© Baghdad College of Economic Sciences University-Computer Engineering Techniques Department

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	Computer Organization and Applications			**Module Delivery**	
Module Type	core			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CET2103				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	2		**Semester of Delivery**	3	
Administering Department	CET		**College**	CET	
Module Leader	Nawres Mezher Okaish		**e-mail**	nawras.mizher2015@gmail.com	
Module Leader's Acad. Title	Assistant Lecturer		**Module Leader's Qualification**	MSc.	
Module Tutor	Nawres Mezher Okaish		**e-mail**	Nawres Mezher Okaish	
Peer Reviewer Name	Dr. Adnan Mohammed Ali		**e-mail**	dnan70816@gmail.com	
Scientific Committee Approval Date	16/09/2024		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
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. Understand the basic components and organization of a computer system. 2. Explain the function and operation of the CPU, memory, and I/O devices. 3. Analyze and evaluate different computer architectures and their trade-offs. 4. Design and implement basic computer systems using appropriate hardware and software components. 5. Demonstrate an understanding of the relationship between computer organization and computer performance. 6. Apply knowledge of computer organization principles to solve real-world computing problems. 7. To develop essential skills in creating, saving, and opening documents in Microsoft Word, including formatting text and paragraphs and working with styles and themes. 8. To explore advanced features in Microsoft Word, such as page layout options, working with headers, footers, and page numbers, and incorporating tables, images, and objects. 9. To introduce spreadsheets and worksheets in Microsoft Excel, and develop students' skills in data entry, manipulation, and basic formulas and functions. 10. To delve into advanced Microsoft Excel features, including working with ranges and cells, sorting and filtering data, and creating charts and graphs. 11. To guide students in creating and editing slides in Microsoft PowerPoint, applying themes and templates, and adding text, images, and multimedia elements. 12. To explore advanced PowerPoint features, such as slide transitions, animations, using SmartArt and shapes, and utilizing presenter tools and slide show options.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Understand the basic components and organization of a computer system. 2. Explain the function and operation of the CPU, memory, and I/O devices. 3. Analyze and evaluate different computer architectures and their trade-offs. 4. Design and implement basic computer systems using appropriate hardware and software components. 5. Demonstrate an understanding of the relationship between computer organization and computer performance. 6. Apply knowledge of computer organization principles to solve real-world computing problems.

	7. demonstrate the ability to evaluate and compare different computer organization techniques, such as memory management strategies and caching optimizations, to improve system performance. 8. Understand computer architectures, including their performance characteristics, and understand the impact of design choices on computer performance 9. Develop practical skills in using simulation tools, emulators, and programming languages to design, implement, and test computer organization concepts. 10. Analyze and identify performance bottlenecks in computer systems and propose appropriate optimizations to improve system efficiency. 11. Understand the principles and challenges of memory management, including memory allocation, deallocation, and garbage collection. 12. Apply knowledge of cache memory organization and mapping techniques to analyze cache behavior and optimize cache utilization. 13. Demonstrate a solid understanding of Microsoft Word, Excel, and PowerPoint, including their key features, user interfaces, and common functions. 14. Create, format, and manage documents effectively in Microsoft Word, utilizing styles, themes, page layout options, headers, footers, tables, images, and objects. 15. Utilize Microsoft Excel for data entry, manipulation, basic calculations using formulas and functions, sorting and filtering data, and creating charts and graphs. 16. Develop proficiency in creating and editing slides, applying themes, templates, and multimedia elements, and utilizing advanced features in Microsoft PowerPoint.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Introduction to Computer Organization Basic computer architecture and components Von Neumann architecture Instruction execution cycle Memory Organization Memory hierarchy and cache memory Virtual memory and paging techniques Memory management and allocation strategies PU Organization and Instruction Set Architecture (ISA) CPU components: ALU, registers, control unit Instruction formats and addressing modes

	Input/Output (I/O) Organization I/O devices and interfaces Polling, interrupts, and DMA I/O communication and bus architectures

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	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 موزع على (15) اسبوع			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4.26
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.06
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**	2	10% (10)	5, 10	LO #1-4 , LO #4-9
	Assignments	2	10% (10)	4, 12	LO # 1-3, LO #4-11
	Projects / Lab.	1	10% (10)	Continuous	ALL
	Report	1	10% (10)	13	LO # 1-11
Summative assessment	**Midterm Exam**	2hr	10% (10)	9	LO # 1-8
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Computer system Organization, Main parts of computer system, Organization and architecture
Week 2	Von Neumann architecture and its components
Week 3	Instruction Set Design in Von Neuman
Week 4	Overview of instruction execution cycle
Week 5	Introduction to Memory unit, Memory Organization & classification
Week 6	Prime Memory :RAM ,ROM ,EPROM ,EEPROM& Storage memory :,Hard disk ,CD ROM
Week 7	**Midterm Exam**
Week 8	Concepts of Microprocessors &Microcomputer & Microcontroller .Organization of MP base system
Week 9	Machine language & Assembly language and addressing modes
Week 10	Input/Output (I/O) Organization
Week 11	Introduction to Microsoft Office Suite • Overview of Microsoft Word, Excel, and PowerPoint • Understanding the user interface and common features
Week 12	Microsoft Word Basics • Creating, saving, and opening documents • Formatting text and paragraphs • Working with styles and themes
Week 13	Advanced Microsoft Word Features • Page layout and formatting options • Working with headers, footers, and page numbers

	• Using tables, images, and other objects
Week 14	Microsoft PowerPoint Basics • Creating and editing slides • Applying themes and templates • Adding text, images, and multimedia elements
Week 15	Advanced Microsoft PowerPoint Features • Slide transitions and animations • Using SmartArt and shapes • Presenter tools and slide show options

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Lab 1: Introduction to Computer Organization ,Familiarization with the lab environment and tools
Week 2	Lab 2: hardware components: CPU, memory, and I/O devices
Week 3	Lab 3: Computer assembly and disassembly
Week 4	Lab 4: Introduction to PC Operating Systems
Week 5	Lab 5: Installation and setup of the chosen PC operating system
Week 6	Lab 6: Assembly Language Programming
Week 7	Lab 7: Writing and executing simple assembly language programs
Week 8	Introduction to Lab Environment and Office Suite - Lab setup and software installation. Overview of Microsoft Office Suite tools and features.
Week 9	Microsoft Word Lab - Creating, editing, and formatting documents. Inserting and formatting images and tables.
Week 10	Microsoft Excel Lab - Creating spreadsheets and entering data. Formulas and functions for calculations.
Week 11	Microsoft PowerPoint Lab - Creating, editing, and designing slides. Adding multimedia elements and animations.
Week 12	Word Processing Techniques Lab - Mail merge and document collaboration exercises. Creating professional documents with advanced formatting.
Week 13	Data Analysis Lab with Excel - Advanced formula and function exercises. Sorting, filtering, and analyzing data.
Week 14	Presentation Design Lab with PowerPoint - Applying design principles to create visually appealing slides. Adding interactive elements and customizing slide layouts.

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	"Computer Organization and Design" by David A. Patterson and John L. Hennessy	Yes
Recommended Texts	Structured Computer Organization" by Andrew S. Tanenbaum	No
Websites	https://www.tutorialspoint.com/computer_organization/index.asp	

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.