



**Philadelphia University
Faculty of Engineering
Department of Computer Engineering
First Semester, 2008/2009**

Course Syllabus

Course Title: Software Engineering 1	Course code: (650351)
Course Level: Third Year	Course prerequisite: Data Structure and Software Engineering Lab (630331, 630336)
Class Time: 12:45-14:15 (Mon. Wed.)	Credit hours: 3

Academic Staff

Specifics

Name	Rank	Office Number / Location	Off. Hs	E-mail Address
Dr. Mohammed Bani Younis	Assistant Professor	E725	10:00-11:00 S-T-R 11:15-12:15 M-W	mbaniyounis@philadelphia.edu.jo

Course description:

This course is about problems we face when constructing large software systems. Students will learn about various methodologies used in all parts of the software life cycle. We will illustrate the use and application of these methodologies by examining how they are used now days in the engineering firms dealing with Software development. By the end of the semester students will have acquired a strong grounding in object-oriented design and, more generally, improved their skills for developing a complex system using Software Engineering methodologies in the large. We will study several topics related to software design, including: Systems, System engineering, Creativity techniques, Project Management, Process models for designing a given problem, Requirements Engineering, how to specify a system using System Specification, and etc.

Course objectives:

After the completion of this course, students should be able to:

- Understand the various stages of system and SW development
- Map the models in the design of real life application and SW solutions
- Get acquainted with some project management skills
- Be able to develop a SW solution with it is related documentation and user manual
- Learn more about how to develop a complex system using Software Engineering methodologies
- Learn more about the tools related to Software engineering.
- Use these tools for modeling of small exercises

Teaching methods:

The course will be taken 3 hours class a week in form of power point presentations. During the course, the students will be exercising some parts of the course by using chosen software which will assist the understanding of the methods leaned. These exercises will be evaluated through the successful participation of the students visiting this course. Two Mid Term Examinations will be held during the course.

Learning outcomes: upon completing this course, the student should have:-

Knowledge and understanding

- Understand the essential definition related to system and software engineering
- Learn the fundamental concepts applied in the field of software engineering
- Get acquainted with some project management skills
- Understand how to develop the related documentation by using creativity and requirements analysis techniques for a Software solution
- Understand the essential concepts how to develop a complex system using Software Engineering methodologies
- Learn and use of the tools related to Software development using Software Engineering methodologies

Cognitive skills (thinking and analysis)

- Through the Exercise given for the different parts of the course, the students will be able to use the tools and exercise the development of a given software as it is used in an engineering firm dealing with Software development .

Communication skills (personal and academic).

- The group of students which has performed their exercise in a good way have to present their findings using the communication skills e.g. Power point presentations.

Practical and subject specific skills (Transferable Skills).

The practical skills are applied in the Exercises assigned for the students visiting this course.

Course Intended Learning Outcomes									
A - Knowledge and Understanding									
A1.	A2.	A3.	A4.	A5.	A6.	A7.	A8.		
√	√	√		√	√	√			
B - Intellectual Skills									
B1.	B2.	B3.	B4.	B5.	B6.	B7.	B8.	B9.	
√		√	√			√	√	√	
C - Practical Skills									
C1.	C2.	C3.	C4.	C5.	C6.	C7.	C8.	C9.	C10.
√	√	√	√		√			√	√
D - Transferable Skills									
D1.	D2.	D3.	D4.	D5.	D6.	D7.			
√	√	√	√	√	√	√	√		

Assessment instruments

- Exercises assigned to the distinct parts of the course
- Quizzes
- First and second exam
- Final examination: 50 marks

<u>Allocation of Marks</u>	
Assessment Instruments	Mark
First examination	20
Second examination	20
Exercises, Quizzes	10
Final examination	50
Total	100

Documentation and academic honesty

This course is given from the references provided. It is copyright protected. These references are abstracted in a form of power point presentations. The students are provided with this material in a printed form. The Students are also advised to avoid plagiarism during different home works and Project assignments.

Course academic calendar

week	Basic and support material to be covered	Homework/reports and their due dates
(1), (2)	Introduction and definitions	
(3)	Systems (Classification, Analysis, Decomposition, Synthesis)	
(4)	Creativity techniques (Analysis of problems)	Homework1
(5)	Project management (Project planning, cost estimation)	Quiz1
(6) First examination	Process models	
(7),(8)	Requirements engineering	Homework2
(10)	System specification (structured, behaviour, data, and object oriented)	
(9)	SA und SA/RT	Homework3
(11) Second examination	Petri nets	Quiz2
(12)	Entity Relationship	Homework4
(13)	Object orientation, UML	Homework5
(14)	UML/RT	Homework6
	Software quality und testing	Homework7
(15) Specimen examination (Optional)	Business processes	
(16) Final Examination		

Expected workload:

On average students need to spend 2 hours of study and preparation for each 50-minute class. The students are expected to give more time for the project work on an average of one working per project assignment.

Attendance policy:

Absence from classes shall not exceed 15%. Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the relevant college/faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

Course references:

1. **Software Engineering Theory and Practice**, second edition. Prentice- Hall 2001.
2. **Softwaretechnik**, Dr. B. Rumpe, Wintersemester 2002 / 2003, Technische Universität München. (Translated parts from the book into english)
3. **Softwaretechnik I**, Prof. Dr.-Ing. Dr. h.c. P. Göhner, Wintersemester 2002 / 2003, Universität Stuttgart. (Translated parts from the book into english)
4. **Software Engineering I**, Prof. Dr. A. Schürr, Frühjahrstrimester 2002, Universität der Bundeswehr München.
5. **Systems and Software Engineering I**, Prof. Dr.-Ing. Vogel-Heuser, Sommersemester 2002, Universität Wuppertal.