommerville, I. (2016). Software Engineering: Tenth Edition. Pearson Education.	Yes (E-copy)
Recommended Texts	Caitlin Sadowski and Thomas Zimmermann, Rethinking Productivity in Software Engineering, ISBN: 978-1-4842-4220-9, published by Apress, 2019, USA.	Yes (E-copy)
Websites	https://www.sei.cmu.edu/training/courses/introduction-to-software-engineering.cfm	

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 is required, but credit awarded
	F – Fail	راسب	(0-44)	A 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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Artificial Intelligence**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS305**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	3		**Semester of Delivery**	5	
Administering Department	CIS		**College**	CSIT	
Module Leader	Dr. Abdulkareem Younis Abdalli		**e-mail**	Abdulkareem.abdalla@uobasrah.edu.iq	
Module Leader's Acad. Title	Assist. Prof.		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	1- The main objective of the course is to introduce concepts of Artificial Intelligence. 2- The general objectives are to learn about computer systems that - exhibit intelligent behavior, - design intelligent agents, - identify AI problems and solve the problems - design knowledge representation and expert systems, - design neural networks for solving problems, - identify different machine learning paradigms and identify their practical Applications
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1- Understand the ideas and techniques of the principle of artificial intelligent systems. 2- understanding design of intelligent agents, 3- Understand problem solving, 4- Ability to describe searching algorithms, 5- Ability to describe knowledge representation systems, 6- Understanding neural networks and their applications, 7- Knowledge of machine learning 8- Understanding Deep learning 9- Ability to use natural language processing.
Indicative Contents المحتويات الإرشادية	1- Introduction. 2 -Intelligent Agents 3- Problem Solving by Searching 4- Knowledge Representation 5- Machine Learning 6- Applications of AI

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Employing these strategies can create a comprehensive and engaging learning experience in an artificial intelligence module, such as lectures, interactive discussions, hands-on lab sessions, case studies, assignments, projects, guest lectures, online resources, assessments, group projects, and continuous support.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**62**	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	113	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	#1, #2 and #3, #4
	Assignments	2	10% (10)	2 and 12	#5, #6 and #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#8 and #9
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	#1 - #6
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction. 1- Introduction to AI 2- History of AI 3- Foundations of AI: 4- Applications of AI
Week 2	Intelligent Agents 1- Introduction of agents, Structure of Intelligent agent, Properties of Intelligent Agents 2- Types of Agents: Simple Reflexive, Model Based, Goal Based, Utility Based, Learning Agent
Week 3+4+5	Problem Solving by Searching 3- Definition,State space representation, Problem as a state space search, Problem formulation, Well-defined problems 2- Solving Problems by Searching, Search Strategies: Informed, Uninformed, Performance evaluation of search strategies: Time Complexity, Space Complexity, Completeness, Optimality 3- Uninformed Search: Depth First Search, Breadth First Search, … 4- Informed Search: Greedy Best Firs tSearch, A* Search, …
Week 6+7+8+9	Knowledge Representation 1- Definition and importance of Knowledge, Issues in Knowledge Representation, Knowledge Representation Systems, Properties of Knowledge Representation Systems 2- Types of Knowledge Representation Systems: Semantic Nets, Frames, Conceptual Dependencies, Scripts, Rule Based Systems(Production System), Propositional Logic, Predicate Logic 3- Propositional Logic(PL): Syntax, Semantics, Formal logic-connectives, truth tables, validity, well-formed-formula, Inference using Resolution, Backward Chaining and Forward Chaining

	4- Predicate Logic: FOPL, Syntax, Semantics, Quantification, Inference with FOPL: By converting into PL (existential and universal instantiation), Unification and lifting, Inference using resolution 5- Handling Uncertain Knowledge,
Wee 10+11+12+ 13	Machine Learning. 1- Introduction to Machine Learning, Concepts of Learning, Supervised, Unsupervised and Reinforcement Learning 2- Learning with Neural Networks: Introduction, Biological Neural Networks Vs. Artificial Neural Networks (ANN), Mathematical Model of ANN, Activation Functions: Linear, Step Sigmoid, Types of ANN: Feed-forward, Recurrent, Single Layered, Multi-Layered, Application of Artificial Neural Networks, Learning by Training ANN, Supervised vs. Unsupervised Learning, Hebbian Learning, Perceptron Learning, Back-propagation Learning 3- Deep Learning
Week 14+15	**Applications of AI** 1- Expert Systems, Components of Expert System: Knowledge base, inference engine, user interface, working memory, Development of Expert Systems 2- Natural Language Processing: Natural Language Understanding and Natural Language Generation, Steps of Natural Language Processing: Lexical Analysis(Segmentation, Morphological Analysis), Syntactic Analysis, Semantic Analysis, Pragmatic Analysis, Machine Translation, 3- Machine Vision Concepts: Machine vision and its applications, Components of Machine Vision System **4-** Robotics: Robot Hardware (Sensors and Effectors) , Robotic Perceptions

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Intelligent Agents Write programs for implementing simple intelligent agents. .
Week 2+3+4+5	Problem Solving by Searching • Write programs for illustrating the concepts of 1- Uninformed Search like DFS, BFS, etc. 2- Informed Search like Greedy Best First, A*, etc.
Week 6+7+8+9	Knowledge Representation •Write programs for illustrating the concepts knowledge representation systems 1- rule based (program with if then rules) 2- predicate logic (using predicates like in Prolog) 3- frames (using concepts of class) 4- semantic nets (using concepts of graph)
Week 10+11+12	Machine Learning • Write program for implementing Neural Networks for realization of AND, OR gates. • Write program for implementing Backpropagation Learning. • Write program for implementing Deep learning.
Week 13+14+15	Applications of AI • Write program for implementing expert systems like disease prediction, weather forecasting etc.

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Textbook:	• Stuart Russel and Peter Norvig, Artificial Intelligence A Modern Approach, Pearson	
Reference Books:	• George F. Luger, Artificial Intelligence: Structures and Strategies for Complex Problem Solving, Benjamin/Cummings Publication • E. Rich, K. Knight, Shivashankar B. Nair, Artificial Intelligence, Tata McGraw Hill. • D. W. Patterson, Artificial Intelligence and Expert Systems, Prentice Hall. • P. H. Winston, Artificial Intelligence, Addison Wesley.	

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Selected Topics (Business Intelligence)**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS306**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	3		**Semester of Delivery**	6	
Administering Department	CIS		**College**	CSIT	
Module Leader	Dr. Abbas H. Hassin Alasadi		**e-mail**	abbas.hassin@uobasrah.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	1. Understand the concept and importance of Business Intelligence 2. Familiarity with BI tools and technologies 3. Gain proficiency in data integration and management 4. Develop data analysis skills 5. Master data visualization and reporting 6. Understand performance management and KPIs 7. Ethical and legal considerations in BI 8. Apply BI concepts and tools in real-world scenarios 9. Develop critical thinking and problem-solving abilities 10. Collaborate and communicate effectively
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Define and explain the concept of Business Intelligence and its role in modern organizations. 2. Describe the benefits and potential challenges of implementing Business Intelligence solutions. 3. Identify and evaluate various Business Intelligence tools, technologies, and methodologies. 4. Gather, integrate, and transform data from different sources for Business Intelligence purposes. 5. Apply data analysis techniques, such as statistical methods, data mining, and predictive modeling, to derive insights from data. 6. Design and create effective data visualizations, reports, and dashboards to communicate data insights. 7. Develop an understanding of performance management and Key Performance Indicators (KPIs) and their application in Business Intelligence. 8. Demonstrate awareness of ethical and legal considerations related to data privacy, security, and confidentiality in Business Intelligence. 9. Apply Business Intelligence concepts and tools to solve real-world business problems and make data-driven decisions. 10. Work collaboratively in teams to analyze data, develop solutions, and present findings and recommendations. 11. Demonstrate critical thinking and problem-solving skills in the context of Business Intelligence. 12. Effectively communicate data insights, analysis results, and recommendations to technical and non-technical stakeholders. 13. Reflect on the ethical implications and societal impact of Business Intelligence practices. 14. Continuously adapt and update their knowledge and skills in response to evolving Business Intelligence technologies and trends.
Indicative Contents المحتويات الإرشادية	**1. Introduction to Business Intelligence** ▪ Definition and scope of Business Intelligence ▪ Importance and benefits of Business Intelligence ▪ Key components and capabilities of Business Intelligence systems **2. Business Analytics** ▪ Overview of business analytics and its relationship with Business Intelligence ▪ Descriptive, predictive, and prescriptive analytics ▪ Statistical analysis and data visualization techniques

	3. Data Visualization and Reporting ▪ Principles of effective data visualization ▪ Tools and techniques for data visualization ▪ Designing interactive dashboards and reports **4. Performance Management** ▪ Performance management framework and its role in Business Intelligence ▪ Key Performance Indicators (KPIs) and performance measurement ▪ Balanced scorecards and performance reporting **5. Business Intelligence Architecture** ▪ Overview of the Business Intelligence architecture ▪ Data integration and data quality management ▪ Data modeling and data mart design **6. Self-Service Business Intelligence** ▪ Empowering end-users with self-service BI tools ▪ Exploratory data analysis and ad-hoc reporting ▪ User-friendly interfaces and interactive data discovery **7. Big Data and Business Intelligence** ▪ Introduction to big data and its impact on Business Intelligence ▪ Challenges and opportunities of analyzing big data ▪ Technologies and tools for big data analytics **8. Cloud-Based Business Intelligence** ▪ Cloud computing and its role in Business Intelligence ▪ Benefits and challenges of cloud-based BI solutions ▪ Data storage, processing, and analytics in the cloud **9. Business Intelligence Project Management** ▪ Planning and managing a Business Intelligence project ▪ Project lifecycle and key considerations ▪ Change management and user adoption strategies

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	The strategies covered in the Business Intelligence course include developing a BI strategy aligned with organizational goals, implementing effective data governance and management practices, managing BI implementation projects, facilitating change management and user adoption, establishing performance management systems and KPIs, employing data visualization and reporting strategies, promoting self-service BI capabilities, exploring big data strategies and technologies, considering cloud-based BI solutions, addressing ethical and legal considerations, and staying informed about future trends in Business Intelligence.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**45**	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	105	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	#1, #2 and #3
	Assignments	2	10% (10)	2 and 12	#4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#8, #9 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	#1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Business Intelligence • Definition and scope of Business Intelligence • Importance and benefits of Business Intelligence
Week 2	Business Analytics and Descriptive Analytics • Overview of business analytics • Descriptive analytics techniques and tools
Week 3+4	Business Analytics and Descriptive Analytics • Overview of business analytics • Descriptive analytics techniques and tools
Week 5	Performance Management and KPIs • Performance management framework • Key Performance Indicators (KPIs)
Week 6+7	Business Intelligence Architecture • Overview of the BI architecture • Data integration and data quality management
Week 8	Data Visualization and Reporting Strategies • Effective data visualization techniques • Designing impactful reports and dashboards
Week 9	Self-Service Business Intelligence • Enabling end-users with self-service BI tools • Exploratory data analysis and ad-hoc reporting
Week 10+11	Big Data and Business Intelligence • Introduction to big data and its impact on BI • Tools and technologies for big data analytics

Week 12	Cloud-Based Business Intelligence • Cloud computing in the BI context • Benefits and challenges of cloud-based BI solutions
Week 13	Business Intelligence Implementation and Project Management • Planning and executing a BI implementation project • Change management and user adoption strategies
Week 15	Ethical and Legal Considerations in Business Intelligence • Privacy, security, and confidentiality in BI • Compliance with data protection regulations

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Textbook: 6. Turban, Efraim Sharda, Ramesh Delen, Dursun King, David Business Intelligence: A Managerial Approach, Pearson Education, Prentice Hall (2011).	Yes (E-copy)
Recommended Texts	Swain Scheps - Business Intelligence For Dummies-For Dummies (2008)	Yes (E-copy)
Websites	https://www.datasciencecentral.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
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	F – Fail	راسب	(0-44)	A considerable amount of work required

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Operations Research			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS307**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	3		**Semester of Delivery**	6	
Administering Department	CIS		**College**	CSIT	
Module Leader	Ass. Prof. Sahera A. Sead Almola		**e-mail**	saherasead@uobasrah.edu.iq	
Module Leader's Acad. Title	Ass. Professor		**Module Leader's Qualification**	M.Sr.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	10/06/2023		**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	• To introduce the students how to use variables for formulating complex mathematical models in management science, industrial engineering and transportation science. • To provide the students with opportunity of using various software package for solving linear programming and integer programming models. • To introduce the students to the use of basic methodology for the solution of linear programs and integer programs. • To introduce the students to the basic concepts of polyhedral theory and valid inequalities and how to integrate the theory to the solution methods for integer programming. • To introduce the students to the advanced methods for large-scale transportation and assignment problems.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Students would be able to: 1. CO1 Identify and develop operations research model describing a real-life problem. 2. CO2 Understand the mathematical tools that are needed to solve various optimization problems. 3. CO3 Solve various linear programming, transportation, assignment, queuing, inventory and game problems related to real life.

Indicative Contents
المحتويات الإرشادية
	• INTRODUCTION TO OPERATIONS RESEARCH
	• Introduction
	• Origin and Definitions of Operations Research
	• Scope of Operations Research
	• Advantages of Operations Research
	• Limitations of Operations Research
	• LINEAR PROGRAMMING PROBLEMS
	• Introduction
	• Linear Programming Problem (LPP)
	• Mathematical Formulation of LPP
	• Graphical Method
	• Canonical and Standard Form of LPP
	• SIMPLEX METHOD AND DUALITY IN LINEAR PROGRAMMING
	• Introduction
	• Simplex Method
	• Artificial Variable Techniques
	• Big-M Method
	• Two-Phase Method
	• Duality in Linear Programming
	• TRANSPORTATION PROBLEM
	  • Introduction
	  • Mathematical Formulation of the Transportation Problem

	• Methods of Finding Initial Basic Feasible Solution • Methods of Finding Optimal Solution • Unbalanced Transportation Problem • ASSIGNMENT PROBLEMS • Introduction • Assignment Problems • Hungarian Method • Unbalanced Assignment Problem • Case of Maximization of an Assignment Problem • Travelling Salesman Problem 6. QUEUEING THEORY • Introduction. • Basic Concepts of Queueing Theory. • Fundamental Structure of a Queueing System. • Operating Characteristics of a Queueing System. • M/M/1 or M/M/1: ∞/FCFS Queueing Model.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Employing these strategies can create a comprehensive and engaging learning experience in an operation research module, such as lectures, interactive discussions, tutorial sessions, case studies, assignments, projects, guest lectures, online resources, assessments, group projects, and continuous support.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	47	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	103	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	3 and 10	#1, #2 and #3
	Assignments	2	10% (10)	4 and 12	#2, #3
	Projects / Tutorial	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#1, #2 and #3
Summative assessment	Midterm Exam	2hr	10% (10)	9	#1 - #3
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	1. INTRODUCTION TO OPERATIONS RESEARCH • Introduction • Origin and Definitions of Operations Research • Scope of Operations Research
Week 2	• Advantages of Operations Research • Limitations of Operations Research
Week 3	2. LINEAR PROGRAMMING PROBLEMS • Introduction • Linear Programming Problem (LPP)

	• Mathematical Formulation of LPP
Week 4	• Graphical Method • Canonical and Standard Form of LPP
Week 5	3. SIMPLEX METHOD AND DUALITY IN LINEAR PROGRAMMING • Introduction • Simplex Method • Artificial Variable Techniques
Week 6	• Big-M Method • Two-Phase Method • Duality in Linear Programming
Week 7	4. TRANSPORTATION PROBLEM • Introduction • Mathematical Formulation of the Transportation Problem • Methods of Finding Initial Basic Feasible Solution
Week 8	• Methods of Finding Optimal Solution • Unbalanced Transportation Problem
Week 9	Midterm Exam
Week 10	5. ASSIGNMENT PROBLEMS • Introduction • Assignment Problems • Hungarian Method • Unbalanced Assignment Problem • Case of Maximization of an Assignment Problem • Travelling Salesman Problem
Week 11	6. QUEUEING THEORY • Introduction.

	• Basic Concepts of Queueing Theory.
Week 12	• Fundamental Structure of a Queueing System. • Operating Characteristics of a Queueing System.
Week 13	• M/M/1 or M/M/1: ∞/FCFS Queueing Model.
Week 14	Review Review of key topics and concepts
Week 15	Project Presentations and Wrap-up • Group project presentations
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Tutorial Syllabus) المنهاج الاسبوعي	
	Material Covered
Week 1	Examples and exercises on the topic1
Week 2	Examples and exercises on the topic1
Week 3	Examples and exercises on the topic2
Week 4	Examples and exercises on the topic2
Week 5	Examples and exercises on the topic3
Week 6	Examples and exercises on the topic3
Week 7	Examples and exercises on the topic3
Week 8	Examples and exercises on the topic4
Week 9	Examples and exercises on the topic4
Week 10	Examples and exercises on the topic5
Week 11	Examples and exercises on the topic5
Week 12	Examples and exercises on the topic6
Week 13	Examples and exercises on the topic6

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Textbook: 7. "OPERATIONS RESEARCH TECHNIQUES",Dr. Monika, 2021.	Yes (E-copy)
Recommended Texts	1. H.A. Taha, Operation Research-An introduction, Printice Hall of India. 2. P.K. Gupta and D.S. Hira, Operations Research, S. Chand & Co. 3. S.D. Sharma, Operation Research, Kedar Nath Ram Nath Publications. 4. J.K. Sharma, Mathematical Model in Operation Research, Tata McGraw Hill.	Yes (E-copy)
Websites	GeeksforGeeks: https://www.geeksforgeeks.org/	

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Project Management**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☐ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS308**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level	3		**Semester of Delivery**	6	
Administering Department	CIS		**College**	CSIT	
Module Leader	Ass. Prof. Sahera A. Sead Almola		**e-mail**	saherasead@uobasrah.edu.iq	
Module Leader's Acad. Title	Ass. Professor		**Module Leader's Qualification**	Mr.S	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	• Understand why information technology (IT) projects are organizational investments. • Understand why projects are planned organizational change and why they must align with an organization's business strategy. • Define what a project is and describe the attributes of a project. • Define the discipline called project management. • Understand the relationship among project portfolios, programs, and projects. • Understand how the disciplines of information technology and project management have evolved together and have led to how we manage projects today. • Understand the current state of IT project management. • Understand why some projects fail and how to improve the likelihood of success. ▪ Define what a methodology is and the role it serves. ▪ Describe the Project Life Cycle (PLC). ▪ Describe the Project Management Body of Knowledge (PMBOK®) and be familiar with its knowledge areas and process groups. ▪ Describe PRINCE2® and be familiar with its core principles, processes, and themes. ▪ Describe the Systems Development Life Cycle (SDLC). ▪ Describe the Waterfall method for developing the project's product or system. ▪ Describe the Agile approach for developing the project's product or system as well as two commonly used approaches called eXtreme Programming (XP) and Scrum. ▪ Describe and apply the concept of Learning Cycles and lessons learned. ▪ Describe and develop a project's MOV. ▪ Understand the purpose of a business case. ▪ Prepare a business case. ▪ Distinguish between financial and scoring models. ▪ Understand how projects are selected. ▪ Describe the planning phase of the project life cycle (PLC).

	▪ Define the project's infrastructure. ▪ Describe project governance and its role. ▪ Understand the roles of the project manager and how the project team is selected. ▪ Understand how a project acquires both internal and external resources. ▪ Understand and describe the project environment. ▪ Describe the three general categories for procurement-type contracts. ▪ Develop a project charter and understand its relationship to the project plan.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Following this course, students will be able to describe a project life cycle, and can skillfully map each stage in the cycle 2. Students will identify the resources needed for each stage, including involved stakeholders, tools and supplementary materials 3. Students will describe the time needed to successfully complete a project, considering factors such as task dependencies and task lengths 4. Students will be able to provide internal stakeholders with information regarding project costs by considering factors such as estimated cost, variances and profits 5. Students will be able to develop a project scope while considering factors such as customer requirements and internal/external goals
Indicative Contents المحتويات الإرشادية	1. The Nature of Information Technology Projects 10. Introduction 11. What Is a Project? 12. Project Attributes 13. What Is Project Management? 14. Projects, Programs, and Portfolios 15. Project Management and Information Technology 16. The State of IT Project Management 17. Why Many Projects Fail 18. Improving the Likelihood of Success 2. Project Methodologies and Processes 19. Introduction 20. The Project Life Cycle 21. The Project Management Body of Knowledge (PMBOK®) 22. Project Management Knowledge Areas 23. Project Processes 24. Project Management Process Groups

	25. The Systems Development Life Cycle (SDLC) 26. The PLC and the SDLC 27. Implementing the SDLC 28. Waterfall 29. Agile Systems Development 30. What Is Agile? 3. Measurable Organizational Value and the Business Case • Introduction • Measurable Organizational Value (MOV) • The MOV and Project Objectives • Developing the MOV • The Business Case • What Is a Business Case? • Developing the Business Case • Project Selection and Approval • The IT Project Selection Process • The Project Selection Decision 4. Project Planning: The Project Infrastructure • Introduction • Project Governance • The Project Team • The Project Manager • The Project Team • The Organization and Project Planning • The Functional Organization • The Project Organization • The Matrix Organization • Procuring External Project Resources • Procurement Planning • Contracts Between Sellers and Buyers • The Project Environment • The Project Charter

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Innovative teaching strategies are beneficial because they create a more engaging learning environment. By providing various ways for students to interact with the material, these strategies can help them gain a deeper understanding of the subject matter.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**47**	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	78	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	5
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**125**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	#1, #2 and #5, #4
	Assignments	2	10% (10)	2 and 12	#3, #4 and #5
	Projects / Tutorial.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#3, #4 and #5
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	#1 - #5
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	The Nature of Information Technology Projects • Introduction • What Is a Project? • Project Attributes
Week 2	• What Is Project Management? • Projects, Programs, and Portfolios • Project Management and Information Technology • The State of IT Project Management
Week 3	• Why Many Projects Fail • Improving the Likelihood of Success
Week 4	Project Methodologies and Processes • Introduction • The Project Life Cycle • The Project Management Body of Knowledge (PMBOK®) • Project Management Knowledge Areas
Week 5	• Project Processes • Project Management Process Groups • The Systems Development Life Cycle (SDLC) • The PLC and the SDLC • Implementing the SDLC
Week 6	• Waterfall • Agile Systems Development • What Is Agile?
Week 7	Measurable Organizational Value and the Business Case • Introduction • Measurable Organizational Value (MOV)

	• The MOV and Project Objectives
Week 8	• Developing the MOV • The Business Case • What Is a Business Case?
Week 9	• Developing the Business Case • Project Selection and Approval • The IT Project Selection Process • The Project Selection Decision
Week 10	Project Planning: The Project Infrastructure • Introduction • Project Governance • The Project Team
Week 11	• The Project Manager • The Project Team • The Organization and Project Planning
Week 12	• The Functional Organization • The Project Organization
Week 13	• The Matrix Organization • Procuring External Project Resources • Procurement Planning
Week 14	• Contracts Between Sellers and Buyers • The Project Environment • The Project Charter
Week 15	• Group project presentations • Discussion and reflection on the course
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly **Tutorial** . Syllabus) المنهاج الاسبوعي للتدريب(برنامج **Ms Project**)	
	Material Covered
Week 1	• Setup program installation work • Get acquainted with the program interface or GUI • How the calendar works on the program
Week 2	• Check the times in the calendar • WBS • Project application (example building a house)
Week 3	• Constrains and deadlines • Notes and links or links • Hypertext
Week 4	• Resources • Type of Resources • Create Resources sheet in MS project • Modify Resources • Assign Resources to Task
Week 5	• critical task • critical path
Week 6	• Variable Cost • Fixed Cost
Week 7	• Exam1
Week 8	• Gantt Chart Style • Report and print.
Week 9	• Sort • filter for tasks- • Progress line of the project
Week 10	• Milestone • Calendar view
Week 11	• Network Diagram • Split view • Timeline
Week 12	Exam2
Week 13	• Early beginnings and early endings • Task completion percentage

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Textbook: 8. "INFORMATION TECHNOLOGY PROJECT MANAGEMENT", FIFTH EDITION, Jack T. Marchewka,2015.	Yes (E-copy)
Recommended Texts	2."INFORMATION TECHNOLOGY PROJECT MANAGEMENT", FOURTH EDITION, Jack T. Marchewka,2012.	Yes (E-copy)

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.

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Networks II**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSITCIS309**				
ECTS Credits	**7**				
SWL (hr/sem)	**175**				
Module Level	3		**Semester of Delivery**	6	
Administering Department	CIS		**College**	CSIT	
Module Leader	Dr. Muslim Mohsin Khudhair		**e-mail**	Muslim.khudhair@uobasrah.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	01/06/2023		**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	1. Explain the network devices. 2. Medium access control 3. Switching in networks 4. Routing, internet working 5. Explain LAN Technologies. 6. Explains the IP addressing. 7. Explain the IP subnetting. 8. Explain the principles of routing.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. This course provides a technical and operational overview of digital computer networks, the foundation for all modern information systems and services. 2. It will learn about the major software and hardware technologies used on home and enterprise computer networks as well as the global Internet. 3. It will learn how information is encoded into digital packets, how it is transported across local networks like the one at SU, and how SU and other organizations interconnect over the Internet backbone. 4. This course will emphasize the critical importance of open network standards and protocols, which allow software and hardware from a variety of vendors to interoperate while also driving down the cost of network systems. 5. In addition to exploring the capabilities and limitations of today's most popular networks, including Ethernet, Wi-Fi, and Cellular, we'll also cover topics closely related to networks.
Indicative Contents المحتويات الإرشادية	**Routing Principles:** • General Routing Concepts • Link State and Distance Vector Protocols • Split Horizon • Summarization • Classful and a Classless routing protocol • Routing decision criteria • Routing Information Base (RIB) and Routing Protocols Interaction • Administrative Distance • Routing Table • RIB and Forwarding Information Base interaction • Redistribution • Redistribution between routing • Troubleshooting routing loop **IP Routing** • OSPF • Standard OSPF area • Stub area • Totally stub area • Not-so-stubby-area (NSSA) • Totally NSSA • Link State Advertisement (LSA) types • Adjacency on a point-to-point and on a multi-access (broadcast) • OSPF graceful restart

	• Troubleshooting failing adjacency formation to fail • Troubleshooting of external route installation in the RIB • EIGRP • Best path • Loop free paths • EIGRP operations when alternate loop free paths are available and when it is not available • EIGRP queries • Manual summarization • Auto-summarization • EIGRP Stubs • Troubleshooting of EIGRP neighbor adjacencies **LAN Switching** • Trunks • VLAN Trunking Protocol (VTP) administrative functions • Ethernet • Speed • Duplex • Ethernet • Fast Ethernet • Gigabit Ethernet

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	In a computer network course, students will learn strategies to know the basic concepts of communications and computer networks, and identifies their basics, benefits, shapes, architectures, layers, functions, and possible services, in addition to how to network them.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**60**	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	115	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	6
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**175**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	#1, #2 and #10, #11
	Assignments	2	10% (10)	2 and 12	#3, #4 and #6, #7
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	#1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Routing Principles • General Routing Concepts • Link State and Distance Vector Protocols • Split Horizon • Summarization
Week 2	Routing Principles • Classful and a Classless routing protocol • Routing decision criteria • Routing Information Base (RIB) and Routing Protocols Interaction
Week 3	Routing Principles • Administrative Distance • Routing Table • RIB and Forwarding Information Base interaction
Week 4	Routing Principles • Redistribution • Redistribution between routing • Troubleshooting routing loop
Week 5	IP Routing • OSPF • Standard OSPF area • Stub area
Week 6	IP Routing • Totally stub area • Not-so-stubby-area (NSSA) • Totally NSSA
Week 7	IP Routing • Link State Advertisement (LSA) types • Adjacency on a point-to-point and on a multi-access (broadcast) • OSPF graceful restart
Week 8	IP Routing • Troubleshooting failing adjacency formation to fail • Troubleshooting of external route installation in the RIB • EIGRP

Week 9	IP Routing • Best path • Loop free paths • EIGRP operations when alternate loop free paths are available and when it is not available
Week 10	IP Routing • EIGRP queries • Manual summarization
Week 11	IP Routing • Auto-summarization • EIGRP Stubs • Troubleshooting of EIGRP neighbor adjacencies
Week 12	LAN Switching • Trunks • VLAN Trunking Protocol (VTP) administrative functions
Week 13	LAN Switching • Ethernet • Speed
Week 14	LAN Switching • Duplex • Ethernet
Week 15	LAN Switching • Fast Ethernet • Gigabit Ethernet
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Study different types of Network cables and practically implement the cross-wired cables and straight-through cables using a clamping tool.
Week 2	
Week 3	Study of Network Devices in Detail.
Week 4	Study of Network addressing.
Week 5	Connect the computers in LAN.

Week 6	Packet Tracer Program.
Week 7	Basic Switch & Router Configuration.
Week 8	Router Configuration in Small Network.
Week 9	Address Resolution Protocol ARP and Reverse Address Resolution Protocol RARP.
Week 10	Domain Name Service (DNS)
Week 11	Dynamic Host Control Protocol (DHCP).
Week 12	Virtual Local Area Network (VLAN).
Week 13	Comprehensive testing laboratory procedures.

Delivery Plan (Weekly Tutorial Syllabus) المنهاج الاسبوعي	
	Material Covered
Week 1	Examples and exercises on the topic1
Week 2	Examples and exercises on the topic1
Week 3	Examples and exercises on the topic2
Week 4	Examples and exercises on the topic2
Week 5	Examples and exercises on the topic3
Week 6	Examples and exercises on the topic3
Week 7	Examples and exercises on the topic3
Week 8	Examples and exercises on the topic4
Week 9	Examples and exercises on the topic4
Week 10	Examples and exercises on the topic5
Week 11	Examples and exercises on the topic5
Week 12	Examples and exercises on the topic6
Week 13	Examples and exercises on the topic6

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Textbook: 9. Behrouz A. Forouzan - Data Communications and Networking with TCP_IP Protocol Suite-McGraw Hill (2021) 10. James F. Kurose, Keith W. Ross - Computer Networks A Top-Down Approach -Laxmi Publications (2017) 11. Tanenbaum Andrew S., Wetherall David J. - Computer Networks-Prentice Hall (2011)	Yes (E-copy)

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
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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

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MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**E-Commerce**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CSIT0310**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	3		**Semester of Delivery**	6	
Administering Department	CSIT0310		**College**	CSIT	
Module Leader	Dr. Nahla Abbas Flayh		**e-mail**	Nahla.flayh@uobasrah.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Ph.D.	
Module Tutor	Name (if available)		**e-mail**	E-mail	
Peer Reviewer Name	Name		**e-mail**	E-mail	
Scientific Committee Approval Date	09/06/2023		**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 main objective of this course is to provide basic concepts of E-commerce, E-commerce Business Models, E-Payments, E-commerce Security, Digital Marketing, Search Engine Optimization, and Basics of Recommendation System.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	7. Understand the fundamental concepts and principles of e-commerce. 8. Analyze the impact of e-commerce on businesses. 9. Evaluate e-commerce technologies and platforms. 10. Develop e-commerce strategies. 11. Understand legal and ethical considerations in e-commerce. 12. Implement and manage online stores and websites. 13. Apply digital marketing techniques. 14. Understand e-commerce analytics and data-driven decision-making. 15. Manage e-commerce operations and logistics. 16. Stay updated with emerging trends and future directions in e-commerce.

Indicative Contents
المحتويات الإرشادية
	• **Introduction to E-commerce**
	  • Define E commerce
	  • Brief history of E commerce
	  • Forces fueling E-com
	  • E-Com Vs E-Business
	  • Challenges to traditional methods
	  • E-business communities
	  • Model for E-business
	  • E-com industry framework
	  • Information superhighway
	  • Types of E-com
	  • Road map for moving a business to E-business
	  • E-business Trident
	• **Transaction Security**
	  • Firewalls & N/W security
	  • Type of firewall, security policies
	  • Emerging firewall management issue
	  • Transaction security
	  • Types of online transactions
	  • Requirement for online transactions
	  • Encryption & transaction security
	  • Secret –key Encryption
	  • Public key Encryption
	  • Implementation & management issues
	  • WWW& security

	• Secure socket layers
	• Security & online web based banking
	• **E-payment system**
	  • Overview o**f** Electronic Payment System
	  • Digital cash, properties
	  • Electronic check & benefits
	  • Online credit card system
	  • Types of credit card payments
	  • Secure electronic transactions(SET)
	  • Other emerging financial instruments
	  • Debit card & Point of scale(POS)
	  • Debit card & E-benefit transfer
	  • Smart cards
	  • Electronic fund transfer
	  • Intelligent agents
	• **Different E-Transactions**
	  • E-com & Retailing
	  • E-com & Online publishing
	• **E Business Issues & Internet Marketing**
	  • Organizational issues
	  • Implementation issues Marketing issues
	  • Internet marketing
	  • Different stages of Internet marketing
	  • Critical success factors for Internet marketing.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	When it comes to learning and teaching strategies for e-commerce, it's important to consider the digital nature of the subject matter. Here are some strategies that can be effective in teaching and learning e-commerce: 6. Blended Learning: Combine traditional classroom teaching with online resources and activities. 7. Case Studies and Real-Life Examples: Use real-world case studies and examples to illustrate the application of e-commerce concepts and theories 8. Practical Projects and Assignments: Assign practical projects that require students to apply e-commerce principles and develop relevant skills. 9. Guest Speakers and Industry Experts: Invite guest speakers from the e-commerce industry to share their experiences, challenges, and best practices. 10. Collaborative Learning: Encourage collaborative learning by assigning group projects or facilitating online discussions and forums. This allows students to exchange ideas, discuss e-commerce trends, and learn from each other's experiences.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (hr/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**47**	**Structured SWL (hr/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (hr/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	103	**Unstructured SWL (hr/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	7
Total SWL (hr/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	10% (10)	5 and 10	#1, #2 and #8
	Assignments	2	10% (10)	2 and 12	#3, #4 and #6, #7
	Projects	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	#5, #8 and #10
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	#1 - #7
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	• Introduction to E-commerce • Forces fueling E-com E-Com Vs E-Business
Week 2	• Challenges in ElectroniCommerce • Model For E-commerce
Week 3	• The Information Superhighway • Discussion
Week 4	• Types of E-commerce • E-business Trident
Week 5	• Transaction Security • Emerging Firewall Management Issues
Week 6	• Transaction Security • Requirements for Transaction Security
Week 7	• Secret-Key Encryption • Implementation and Management Issues
Week 8	• Www and Security • Electronic Payment Systems
Week 9	• Overview of the Electronic Payment Technology • Electronic Checks
Week 10	• Types of Credit Card Payments • Other Emerging Financial Instruments
Week 11	• Smart Cards • Electronic Funds Transfer
Week 12	• Electronic Commerce and Banking • Home Banking History
Week 13	• Banking via Online Services • Management Issues in Online Banking
Week 14	• Review of key topics and concepts • Exam practice and preparation

Week 15	• Group project presentations • Discussion and reflection on the course
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Textbook: 1.Digital Business and E-Commerce Management, 7th edition, Dave Chaffey, Tanya Hemphill, David Edmundson-Bird, Published by (June 14th 2019) - Copyright © 2019 2. eCommerce Marketing: How to Get Traffic That BUYS to your Website Paperback – October 28, 2019 by Chloe Thomas (Author), Rytis Lauris (Foreword)	Yes (E-copy)
Recommended Texts	Finance Book, The: Understand the numbers even if you're not a finance professional (Financial Times) 1st Edition by Stuart Warner (Author), Si Hussain (Author)	Yes (E-copy)
Websites		

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

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