



Faculty of  
Computers and  
Information

Course Specification : اختياري كلية – هندسة البرمجيات ٢

**University :** Mansoura University

**Faculty :** Faculty of Computers and Information

**Department :** Computer Science

### 1- Course data :-

Code: Course name: اختياري كلية – هندسة البرمجيات ٢ Study year: الثالثة علوم الحاسب

Specialization: 

- بكالوريوس الحاسبات  
المعلومات علوم الحاسب

Teaching Hours:

Lecture: 2 Tutorial: Practical: 3

Number of units: 8

### 2- Course aims :-

1. This course aims to teach students the fundamentals of programming

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

#### a- Knowledge and understanding

1. [a1] Essential facts, concepts, principles and theories relating to computing and information and computer applications as appropriate to the program of study.
2. [a3] Knowledge of the tools, practices and methodologies used in the specification, design, implementation and evaluation of computer software systems.
3. [a7] Principals of generating tests which investigate the functionality of computer programs and computer systems and evaluating their results.
4. [a11] Requirements, practical constraints and computer-based systems.

#### b- Intellectual skills

1. [b1] Analyze computing problems and provide solutions related to the design and construction of computing systems.
2. [b2] Realize the concepts, principles, theories and practices behind computing and information as an academic discipline.
3. [b3] Identify criteria to measure and interpret the appropriateness of a computer system for its current deployment and future evolution.
4. [b6] Evaluate the results of tests to investigate the functionality of computer systems.
5. [b8] Familiar with the professional, legal, moral and ethical issues relevant to the computing industry.
6. [b16] Establish criteria, and verify solutions.
7. [b17] Identify a range of solutions and critically evaluate and justify proposed design solutions.
8. [b18] Solve computer science problems with pressing commercial or industrial constraints.
9. [b19] Generate an innovative design to solve a problem containing a range of commercial and industrial constraints.

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**c- Professional and practical skills**

1. [c2] Implement comprehensive computing knowledge and skills in projects and in deployment of computers to solve position practical problems. [c3] Use appropriate programming languages, web-based systems and tools, design methodologies, and knowledge and database systems.
2. [c3] Deploy the equipment and tools used for the construction, maintenance and documentation of computer applications.
3. [c6] Design, implement, maintain, and manage software systems.
4. [c15] Specify, design, and implement computer-based systems.
5. [c20] 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.
6. [c21] Prepare technical reports, and a dissertation, to a professional standard.

**d- General and transferable skills**

1. [d1] Demonstrate the ability to make use of a range of learning resources and to manage one's own learning.
2. [d2] Demonstrate skills in group working, team management, time management and organizational skills.
3. [d3] Show the use of information-retrieval.
4. [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.
5. [d6] Reveal communication skills, public speaking and presentation skills, and delegation, writing skills, oral delivery, and effectively using various media for a variety of audiences.
6. [d8] 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
1	Introduction to software testing	1 <sup>st</sup> and 2 <sup>nd</sup>
2	Fundamentals of software testing	3 <sup>rd</sup> and 4 <sup>th</sup>
3	White box testing	5 <sup>th</sup> and 6 <sup>th</sup>
4	Black box testing	7 <sup>th</sup> and 8 <sup>th</sup>
5	Automation testing	9 <sup>th</sup>
6	Web site testing	10 <sup>th</sup>
7	Software quality assurance	11 <sup>th</sup> and 12 <sup>th</sup>
8	Quality management in organizations	13 <sup>th</sup>

**5- Teaching and learning methods :-**

No	Method
1	White Board
2	Data Show
3	Self Study Lessons

**6- Teaching and learning methods of disables :-**

1. audio lectures

**7- Activities and sources of teaching and learning :-**

S	Activities and resources
1	Book
2	Recommended Reference

## 8- Student assessment :-

### a- Student assessment methods

No	Method
1	Paper and computer based Quiz and Exams

### b- Assessment schedule

No	Method	Week
1	Quiz	3
2	Mid_term	6
3	Practical Exam	10
4	Oral Exam	11
5	FinalTerm Exam	14

### c- Weighting of assessments

No	Method	Weight
1	Mid_term examination	5
2	Final_term examination	60
3	Oral examination	10
4	Practical examination	20
5	Other types of assessment	5
Total		100%

### 9- List of references

No	Item	Type
1	Software testing and quality assurance	Open books
2	Software engineering	Open books
3	Empowering software testing process for better quality	Course notes

### 10- Matrix of knowledge and skills of the course

No	Items	Details
1	Course contents	Introduction to software testing
		Fundamentals of software testing
		White box testing
		Black box testing
		Automation testing
		Web site testing
		Software quality assurance
		Quality management in organizations

2	Teaching and learning methods	White Board
		Data Show
		Self Study Lessons
3	Activities and sources of teaching and learning	Book
		Recommended Reference
4	Student assessment	Paper and computer based on Quiz and Exams

**Course Coordinator:** - Osama Abu El Nasr

**Head of department:** - Dr. Samir Elmougy