Ministry of Higher Education and Scientific Research

Supervision and Scientific Evaluation Body

Quality Assurance and Academic Accreditation Office

Course Description Sample

Subject: Advance Computer Technologies

1. Educational Institution	Shatt Al Arab University
2. Department / Center	Computer Techniques Engineering.
3. Course Title /Code	Advance Computer Technologies/ ACT
4. Lecturer Name	MSc. Fatima Tariq Hussein
5. Type of Teaching	Theary – Lab – Tutorial
6. Academic Year /Term	2024/2025
7. Total No. of Teaching Hours	120
8. Date of Preparing this Course Description	10/10/2024

9. **Course Objectives**

• Study the advanced internal architecture of the 80386 microprocessor.
• To understand the parts that make up the microprocessor architecture.
• Study the addressing methods.
• To explain the cache memory inside the computer.
• Study the architecture and features of some designs of modern generations of microprocessors with multiple cores.
• Study the architecture and features of some designs of modern generations of microprocessors with parallel processing capability.
• To understand the independent and non-independent sources

10. **Course Output, Methodology and Evaluation**

(A) **Cognitive Objectives**

1. Know the structure of the 80386 microprocessor.

2. Explain the structure of the 80386 microprocessor.

3. Explain the calculation of the address using the segment method.

4. Explain the calculation of the address using the page method.

5. Know the changes that occurred in the 386 processor.

6. Understand the cache memory.

7. Know the structure of modern processors and the additions that occurred in them.

(B) **Skill Objectives Related to the Program**:

1. Identify the registers inside the microprocessor structure.
2. Use a microprocessor specific program.
3. Properties specific to each part of the registers.
4. How to write programs using Assembly Language.
5. How to use the instructions (MOV, ADD, XGHG, POP, PUSH, STACK, LOOP, INC….) between the microprocessor registers.

Methods of Teaching and Learning

1- Explanation and clarification (lecture).
2- Method of presenting selected models of illustrative questions and their solutions.
3- Lecture in which students participate in preparing.
4- Method of self-learning (assigning students to complete learning some skills after giving them their basics).

Methods of Evaluation

Number	calendar element	degree

(C) **Sentimental and Value Objectives**

1- Observation and perception.
2- Analysis and interpretation.
3- Conclusion and evaluation.
4- Numbers and evaluation.
5- Testing students' attention through sudden questions during the explanation.
6- Breaking the stereotypical aspect of the lecture with different methods to transform the student from the role of passive recipient to the role of active participant

Methods of Teaching and Learning

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Methods of Evaluation

1- Regular and surprise theoretical tests.
2- Practical assignments and tests.
3- Reports and studies (non-mandatory).

D) **General and Qualitative Skills (other skills related to the ability of employment and personal development)**

1- Developing the student's leadership skills. 2- Developing the student's mental fitness during the lecture by continuously directing questions. 3- Developing mathematical and design computational skills in the field of digital computer components. 4- Developing the student's language skills to increase the ability to express his ideas.

11. **Course Structure**

Week	No of Hours	Required Learning Output	Title of Subject	Teaching Method	Evaluation
1– 5	20	The structure of the microprocessor	Processor Structure 386	Lecture/Laboratory	Daily Participation/Tests
6– 9	16	Calculating the address using the method of sections	Segmentation method	Lecture/Laboratory	Daily Participation/Tests
10 – 13	16	Calculating the address using the method of pages	Paging method	Lecture/Laboratory	Daily Participation/Tests
14 – 17	16	Changes in the processor 386	Features in 386	Lecture/Laboratory	Daily Participation/Tests
18 – 23	24	Cache memory	Cache memory	Lecture/Laboratory	Daily Participation/Tests
24 – 30	28	The structure of modern processors and the additions made to them	Pentium proc., Pentium pro, Core proc.	Lecture/Laboratory	Daily Participation/Tests

12.**Infrastructure**

a. Textbooks	***The 80386, 80486 and Pentium Processor*** By: Walter A. Triebel
b. References	***The 80x86 IBM Pc and CompatibleComputers (Volumes I & II)*** By: Mohammed Ali Mazidi
c. Recommended books and periodicals (journals, reports, etc.)	***Intel Microprocessors*** By: Barry B. Brey
d. Electronic references, internet websites, etc	**Google**

13. **The Plan of Improving the Course**

Supporting and enhancing the lectures with the developments in the subject's specialization, which concern microprocessors and their modern uses in the fields of data processing.