



Ministry of Higher Education and
Scientific Research - Iraq
Al-Mustaqbal University
College of Sciences
Cyber Security Science Department



MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	PRINCIPLES OF CYBER SECURITY		Module Delivery
Module Type	CORE		Theory Lecture Lab Tutorial Practical Seminar
Module Code	UOMU033014		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	Semester of Delivery	
Administering Department		College	
Module Leader	Muntather Saheb Khalaf	e-mail	muntather.saheb.khalaf@uomus.edu.iq
Module Leader's Acad. Title	Asst. Lecturer	Module Leader's Qualification	MSc
Module Tutor		e-mail	None
Peer Reviewer Name		e-mail	
Review Committee Approval		Version Number	1.0

Relation With Other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module		Semester	1

Co-requisites module	None	Semester	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none">1. To develop problem solving skills and understanding of Data security concepts and how this important for computer security.2. To understand the importance cryptography and cybersecurity concepts.3. This course deals with the basic concept of cryptography algorithms.4. This is the basic subject for cryptographic technique and cyber security methods.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<p>A- Knowledge and Understanding</p> <ol style="list-style-type: none">1: Qualifying students to explore the importance of computer security t and its applications2: Qualifying students to deal with the cryptography algorithm's (encryption and decryption) processes .3: Qualifying students to solve security issues of some encryption methods. <p>B- Subject-specific skills</p> <ol style="list-style-type: none">1: Give the means to students for linking encryption algorithms .2: Enable students to understand the mathematical theories of advanced cryptographic methods		
Indicative Contents المحتويات الإرشادية	<ol style="list-style-type: none">1: Clarify some computer security concepts.2: Clarify the importance information security and cyber security.		
Learning and Teaching Strategies استراتيجيات التعلم والتعليم			
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students’ participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.		

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	44	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	2.9
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.7
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation

تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	5% (5)	5, 10	LO # A&B
	Assignments	2	10% (10)	2, 12	LO # A&B
	Projects / Lab.	0	0	Continuous	
	Report	1	5% (5)	13	LO # A&B
Summative assessment	Midterm Exam	2 hr	10% (10)	7	LO # A&B
	Final Exam	2hr	70% (70)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1	Introduction to Data security, Requirements for computer protection.
Week 2	Security mechanisms ,Authentication,Chain of Authority,Access control,Permissions-based access control.
Week 3	Understanding hacking(Vectors that hackers exploit
Week 4	Direct intrusion, Dial –up,Hacking techniques.
Week 5	Firewall (Definition,concepts and conditions)
Week 6	The components of cryptographic system ,Encryption algorithms.
Week 7	Traditional ciphers(transposition algorithms), columnar , fixed period.
Week 8	Traditional ciphers(substitution algorithms), keyword , additive
Week 9	Traditional ciphers(substitution algorithms), multiplication , affine).
Week 10	Traditional ciphers(substitution algorithms), vigenere , beaufort methods)

Week 11	Homophonic substitution cipher(Beal cipher, High Order Homophonic algorithms),
Week 12	Polygram ciphers (playfair method , hill cipher method).
Week 13	Cyber security definitions, The Importance of cyber security, the elements of cyber security
Week 14	Types of Cyber Threats.
Week 15	Challenges of Cyber Security
Week 16	Final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	Cryptography and Network Security, principles and practice, Global Edition – Eighth Edition, William Stallings, 2023.	Yes
Recommended Texts		No
Websites		

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
NB 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.				

