	Ministry of Higher Education and Scientific Research - Iraq University of Technology Computer Science department Computer & Cyber Security	

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	CYSP115		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	1	**Semester of Delivery**	1
Administering Department	Type Dept. Code	**College**	Type College Code
Module Leader	Prof.Dr.Hala Bahjat Abdul Wahab	**e-mail**	Hala.Bahjat.Abdulwahab@uotechnology.edu.iq
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	None
Peer Reviewer Name	Prof.Dr.Hala Bahjat Abdul Wahab	**e-mail**	Hala.Bahjat.Abdulwahab@uotechnology.edu.iq
Review Committee Approval	01/06/2023	**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	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	**A- Knowledge and Understanding** 1: Qualifying students to explore the importance of computer security t and its applications 2: Qualifying students to deal with the cryptography algorithm's (encryption and decryption) processes . 3: Qualifying students to solve security issues of some encryption methods. **B- Subject-specific skills** 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	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 الاسبوعي 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), columnmener , fixed prioed.

Week 8	Traditional ciphers(subsistuation algorithms), keyword , additive ز
Week 9	Traditional ciphers(subsistuation algorithms), multiplication , affine).
Week 10	Traditional ciphers(subsistuation algorithms), vigener , buefort 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.