Philadelphia University

Faculty of Engineering - Department of Electrical Engineering

Course Details:

Title:	Reverse Engineering (0640458)
Prerequisite:	Mechatronics project (0640342)
Credit Hours:	3 credit hours (16 weeks per semester, approximately 45 contact hours)
Textbook:	'Product Design: Techniques in Reverse Engineering and New Product Development by Otto and Wood. Prentice Hall 2001.
References:	RE (reverse engineering) as necessary phase by rapid product development by M. Sokovic ∗, J. Kopac Journal of Materials Processing Technology 2005.
Description:	The course is a requirement for level 4 of electrical engineering students. It Introduces students Reverse Engineering Methodology and the application of these methodologies through practical projects.

Course Outlines:

Course Academic Calendar		
Week	**Subject**	**Notes**
Oct 17	**Introduction**	
Oct 24	**Forward Engineering Design:** Design thought and process, design steps	
Oct 31	**Forward Engineering Design:** examples	
Nov 07	**System RE:** RE methodology, RE steps	**Prescreening**
Nov 14	**System RE:** product development, product functions	
Nov 24	**System RE:** Product teardown, engineering specs, product architecture	**Observation**
Nov 28	**Mechanical RE:** Computer aided RE	**Dissection**
Dec 05	**Mechanical RE:** rapid prototyping	
Dec 12	**Electronic RE:** Identify components	**Analysis**
Dec 19	**Electronic RE:** PCB RE	
Dec 26	**Electronic RE:** VHDL	
Jan 02	**Software RE** Source code,	**Report Due**
Jan 09	re-drawing charts,	
Jan 16	applications	
Jan 23	**Student Project Presentations**	
FINAL EXAMS (January 29– Feb 03)		

Course Learning Outcomes with reference to ABET Student Outcomes:

Upon successful completion of this course, student should:

1.	Understand the Reverse Engineering (RE) Methodology	1
2.	Work in a multi-Disciplinary team environment to disassemble products and specify interactions among subsystems and their functionality	5
3.	Understand Computer-Aided RE and Rapid Prototyping Technology	1
4.	Re-draw electrical schematics from available PCBs	2
5.	Understand RE applications in software engineering	1,
6.	Understand the ethical rules regarding RE	4
7.	Ability to write a report and present it.	3

Assessment Guidance:

Evaluation of the student performance during the semester (total final mark) will be conducted according to the following activities:

Sub-Exams: The students will be subjected to two scheduled written exams, first exam and second exam during the semester. Each exam will cover materials given in lectures in the previous 3-4 weeks.

Quizzes: (3-5) quizzes of (10-15) minutes will be conducted during the semester. The materials of the quizzes are set by the lecturer.

Homework and projects: Tutorials sheets will be handed out to the students and homework should be solved individually and submitted before or on a set agreed date. Student may be assigned to present project(s).

Cheating by copying homework from others is strictly forbidden and punishable by awarding the work with zero mark

Final Exam: The students will undergo a scheduled final exam at the end of the semester covering the whole materials taught in the course.

Grading policy:

Midterm Exam	30%
Project, Homework and quizzes	30%
Final Exam	40%
Total:	100%

Attendance Regulation:

The semester has in total 45 credit hours. Total absence hours from classes and tutorials must not exceed 15% of the total credit hours. Exceeding this limit without a medical or emergency excuse approved by the deanship will prohibit the student from sitting the final exam and a zero mark will be recorded for the course. If the excuse is approved by the deanship the student will be considered withdrawn from the course.