Menoufiya University
Faculty of Computers and Information
Department of Computer Science

جامعة المنوفية
كلية الحاسبات والمعلومات
قسم علوم الحاسب

COURSE SPECIFICATION

(SOFTWARE ENGINEERING-2)

Programme(s) on which the course is given	Computer Science
Major or Minor element of programs	Major
Department offering the program	Computer Science
Department offering the course	Computer Science
Academic year / Level	3rd Year / 2nd Semester

A- Basic Information

Title	Software Engineering-2			Code	CS353	
Credit Hours	Lecture	3	Tutorial	-	Practical	3
	Total				6	

B- Professional Information

1- Overall Aims of Course

- Complete understanding the principles and operations of software engineering-1 (CS352).
- To provide students with a team development experience.

2- Intended Learning Outcomes of Course (ILOs)

2a- Knowledge and understanding

a2 Understand and apply a wide range of principles and tools available to the software engineer, such as design methodologies, choice of algorithm, language, software libraries and user interface technique.

a5 Recognize and appreciate the professional and ethical responsibilities of the practicing computer professional including understanding the need for quality.

a7 Understand The basics of the software life cycle, from requirements definition to development and evaluation.

2b- Intellectual skills

b3 Identify a range of solutions and critically evaluate and justify proposed design solutions.

b5 Integrate and evaluate information and data from a variety of sources.

b6 Be creative in the solution of problems and in the development of designs.

2c- Professional and practical skills

c1 Plan and undertake a major individual project.

c2 Prepare and deliver coherent and structured verbal and written technical reports.

c3 Give technical presentations suitable for the time, place and audience.

c7 Apply computer science skills in a commercial or industrial environment.

2d- General and transferable skills

d1 Display an integrated approach to the deployment of communication skills.

d2 Use IT skills and display mature computer literacy.

d7 Demonstrate significantly enhanced group working abilities.

d8 Retrieve information from a variety of sources such as libraries, printed or electronic sources.

3- Contents

Topic	No. of Hours	Lecture	Tutorial /Practical
1 Introduction	3	3	-
2 Software Metrics • Definition of Software Metrics. • Classification of Software Metrics. • Process Metrics, Models, and Empirical Validation. • Implementation of a Metrics Program	6	3	3
3 Program Metrics • Measures. • Metrics.	6	3	3
4 Software Maintenance • Definition. • Maintenance and Costs. • Maintenance Estimation Models.	6	3	3
5 Line of Code and Function Metrics • Measuring Line of Code (LOC). • Advantages and Disadvantages of LOC. • Function Point. • Adjustment Factor. • Calculation Total Function Point	12	6	6
6 Software Cost Estimation • Software Productivity. • Estimation Techniques.	12	6	6

• Algorithmic Cost Modeling			
7 Object Oriented Development, Metrics, and Testing • Introduction • Identifying Objects. • Identifying Associations. • Metrics Suite for Object Oriented Design. • Object Oriented Testing	18	9	9
8 Software Testing • Examining the Specification. • Testing with Blinders On. • Examining the Code. • Testing with X-Ray Glasses	18	9	9
Total number of Hours for the course	**81**	**42**	**39**

4- Teaching and Learning Methods

4.1- Lectures
4.2- Practical projects in the laboratory
4.3- Exercises and tutorials
4.4- Research assignments

5- Student assessment methods

5-a Methods

5.a.1 Reports, assignments, and exercises to assess knowledge and understanding.
5.a.2 Regular oral, practical and written quizzes to assess intellectual skills.
5.a.3 Practical projects, final practical and oral exams to assess professional skills.
5.a.4 Reports, assignments, and discussions to assess general and transferable skills.
5.a.5 Final written exam to assess knowledge and understanding.

5-b Assessment schedule

Assessment 1	5th week.	Mid term exam
Assessment 2	8th week.	
Assessment 3	10th week.	
Assessment 4	16th week (Oral and practical)	
Assessment 5	17th -18th weeks (final written exam)	

5-c Weighting of assessments

Semester work	10%
Mid-term examination	10%
Oral / Practical examination.	20%
Final-term examination	60%
Total	100%

6- List of References

6-a Course Notes

"Lectures in Software Engineering ", selected by A. Elsisi, 2nd Semester 2006.

6-b Essential Books (Text Books)

Shari Pfleeger, "Software Engineering - Theory and Practice", 2nd Edition,
2001, Prentice Hall

6-c Recommended Books

Leach Roland, “Introduction to Software Engineering”, 2000.

6-d Periodicals, Web Sites, … etc

IEEE transactions on computers, software

7- Facilities Required for Teaching and Learning

- PC laboratory.
- Datashow, screen, and laptop computer

Course coordinator:

Dr. Ashraf Elsisi

Head of Department:

Prof. Nabil Abd El-Wahed Ismail

Date: / /