

## COURSE SPECIFICATION

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This course introduces the programming, architecture and interfacing of the Intel microprocessors for the last year students who had previous knowledge in both computer hardware and software.

1. Teaching Institution	Baghdad University / Al Khwarizmi College of engineering
2. University Department/Centre	Information and Communication Eng. Dept
3. Course title/code	<b>Microprocessor</b>
4. Program(s) to which it contributes	<ul style="list-style-type: none"><li>• <i>understand</i> the main components and working principals of the Intel microprocessor</li><li>• <i>program</i> and <i>debug</i> in assembly language</li><li>• <i>understand</i> the basic computer architecture</li><li>• <i>understand</i> the memory organization and memory interfacing</li><li>• <i>perform</i> input/output device programming in assembly</li><li>• <i>understand</i> the hardware and software interrupts and their applications.</li><li>• <i>understand</i> the properties and interfacing of the parallel and serial ports</li></ul>
5. Modes of Attendance offered	Full time
6. Semester/Year	Course
7. Number of hours tuition (total)	<b>3 hours (2 theoretical / 1 tutorial) 45</b>

8. Date of production/revision of this specification	Sep 2023
9. Aims of the Course	
The course aim to give the student the following subjects:	
To provide a theoretical & practical introduction to microcontrollers and microprocessors, assembly language programming techniques, design of hardware interfacing circuit, microcontroller and microprocessor system design .considerations	

10. Learning Outcomes, Teaching ,Learning and Assessment Method
A- Knowledge and Understanding A1. Types of Microprocessor A2. Embedded systems with microprocessor A3. Requirement for choosing a microprocessor
B. Subject-specific skills B1. Interfacing design of microprocessor B2. Memory interfacing B3. Assembly language
Teaching and Learning Methods
Class room lectures, Lab , seminars, reaction and documentations
Assessment methods
Quizzes 10% Midterm 20% Seminars 10% Final 40%
C. Thinking Skills C1. Software design C2. Hardware design C3. Embedded system
Teaching and Learning Methods
Classroom assignments and homework, Individual projects and groups, Practical activities

**D. General and Transferable Skills (other skills relevant to employability and personal development)**

D1. Learn programming tools

D2. Learn analysis of systems with aid of computer

D3. Use computer for visualization

11. Course Structure					
Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3	Practical knowledge	Introduction to MP	Formal lecture	
2	3	Practical knowledge	Microprocessor architecture	Formal lecture	
3	3	Programming experience	Microprocessor programming	Formal lecture	
4	3	Programming experience	Microprocessor registers	Formal lecture	
5	3	Programming experience	Addressing modes	Formal lecture	
6	3	Programming experience	Addressing modes	Formal lecture	
7	3	Programming experience	Data movement instructions	Formal lecture	
8	3	Programming experience	Data movement instructions	Formal lecture	
9	3	Programming experience	Arithmetic and logic instructions	Formal lecture	
10	3	Programming experience	Arithmetic and logic instructions	Formal lecture	
11	3	Programming experience	Program control instructions	Formal lecture	
12	3	Programming experience	Program control instructions	Formal lecture	

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13	3	Practical knowledge	8086 hardware specifications	Formal lecture	
14	3	Practical knowledge	8086 hardware specifications	Formal lecture	
15	3	Practical knowledge	Memory interfacing	Formal lecture	

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Barry B. Brey, The Intel Microprocessors, Prentice Hall Press, Upper Saddle River, NJ, 2008
Special requirements (include for example workshops, periodicals, IT software, websites)	Logic circuit design

Community-based facilities (include for example, guest Lectures , internship , field studies)	
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13. Admissions	
Pre-requisites	
Minimum number of students	
Maximum number of students	30

