



Mansoura University

Faculty of Computers and Information Sciences



## Course Specifications of

### Fundamental of Computer Science – CS111P

**University:** Mansoura University

**Faculty:** Computer and Information Sciences

**Program on which the course is given:** Department of Computer Science- First year

**Department offering the course:** Department of Computer Science

**Academic year/ Level:** First Year

**Date of specification approval:**

#### A- Basic Information

**Title :** Fundamental of Computer Science      **Code :** CS111P

**Credit Hours :** 3      **Lecture :** 1      **Tutorial :**      **Practical :**

#### B- Professional Information

##### 1- Overall Aims of the Course This

course aims to:

- Formalizes students with the technology and the principles of computers (computer hardware and software).
- Allow students to study of computers and their architecture, languages, and applications, in all aspects, as well as the mathematical structures that relate to computers and computation.
- Allow students to learn a programming language or running a computer with little attention to the study of information and its uses.

## 2- Intended Learning Outcomes of the course (ILOs)

By completing this course successfully, the student will be able to:

### a- Knowledge and Understanding

- a1. Essential facts, concepts, principles and theories relating to computing and information and computer applications as appropriate to the program of study.
- a3. Tools, practices and methodologies used in the specification, design, implementation and evaluation of computer software systems.
- a7. Principles of generating tests which investigate the functionality of computer programs and computer systems and evaluating their results.
- a11. Requirements, practical constraints and computer-based systems..
- a16. Know and understand the principles and techniques of a number of application areas informed by the research directions of the subject, such as artificial intelligence, natural language processing, data mining, databases and computer graphics.
- a18. 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.
- a19. Select advanced topics to provide a deeper understanding of some aspects of the subject, such as hardware systems design, objectoriented analysis and design, and artificial intelligence, and parallel and concurrent computing

### b- Intellectual Skills

b2. Realize the concepts, principles, theories and practices behind computing and information as an academic discipline.

- b13. Identify attributes, components, relationships, patterns, main ideas, and errors.

### c- Professional and Practical Skills

- c1. Operate computing equipment, recognizing its logical and physical properties, capabilities and limitations.
- c2. Implement comprehensive computing knowledge and skills in projects and in deployment of computers to solve position practical problems.
- c4. Apply computing information retrieval skills in computing community environment and industry.

- c5 Develop a range of fundamental research skills, through the use of online resources, technical repositories and library-based material
- c11 Perform independent information acquisition and management, using the scientific literature and Web sources.
- c12 Prepare and present seminars to a professional standard.
- c21 Prepare technical reports, and a dissertation, to a professional standard.

**d- General and Transferable Skills**

- d1. Demonstrate the ability to make use of a range of learning resources and to manage one's own learning.
- d3 Show the use of information-retrieval.
- d4 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.
- d8 Demonstrate an appreciation of the need to continue professional development in recognition of the requirement for life-long learning.

**3- Contents**

No	Course Content	Lecture	Tutorial	Total
1	Introduction to the fundamental concepts of Computer Science and its Applications	2	2	4
2	Computer Generations	2	2	4
3	Computer Hardware	2	2	4
4	Introduction to Operating System	2	2	4
5	Application Programs	2	2	4
6	System Software	2	2	4
7	Number Systems	4	4	8
8	Algorithms (Representation,& operations)	2	2	4
9	Algorithms (Problem Solving)	2	2	4
10	MicroSoft Office	4	4	8
<b>Total Hours</b>		<b>24</b>	<b>24</b>	<b>48</b>

**4- Assessment Schedule**

Assessment Method	No.	Description	Week No.	Weight (%)
Assignment	1	Home work no. 1	3	10

Written Exams	2	Midterm Exam	7	10
Assignment	3	Home work no. 2	8	10
Oral Exam	4	Oral questions	10	10
Written Exams	5	Final Exam	14	60
<b>Total</b>				100

## **5- List of references**

### **5.1 Course Notes**

- Lecture handouts delivered to students at the end of each lecture. **5.2**

### **Essential Books (Text Books)**

- ITL Education Solutions Limited, "Introduction to Computer Science", pearson edition, second edition, 2011.
- SILBERSCHATZ A., GALVIN P.B. and GAGNE G., "OPERATING SYSTEM CONCEPTS ", Six edition, JOHN WILEY & SONS, INC, 2002.

**6- Facilities Required for Teaching and Learning -**  
Data show.

**Course Content/ILO Matrix**

<b>Course Content</b>	<b>a1</b>	<b>a3</b>	<b>a7</b>	<b>a11</b>	<b>a16</b>	<b>a18</b>	<b>a18</b>	<b>b2</b>	<b>b13</b>	<b>c1</b>	<b>c2</b>	<b>c4</b>	<b>c5</b>	<b>c11</b>	<b>c12</b>	<b>c21</b>	<b>d1</b>	<b>d3</b>	<b>d4</b>	<b>d5</b>
Introduction to the fundamental concepts of Computer Science and its Applications	•	•				•	•		•	•	•			•			•		•	•
Computer Generations and Hardware	•	•	•	•				•	•	•	•		•	•		•	•	•	•	
Introduction to Operating System	•		•	•	•	•			•			•	•		•	•	•			•
Application Programs and system software	•	•		•	•			•	•	•		•		•			•	•	•	•
Number Systems	•	•	•	•	•			•		•	•	•	•	•		•		•	•	
Introduction to Algorithms			•		•	•	•	•	•			•		•		•	•	•		

### Learning Method/ILO Matrix

Course Content	a1	a3	a7	a11	a16	a18	a18	b2	b13	c1	c2	c4	c5	c11	c12	c21	d1	d3	d4	d5
Lectures	•		•	•	•		•	•	•	•	•		•	•		•	•	•	•	•
Tutorials		•	•		•	•	•		•	•	•	•	•		•	•	•	•		

### Assessment Methods/ILO Matrix

Assessment	a1	a3	a7	a11	a16	a18	a18	b2	b13	c1	c2	c4	c5	c11	c12	c21	d1	d3	d4	d5
Assignment	•	•		•		•				•	•			•	•	•		•	•	•
Midterm Exam	•		•	•	•		•	•		•	•	•	•	•			•		•	
Oral exam		•		•	•			•		•	•		•	•			•	•		•
Final Exam	•	•	•	•	•	•	•	•	•			•		•		•	•	•		•

---

**Course Coordinator: Dr. Rasha Sakr**

**Dr. Mayada Tarek**

**Head of Department: Dr. Samir Elmogy Date:**

