Faculty of Computers and Information

Model (No 12)
Course Specification : Assembly Language (2016-2017)

University : Mansoura University
Faculty : Faculty of Computers and Information
Department : Computer Science

1- Course data :-

Code: CS214P	Course name: Assembly Language	Study year: Third

Specialization:
Computer Science

Teaching Hours:

Lecture:	Tutorial:	Practical:
13		13

Number of units:

2- Course aims :-

1. Understand the hardware of the personal computer.
2. Understand machine-language code and hexa-decimal format.
3. Understand the steps involved in assembling, linking, and executing a program.
4. Write programs in assembly language to handle the keyboard and screen, perform arithmetic, convert between ASCII and binary formats, perform table searches and sorts, and handle disk I/O.
5. Trace machine execution as an aid in program debugging.
6. Write your own macro instructions to facilitate faster coding.
7. Linking separately assembled programs into one executable program.

3- Intended learning outcomes of course (ILOS) :-

a- Knowledge and understanding

1. Essential facts, concepts, principles and theories relating to computing and information and computer applications as appropriate to the program of study.
2. Tools, practices and methodologies used in the specification, design, implementation and evaluation of computer software systems.
3. Understand the essential mathematics relevant to computer science.
4. Show a critical understanding of the principles of artificial intelligence, image, and pattern recognition.
5. Understand the fundamental topics in Computer Science, including hardware and software architectures, software engineering principles and methodologies, operating systems, compilers, parallel and distributed computing, systems and software tools.

b- Intellectual skills

1. Analyze computing problems and provide solutions related to the design and construction of computing systems.
2. Make ideas, proposals and designs using rational and reasoned arguments for presentation of computing systems.
3. Summarize the proposed solutions and their results.
4. Establish criteria, and verify solutions.
5. Identify a range of solutions and critically evaluate and justify proposed design solutions.

c- Professional and practical skills

1. Operate computing equipment, recognizing its logical and physical properties, capabilities and limitations.
2. Implement comprehensive computing knowledge and skills in projects and in deployment of computers to solve position practical problems.
3. Specify, design, and implement computer-based systems.
4. Evaluate systems in terms of general quality attributes and possible tradeoffs presented within the given problem.
5. Identify any risks or safety aspects that may be involved in the operation of computing equipment within a given context.
6. Deploy effectively the tools used for the construction and documentation of software, with particular emphasis on understanding the whole process involved in using computers to solve practical problems.

d- General and transferable skills

1. Demonstrate the ability to make use of a range of learning resources and to manage one's own learning.
2. Use an appropriate mix of tools and aids in preparing and presenting reports for a range of audiences, including management, technical, users, industry or the academic community.
3. Exhibit appropriate numeracy skills in understanding and presenting cases involving a quantitative dimension.
4. Show the use of general computing facilities.
5. Demonstrate an appreciation of the need to continue professional development in recognition of the requirement for life-long learning.

4- Course contents :-

No	Topics	Week	Basic knowledge	Intellectual skills	Professional skills	General skills
1	Fundamentals of PC Hardware and Software	1	a1, a5	b1, b2	c1, c5	d1,d3,d5
2	Fundamentals of PC Hardware and Software	2	a1, a5	b1,b2	c1, c5	d1,d3, d5
3	Instruction addressing and execution	3	a1, a5	b1, b2	c2, c3	d1,d3, d5
4	Examining computer memory and executing instructions	4	a3, a4	b1, b2, b3, b4, b5	c1, c6	d2,d3, d5
5	Examining computer memory and executing instructions	5	a3, a4	b1, b2, b3, b4, b5	c1, c6	d1, d2, d3, d4
6	Requirement for coding assembly language	6	a1, a2, a5	b1, b2, b5	c3, c4, c5, c6	d1, d2, d3, d4
7	Assembling, Linking, and Executing programs	7	a1, a2, a5	b1, b2, b5	c3, c4, c5, c6	d1, d2, d3, d4
8	Assembling, Linking, and Executing programs	8	a1, a2, a5	b1, b2, b5	c3, c4, c5, c6	d1, d2, d3, d4
9	Symbolic instructions and addressing	10	a1, a5	b3, b4, b5	c1, c2, c5	d1, d2, d3, d4
10	Symbolic instructions and addressing	11	a1, a5	b3, b4, b5	c1, c2, c5	d1, d2, d3, d4
11	Program logic and control	12	a1, a3, a5	b3, b4, b5	c1, c2, c3, c4, c5, c,6	d1, d2, d3, d4
12	Program logic and control	13	a1, a3, a5	b3, b4, b5	c1, c2, c3, c4, c5, c,6	d1, d2, d3, d4

5- Teaching and learning methods :-

S	Method	Basic knowledge	Intellectual skills	Professional skills	General skills
1	Lecture notes	a1-a5	b1-b5	c1-c6	d1-d5
2	Coding programs	a1-a5	b1-b5	c1-c6	d1-d5
3	Debugging tool	a1-a5	b1-b5	c1-c6	d1-d5
4	AE- TASM assembler	a1-a5	b1-b5	c1-c6	d1-d5
5	Emulator 8086	a1-a5	b1-b5	c1-c6	d1-d5

6- Teaching and learning methods of disables :-

1. Lectures

2. Practical Exercise
3. Videos

7- Activities and sources of teaching and learning :-

S	Activities and resources	Basic knowledge	Intellectual skills	Professional skills	General skills
1					

8- Student assessment :-

a- Student assessment methods

No	Method	Basic knowledge	Intellectual skills	Professional skills	General skills
1	Assignments	a1, a3, a5	b1, b5	c1, c2, c6	d1-d5
2	Lab coding programs	a2, a5	b1-b5	c1-c6	d1-d5
3	Lectures quiz	a1, a3, a5	b1, b5	c1, c2, c6	d1-d5
4	Solving book exercises	a1, a3, a5	b1, b5	c1, c2, c6	d1-d5

b- Assessment schedule

No	Method	Week
1		

c- Weighting of assessments

No	Method	Weight
1	Attendance (Lectures + Sections)	5%
2	Assignments	15%
3	Midterm	10%
4	Oral	10%
5	Final	60%
Total		100%

9- List of references

S	Item	Type
1	IBM PC Assembly Language and Programming, fifth edition, Peter Abel	Book
2	https://www.tutorialspoint.com/assembly_programming/	Web page tutorials

Coordinator(s): - Sara El-Sayed El-Metwally

Head of department: -

Assoc. Prof. Samir Elmougy