MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	**Computer Organization**			**Module Delivery**	
Module Type	**Core**			☒ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**Cys1105**				
ECTS Credits	5				
SWL (hr/sem)	**125**				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Cybersecurity		**College**	College of Computer Science & Information Technology	
Module Leader	Maky H.Abdulraheem		**e-mail**	maky.h@uowa.edu.iq	
Module Leader's Acad. Title	Lecturer		**Module Leader's Qualification**	Dr.	
Module Tutor	Maky H.Abdulraheem		**e-mail**	maky.h@uowa.edu.iq	
Peer Reviewer Name	Dr. Ali Kareem		**e-mail**	alialmujab@uowa.edu.iq	
Scientific Committee Approval Date	24/12/2025		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	

Department Head Approval **Dean of the College Approval**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	1. Equip students with a fundamental understanding of different computer types, including their structure and hardware components. 2. Foster an understanding of the functionality and operation of various input/output devices. 3. Provide in-depth knowledge about computer memory structures, including ROM, RAM, virtual memory, and cache memory. 4. Facilitate understanding of various storage options, their properties, and disk partitioning techniques. 5. Impart a comprehensive understanding of operating systems, their types, functionalities, and history.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Identify and distinguish between different types of computers and their associated hardware components. 2. Understand and describe the functionality of various input/output devices. 3. Demonstrate knowledge about different memory types, their functions, and hierarchy. 4. Understand and explain various data storage options, including HDDs, SSDs, and the concept of disk partitioning. 5. Analyze and compare various operating systems, describing their functions, types, and historical developments.
Indicative Contents المحتويات الإرشادية	1. Introduction to Computers: Definitions and types of computers, including supercomputers, server computers, workstation computers, personal computers, and microcontrollers. 2. Computer Hardware: Detailed analysis of hardware components such as input/output units, memory units, CPUs, motherboards, expansion cards, and power supply units. 3. Input Devices: In-depth study of devices like keyboards, mice, scanners, bar-code and QR code scanners, and speech recognition technology. 4. Output Devices: Exploration of devices such as speakers, printers (laser and inkjet), and monitors, including resolution, color depth, and refresh rates. 5. Memory: Examination of ROM, RAM, virtual memory, CPU cache, and the hierarchy of memory. 6. Storage: Detailed look at HDDs, SSDs, disk partitioning techniques, file systems, and related tasks. 7. Operating Systems: Study of the functions and types of operating systems, with examples and history of UNIX, MacOS, Linux, and Microsoft Windows.

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1. Lectures: Core concepts and principles will be taught through lectures, providing students with a foundational understanding of the subject matter. 2.Hands-On Labs: Practical skills will be developed through lab sessions, where students can apply theoretical knowledge in a practical context. 3.Group Projects: Students will work on group projects to foster teamwork and collaboration skills. This also allows for the application of knowledge in a practical, real-world context. 4.Independent Study: Students will be encouraged to engage in independent study to deepen their understanding of the topics covered. This could involve reading recommended texts, researching online resources, or practicing skills. 5.Discussions and Seminars: Regular discussions and seminars will be held to foster a deeper understanding of the material, encourage critical thinking, and facilitate the exchange of ideas. 6.Assessments: Regular assessments will be conducted to gauge students' understanding of the material, provide feedback, and track progress. 7. Guest Lectures: Guest lectures from industry professionals or academics could be arranged to provide different perspectives and insights into the subject matter. 8. Online Learning Resources: Students will be encouraged to utilize online resources, such as video tutorials, online courses, and forums, to supplement their learning.

Student Workload (SWL) الحمل الدراسي للطالب محسوب لـ ١٥ أسبوعا			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/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**	5	10% (10)	7,12	1 to 3
	Assignments	2	5% (5)	11	2,4
	Lab.	10	15% (15)	1-10	All
	Projects / Pr.	1	5% (5)	14	All
	Seminar	2	5% (5)	15	2,3
Summative assessment	**Midterm Exam**	2hr	10% (10)	7	
	Final Exam	3hr	50% (50)	17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Computers: What is a Computer, Types of Computers (Supercomputer, Server Computer, Workstation Computer, Personal Computer or PC, Microcontroller)
Week 2	Introduction to Computer Hardware (Input Unit and Output Unit (I/O), Memory Unit, CPU, Motherboard)
Week 3	More on Computer Hardware (Expansion Cards, Power Supply)
Week 4	Input Devices (Keyboard, Pointing Devices including Mouse, Trackball, Touchpad/Pointing Stick, Touch Screen, Stylus)
Week 5	More Input Devices (Scanners, Bar-code and QR Code Scanners, Microphone, Speech Recognition)
Week 6	Output Devices (Sound and Speakers, Printers including Laser and Inkjet)
Week 7	**Mid-term exam**
Week 8	More on Output Devices (Monitors, including an understanding of Resolution, Colour Depth, Refresh Rate, Difference between CRT, LCD, OLED)
Week 9	Memory (ROM, RAM, Virtual Memory, CPU Cache (Cache Memory), Memory Hierarchy)
Week 10	Storage (Hard Disk Drive (HDD), HDD Geometry, HDD Logical Blocks)
Week 11	More on Storage (Solid State Disk (SSD), SSD Controller, Disk Partitioning including MBR Partitioning and GPT, File Systems and Typical Tasks for File Systems)
Week 12	Introduction to Operating Systems, Functions of OS, OS Types (Batch, Single-Tasking and Multi-Tasking, Single- and Multi-User, Real Time OS, Distributed Operating System, Mobile OS)
Week 13	More on Operating Systems (OS Examples and History: UNIX and UNIX-like Operating Systems, BSD and its Descendants, MacOS, Linux Family)
Week 14	More on Operating Systems (Linux , Mac OS)
Week 15	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Introduction to computer architecture and organization.
Week 2	Understand BIOS' role in booting the laptop and finding out the laptop model number.
Week 3	Explore how to change the boot device.
Week 4	Explore the importance of having a healthy chair and desk to work on a laptop or a PC.
Week 5	Explore the importance of learning to type correctly.

Week 6	Introduction to computer components (CPU, Motherboard, RAM, HDD, Power supply, Case, Graphic card, Sound card, monitor, keyboard, mouse, speaker).
Week 7	Have practical experience with assembling and disassembling PC components.
Week 8	Explore Windows sandbox feature.
Week 9	Explore Oracle virtual box and Hyper-V.
Week 10	Download Windows ISO file and create a bootable flash disk using Rufus.
Week 11	Explore computer management and local users and groups.
Week 12	Explore Task scheduler, Event viewer, Services, Disk management, and Device manager.
Week 13	Learn about Windows users and groups and file permissions.
Week 14	Explore Task manager and startup programs.
Week 15	Explore disk encryption.

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Computer Organization and Architecture Designing for Performance, Eleventh Edition	No
Recommended Texts	"Computer Organization and Architecture" by William Stallings	No
Websites	https://www.tutorialspoint.com/basics_of_computer_science/index.htm	

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.