Course specifications

Programme(s) on which the course is given B.Sc. of Pure Mathematics and Computer Science, Physics and Computer science

Major or minor element of programs Minor

Department offering the program Mathematics

Department offering the course Mathematics

Academic year / Level Fourth level (4)

Semester

Date of specification revision September 2012

Date of specification approval September 2012

A- Basic Information

Title: Software Engineering **Code:** M439

Credit Hours: 4 **Total:** 4 hr.

Lecture: 3 **Tutorial:** - **Practical:** 2 **Other:** -

B- Professional Information

1 – Overall aims of course

Software engineering concepts including the software life cycle and other software-development process models. Specification techniques, design methodologies, performance analysis, and verification techniques. Team-oriented software design and development, and project management techniques. Use of appropriate analysis and design tools as system modeling methodologies.

2 – Intended learning outcomes of course (ILOs)

a- Knowledge and understanding:

The student should be able to:

a1- Understand how to design and analyze problems

a2- Understand software development life cycle, requirement analyses and specification, and project management strategies.

a3- Know software design: top down design, object oriented design, etc.

a4- Know data driven software engineering and software project managemment.

b- Intellectual skills

The student should be able to:

b1- Exhibit appropriate analysis and specification of projects.

b2- Exhibit risks and effects of software project production

b3- Employ management tools and techniques for software production.

c- Professional and practical skills

The student should be able to:

c1- design software life cycle

c2- test software for specification project management

c3- able to evaluate the environment and risks of software life cycle.

c4- implement team work in searching, designing, and presenting a specific end-of-semester project.

d- General and transferable skills

The student should be able to;

d1- Identify analysis and design techniques and develop software application methods.

d2- Describe modeling tools and methods.

d3- Explain different software engineering design methodologies.

d4- Discuss and research rapid SE methodologies.

3- Contents

Topic	No. of hours	Lecture	Tutorial/ Practical
Introduction of software engineering	**4**	**1**	**1**
Software development life cycle	**4**	**1**	**1**
Requirement analysis and specification	**4**	**1**	**1**
Software design	**4**	**1**	**1**
Top down design	**4**	**1**	**1**
Object oriented design	**4**	**1**	**1**
Data driven diagrams	**4**	**1**	**1**
Software project management	**4**	**1**	**1**
Software development	**8**	**2**	**2**
Documentation	**8**	**2**	**2**
User Interface and group structure	**8**	**2**	**2**

4– Teaching and learning methods

4.1- Lectures

4.2- Working on hand in assignments

4.3- Attending practical classes

5- Student assessment methods

5.1 Mid term written exam to assess understanding competencies

5.2 Mid term practical Exam to assess programming skills

5.3 Oral Exam to assess attendance and interesting.

5.4 Semester hand in assignments to assess understanding professionalism.

5.5 Final lap exam to assess a whole lap skills

5.6 Final term written Exam to assess comprehension.

Assessment schedule

Assessment 1	**Mid term + practical**	**Week 7**
Assessment 2	**semester activities**	**Week 5 and 8**

Assessment 3 Final term oral exam + lap Week 13
Assessment 4 final term written exam Week 14

Weighting of assessments

Mid-Term Examination
20%
Semester Work (homework assignments + oral tests)
20 %
Other types of assessment
00%
Final-term written Examination
60%
Total
100%

Any formative only assessments

6- List of references

6.1- Course notes

Collected and prepared notes that cover the main topics in the course content

6.2- Essential books (text books)

Elementary text books under the title : *Software Engineering*

6.3- Recommended books :

6.4- Periodicals, Web sites, … etc

Non.

7- Facilities required for teaching and learning

Lecture: PC's - packages for ready made scientific programs. - Data Show
Lap: Advanced lap contains Visio, VP or any other diagram editing package and UML development software, project management tools.

Course coordinator: Dr. Passent El-Kafrawy
Head of Department: Prof. Mohamed R. Abdellatif
Date: / /