



الجامعة العربية المفتوحة
Arab Open University

Module Specification

1. Factual information			
Module title	TM103: Computer Organization and Architecture	Level	1
Module tutor	TBA	Credit value	15
Module type	Taught	Notional learning hours	4

2. Rationale for the module and its links with other modules
This module offers a clear and comprehensive survey about computer organization and architecture. It introduces the inner workings of a modern digital computer through an integrated presentation of fundamental concepts and principles.

3. Aims of the module
To emphasize on the concept of computer organization. To emphasize on the concept computer architecture. To comprehend the different core concepts behind the hardware layer of a computer system. To recognize the mathematical concepts of the low level computer structure (circuits and gates). To know the processor's instruction sets architecture and implementation. To recognize the memory organization concept and methods.

4. Pre-requisite modules or specified entry requirements
EL111 is a mandatory Pre-requisite for TM103 Module.

5. Intended learning outcomes	
A. Knowledge and understanding	Learning and teaching strategy
<p>The module provides student with an understanding of:</p> <ul style="list-style-type: none"> A1. Historical developments of computers. A2. The Von-Neumann Model. A3. Data representation and arithmetic in Computer Systems. A4. Boolean Algebra and Digital Logic. A5. Assembly language of an intuitive architecture (MARIE). A6. Memory organization and addressing modes. A7. Cache memory mapping Schemes. 	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • Quiz and Take Home Project • Module learning text book and support material
B. Cognitive skills	Learning and teaching strategy
<p><u>To be able to</u></p> <ul style="list-style-type: none"> B1. Identify the different parts of any computer system and understand their roles. B2. Understand the instruction set of any modern computer system. B3. Evaluate the performance of modern computer systems. 	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • Quiz and Take Home Project • Module learning booklets and support material
C. Practical and professional skills	Learning and teaching strategy
<p><u>To be able to</u></p> <ul style="list-style-type: none"> C1. Have an awareness of the process of designing, writing and testing MARIE assembly programs. C2. Use low level programming skills appropriate to a task. C3. Ability to use the MARIE and data path simulator software. 	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • Project • Module learning booklets and support material

D Key transferable skills	Learning and teaching strategy
<p><u>To be able to</u></p> <p>D1. Interact effectively within a group using electronic conferencing techniques.</p> <p>D2. Contribute to discussions on a conference.</p> <p>D3. Improve own learning and performance.</p> <p>D4. Communicate effectively about testing strategies, design and low level codes.</p> <p>D5. Use electronic media (the web and electronic conferencing) for information retrieval and communication.</p>	<ul style="list-style-type: none"> • 25% face-to-face tutorial sessions • Quiz and Take Home Project • Module learning booklets and support material

6. Indicative content.
<p>CHP1.: Introduction to Computer Organization & Architecture</p> <p>CHP2 : Data Representation in Computer Systems</p> <p>CHP3 : Boolean Algebra and Digital Logic</p> <p>CHP4 : MARIE - An Introduction to a Simple Computer</p> <p>CHP5 : A Closer Look at Instruction Set Architectures (short summary)</p> <p>CHP6 : Memory</p>

7. Assessment strategy, assessment methods and their relative weightings
<p>Quiz: 10%</p> <p>Project: 10%</p> <p>MTA: 30%</p> <p>Exam: 50%</p>

8. Mapping of assessment tasks to learning outcomes																		
Assessment tasks	A1	A2	A3	A4	A5	A6	A7	B1	B2	B3	C1	C2	C3	D1	D2	D3	D4	D5
Quiz	✓	✓	✓	✓	✓													
Project								✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MTA	✓	✓	✓	✓				✓		✓						✓	✓	
Exam	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓				✓	✓	

9. Teaching staff associated with the module	
Tutor's name and contact details	Contact hours
TBA	

10. Key reading list				
Author	Year	Title	Publisher	Location
Linda Null & Julia Lobur	2015 4 th Edition	The essentials of computer organization and architecture	Jones and Bartlett Publishers	UK

11. Other indicative text (e.g. websites)
https://lms.arabou.edu.kw/ http://computerscience.jbpub.com/ecoa/2e/student_resources.cfm