MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

System Analysis and Design-CS204

Module Information معلومات المادة الدراسية					
Module Title	computer networks			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☐ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code					
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level	2		**Semester of Delivery**	2	
Administering Department	Computer Science		**College**	Computer Science	
Module Leader	م.م كرار علي Ass. Lec Karrar Ali		**e-mail**		
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Master Dgree	
Module Tutor			**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		**Semester**	
Co-requisites module		**Semester**	

Module Aims, Learning Outcomes and Indicative Contents
هداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	Introduction to Computer Networks, The advantages and disadvantages of computer networks, Network Components: NIC, Repeater HUB, Bridge, Router, BRouter, GATEWAY and Data Flow, Network Classification, LAN the advantages and disadvantages of each topology. Transmission Media: Cabling Summary, Wireless Transmission, and Wireless LAN Media Summary, internetwork (Internet), Protocol Hierarchies, Design Issues for The Layers: Chapter Five: Reference Model, The OSI Reference model
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**Knowledge & Understanding** 1- Define core networking concepts such as nodes, routers, switches, and protocols. 2- Differentiate between common network types (LAN, WAN, MAN, PAN). 3- Explain the OSI and TCP/IP models, specifying the function of each layer. 4- Describe essential protocols (IP, TCP, UDP, HTTP, DHCP, DNS). **Cognitive Skills (Analysis & Critical Thinking)** 1- Diagnose network problems and identify likely points of failure. 2- Compare alternative connection technologies in terms of performance, security, and cost. 3- Select an appropriate network design based on given technical requirements. **Practical Skills (Application)** 1- Configure a simple local area network (LAN) using basic networking devices. 2- Set IP parameters manually or via DHCP. 3- Employ common troubleshooting and analysis tools (Ping, Traceroute, ipconfig/ifconfig, Wireshark).
Indicative Contents المحتويات الإرشادية	**Introduction to Computer Networks** 1- Definition and purpose of networking 2- Network components (hosts, nodes, links, media) 3- Types of networks: LAN, WAN, MAN, PAN **Network Topologies and Architectures** 1- Physical and logical topologies (bus, star, mesh, ring) 2- Peer-to-peer vs. client-server networks 3- Network architecture models **The OSI and TCP/IP Models** 1- OSI 7-layer model: functions and responsibilities of each layer 2- TCP/IP model comparison 3- Data encapsulation and decapsulation **Network Devices and Cabling** 1- Switches, routers, hubs, modems, access points 2- Transmission media: twisted pair, coaxial, fiber optics 3- Ethernet standards and cables **IP Addressing and Subnetting** 1- IPv4 and IPv6 addressing 2- Classes of IP addresses 3- Subnet masks, CIDR notation, and subnetting techniques

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	62	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب اسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	88	**Unstructured SWL (h/w)** الحمل الدراسي غير منتظم للطالب اسبوعياً	6
Total SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	150		

Module Evaluation

تقييم المادة الدراسية

		Time/ Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	4, 9	LO #1,2,…..,8,9
	Assignments	5	15% (10)	2,3,5,6,8,9,11,12,14,15	LO #1,2,….., 14,15
	Project/ Lab.				
	Midterm Exam	2hr	25% (10)	7,11	LO #1,2,……,10,11
Summative assessment					
	Final Exam	3hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Computer Networks Overview
Week 2	Data Communication
Week 3	Components of data communications system
Week 4	Physical Network Topology
Week 5	Categories of Networks
Week 6	Network Standards and OSI Model
Week 7	Network Criteria
Week 8	Layers in the OSI Model
Week 9	Summary of OSI Layers

Week 10	TCP/IP Protocol Suite and addressing
Week 11	Layers in the TCP/IP Protocol Suite Model
Week 12	Addressing
Week 13	Data and Analog Signals

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Routing and Switching Essentials, 6th Edition, CISCO Press	No
Recommended Texts		No
Websites	https://www.w3schools.com/html/default.asp	

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.