

# MODULE DESCRIPTION FORM

Module Information				
Module Title	Computer Organization			Module Delivery
Module Type	Core			<input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Practical
Module Code	IT103			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level		UG1	Semester of Delivery	1
Administering Department		Information Technology	College	College of Science
Module Leader	Makki Hussein Abdel Rahim		e-mail	<a href="mailto:maky.h@uowa.edu.iq">maky.h@uowa.edu.iq</a>
Module Leader's Acad. Title		Lecturer	Module Leader's Qualification	PhD
Module Tutor	Makki Hussein Abdel Rahim		e-mail	<a href="mailto:maky.h@uowa.edu.iq">maky.h@uowa.edu.iq</a>
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Scientific Committee Approval Date		2025-12-20	Version Number	1.0

Relation with other Modules					
Prerequisite module	-			Semester	-
Co-requisites module	-			Semester	-

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م.د. سعاد حسين نور  
2025/2/2025



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Department Head Approval

Dean of the College Approval

Module Aims, Learning Outcomes and Indicative Contents	
<b>Module Objectives</b>	<ol style="list-style-type: none"> <li>1. Equip students with a fundamental understanding of different computer types, including their structure and hardware components.</li> <li>2. Foster an understanding of the functionality and operation of various input/output devices.</li> <li>3. Provide in-depth knowledge about computer memory structures, including ROM, RAM, virtual memory, and cache memory.</li> <li>4. Facilitate understanding of various storage options, their properties, and disk partitioning techniques.</li> <li>5. Impart a comprehensive understanding of operating systems, their types, functionalities, and history.</li> </ol>
<b>Module Learning Outcomes</b>	<ol style="list-style-type: none"> <li>1. Identify and distinguish between different types of computers and their associated hardware components.</li> <li>2. Understand and describe the functionality of various input/output devices.</li> <li>3. Demonstrate knowledge about different memory types, their functions, and hierarchy.</li> <li>4. Understand and explain various data storage options, including HDDs, SSDs, and the concept of disk partitioning.</li> <li>5. Analyze and compare various operating systems, describing their functions, types, and historical developments.</li> </ol>
<b>Indicative Contents</b>	<ol style="list-style-type: none"> <li>1. Introduction to Computers: Definitions and types of computers, including supercomputers, server computers, workstation computers, personal computers, and microcontrollers.</li> <li>2. Computer Hardware: Detailed analysis of hardware components such as input/output units, memory units, CPUs, motherboards, expansion cards, and power supply units.</li> <li>3. Input Devices: In-depth study of devices like keyboards, mice, scanners, barcode and QR code scanners, and speech recognition technology.</li> <li>4. Output Devices: Exploration of devices such as speakers, printers (laser and inkjet), and monitors, including resolution, color depth, and refresh rates.</li> <li>5. Memory: Examination of ROM, RAM, virtual memory, CPU cache, and the hierarchy of memory.</li> <li>6. Storage: Detailed look at HDDs, SSDs, disk partitioning techniques, file systems, and related tasks.</li> <li>7. Operating Systems: Study of the functions and types of operating systems, with examples and history of UNIX, MacOS, Linux, and Microsoft Windows.</li> </ol>

Learning and Teaching Strategies	
Strategies	The learning and teaching strategies for studying the database subject in an IT department involve a balanced approach of theoretical understanding and practical application. Lectures, interactive discussions, and case studies provide the necessary theoretical foundation. Practical exercises, group work, and projects enable hands-on experience with database management systems. Workshops, demos, and industry examples offer real-world insights. Online resources, assessments, and feedback aid in reinforcing learning. Virtual labs and continuous learning emphasize practical skills development and staying updated with industry trends. These strategies ensure a comprehensive understanding of databases and their relevance in the IT field.

Student Workload (SWL)			
Structured SWL (h/sem)	60	Structured SWL (h/w)	5
Unstructured SWL (h/sem)	87	Unstructured SWL (h/w)	6
Total SWL (h/sem)	<b>147 + 3 (Final Exam) = 150</b>		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	10% (10)	5, 10	1,2,3,4
	Assignments	4	10% (10)	3,5,9,11	3-12
	Report	4	10% (10)	2,4,6,8	1,2,3,4,5
	Lab	10	10% (10)	All Weeks	3-12
Summative assessment	Midterm Exam	2hr	10% (10)	7	
	Final Exam	3hr	50% (50)	16	
Total assessment		100% (100 Marks)			

## Delivery Plan (Weekly Syllabus)

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

## Delivery Plan (Weekly Lab. Syllabus)

	<b>Material Covered</b>
<b>Week 1</b>	Introduction to computer architecture and organization.
<b>Week 2</b>	Understand BIOS' role in booting the laptop and finding out the laptop model number.
<b>Week 3</b>	Explore how to change the boot device.
<b>Week 4</b>	Explore the importance of having a healthy chair and desk to work on a laptop or a PC
<b>Week 5</b>	Explore the importance of learning to type correctly.
<b>Week 6</b>	Introduction to computer components (CPU, Motherboard, RAM, HDD, Power supply, Case, Graphic card, Sound card, monitor, keyboard, mouse, speaker).
<b>Week 7</b>	Have practical experience with assembling and disassembling PC components.
<b>Week 8</b>	Explore Windows sandbox feature.
<b>Week 9</b>	Explore Oracle virtual box and Hyper-V.
<b>Week 10</b>	Download Windows ISO file and create a bootable flash disk using Rufus.

<b>Week 11</b>	Explore computer management and local users and groups.
<b>Week 12</b>	Explore Task scheduler, Event viewer, Services, Disk management, and Device manager.
<b>Week 13</b>	Learn about Windows users and groups and file permissions.
<b>Week 14</b>	Explore Task manager and startup programs.
<b>Week 15</b>	Explore disk encryption

Learning and Teaching Resources		
	Text	Available in the Library?
<b>Required Texts</b>		No
<b>Recommended Texts</b>	"Computer Organization and Architecture" by William Stallings	No
<b>Websites</b>	<a href="https://www.tutorialspoint.com/basics_of_computer_science/index.htm">https://www.tutorialspoint.com/basics_of_computer_science/index.htm</a>	

Grading Scheme				
Group	Grade	Marks	Marks %	Definition
<b>Success Group (50 - 100)</b>	<b>A - Excellent</b>	Excellent	90 - 100	Outstanding Performance
	<b>B - Very Good</b>	Very Good	80 - 89	Above average with some errors
	<b>C - Good</b>	Good	70 - 79	Sound work with notable errors
	<b>D - Satisfactory</b>	Fair / Average	60 - 69	Fair but with major shortcomings
	<b>E - Sufficient</b>	Pass / Acceptable	50 - 59	Work meets minimum criteria
<b>Fail Group (0 - 49)</b>	<b>FX – Fail</b>	Fail (Pending)	(45-49)	More work required but credit awarded
	<b>F – Fail</b>	Fail	(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.