



Ministry of Higher Education  
and Scientific Research  
Baghdad College of Economic Sciences  
University



## MODULE DESCRIPTOR FORM

### نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
<b>Module Title</b>	<b>PRINCIPLES OF CYBER SECURITY</b>	<b>Module Delivery</b>	
<b>Module Type</b>	CORE	<b>Theory</b> <b>Lecture</b> <b>Lab</b> <b>Tutorial</b> <b>Practical</b> <b>Seminar</b>	
<b>Module Code</b>	CYSP115		
<b>ECTS Credits</b>	4		
<b>SWL (hr/sem)</b>	100		
<b>Module Level</b>	1		
<b>Administering Department</b>		<b>College</b>	BCoESU
<b>Module Leader</b>	Omar Abdulrahman Mashi	<b>e-mail</b>	omarabdulrahman@baghdadcollege.edu.iq
<b>Module Leader's Acad. Title</b>	Assistant Lecturer	<b>Module Leader's Qualification</b>	MSc
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<b>Review Committee Approval</b>	01/11/2023	<b>Version Number</b>	1.0

<b>Relation With Other Modules</b> العلاقة مع المواد الدراسية الأخرى			
<b>Prerequisite module</b>		<b>Semester</b>	1
<b>Co-requisites module</b>	None	<b>Semester</b>	
<b>Module Aims, Learning Outcomes and Indicative Contents</b> أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
<b>Module Aims</b> أهداف المادة الدراسية	<ol style="list-style-type: none"> <li>1. To develop problem solving skills and understanding of Data security concepts and how this important for computer security.</li> <li>2. To understand the importance cryptography and cybersecurity concepts.</li> <li>3. This course deals with the basic concept of cryptography algorithms.</li> <li>4. This is the basic subject for cryptographic technique and cyber security methods.</li> </ol>		
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<p><b>A- Knowledge and Understanding</b></p> <ol style="list-style-type: none"> <li>1: Qualifying students to explore the importance of computer security t and its applications</li> <li>2: Qualifying students to deal with the cryptography algorithm's (encryption and decryption) processes .</li> <li>3: Qualifying students to solve security issues of some encryption methods.</li> </ol> <p><b>B- Subject-specific skills</b></p> <ol style="list-style-type: none"> <li>1: Give the means to students for linking encryption algorithms .</li> <li>2: Enable students to understand the mathematical theories of advanced cryptographic methods</li> </ol>		
<b>Indicative Contents</b> المحتويات الإرشادية	<ol style="list-style-type: none"> <li>1: Clarify some computer security concepts.</li> <li>2: Clarify the importance information security and cyber security.</li> </ol>		
<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم			
<b>Strategies</b>	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.
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<b>Student Workload (SWL)</b> الحمل الدراسي للطالب			
<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	44	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعياً	2.9
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	56	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعياً	3.7
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	100		

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

<b>Delivery Plan (Weekly Syllabus)</b> المنهاج الأسبوعي النظري	
	<b>Material Covered</b>
<b>Week 1</b>	Introduction to Data security, Requirements for computer protection.
<b>Week 2</b>	Security mechanisms ,Authentication,Chain of Authority,Access control,Permissions-based access control.
<b>Week 3</b>	Understanding hacking( Vectors that hackers exploit
<b>Week 4</b>	Direct intrusion, Dial –up,Hacking techniques.
<b>Week 5</b>	Firewall (Definition,concepts and conditions)
<b>Week 6</b>	The components of cryptographic system ,Encryption algorithms.
<b>Week 7</b>	Traditional ciphers( transposition algorithms ), columnner , fixed priod.

<b>Week 8</b>	Traditional ciphers( subsistuation algorithms), keyword , additive
<b>Week 9</b>	Traditional ciphers( subsistuation algorithms), multiplication , affine).
<b>Week 10</b>	Traditional ciphers( subsistuation algorithms), vigener , buefort methods)
<b>Week 11</b>	Homophonic substitution cipher( Beal cipher, High Order Homophonic algorithms),
<b>Week 12</b>	Polygram ciphers (playfair method , hill cipher method).
<b>Week 13</b>	Cyber security definitions, The Importance of cyber security, the elements of cyber security
<b>Week 14</b>	Types of Cyber Threats.
<b>Week 15</b>	Challenges of Cyber Security
<b>Week 16</b>	<b>Final Exam</b>

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

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

**APPENDIX:**

**GRADING SCHEME**

## مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
<b>Success Group (50 - 100)</b>	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
<b>Fail Group (0 - 49)</b>	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.

