



College of Engineering

FRESHMAN ENGINEERING CLINIC II
0901-102
SYLLABUS FOR SPRING 2004

Course Coordinator: Dr. J. Orlins

Section	Professor	Meeting Times	Monday Meeting Room	Laboratory Location
01	Newell	M: 8:25AM - 9:15 AM T: 8:00 AM - 10:40 AM	102	339
02	Everett	M: 8:25AM - 9:15 AM T: 8:00 AM - 10:40 AM	104	302
03	Polikar	M: 8:25AM - 9:15 AM T: 8:00 AM - 10:40 AM	202	204
04	Farrell	M: 9:50AM - 10:40 AM W: 8:00 AM - 10:45 AM		339
05	Everett	M: 9:50AM - 10:40 AM W: 8:00 AM - 10:45 AM		302
06	Pietrucha	M: 9:50AM - 10:40 AM W: 8:00 AM - 10:45 AM		146

Competitive Assessment

In today's quickly changing and increasingly competitive market place, it is imperative that manufacturers keep abreast of the technological advances and design innovations incorporated into competing product lines. The term *competitive assessment* or reverse engineering has been coined by manufacturers to describe the process of ethically acquiring, inspecting, analyzing, instrumenting and testing the product lines of other manufacturers. You will be required to use the skills obtained in Freshman Engineering Clinic I. Developing engineers with hands-on practice is critical to the economic development of US industry.

Pre-requisite: Freshman Engineering Clinic I, Advanced College Chemistry, and Calculus I

Co-requisite: Concurrent enrollment or credit for Calculus II and Physics I

Engineering Clinic II Objectives

- 1) Introduce students to the science and art of design by evaluating the work of practicing designers,
- 2) Introduce multidisciplinary teams of engineering students to unifying engineering science principles such as mass, momentum and energy balances; materials; thermodynamics, and electricity/magnetism using a consumer appliance or an engineering process as a test bed,
- 3) Enable students to determine how scientific principles, material properties, manufacturing techniques, cost, safety requirements, environmental considerations and intellectual property rights impact the design of a product,
- 4) Allow students to actively participate in a meaningful design effort by instrumenting and evaluating the performance of a consumer appliance or an engineering process,
- 5) Develop technical communication skills in graphical, written, and oral formats, and
- 6) Continue development of time management, and critical thinking skills.

Required Texts & Supplies (Available at the Rowan University Bookstore)

Engineering: *Freshman Clinic I & II (REQUIRED)*

McGraw-Hill / Primis Online ISBN 0-390-37196-3

- Large 3-ring binder for your portfolio.
- Engineering Paper for Homework: Engineer's Computation Pad Ampad Corporation
- Laboratory notebook w/ numbered pages, duplicate page sets; e.g., Boorum #09-9088.
- Safety glasses

Grading

This course is only offered for grade credit. The grade is determined by evaluating work performed in the following areas (any modifications to the percentages shown will be specified by the individual instructor and presented to the class in written form):

Reverse Engineering Project	Percent of Total Grade
Laboratories and reports	40%
Communications: presentations & portfolio	25%
Final Report	20%
Quizzes & Homework	10%
Professional Conduct	5%
Total	100%

Absolute Grading Scale

In this course we would like to create an atmosphere of positive cooperation between students. Many of the exercises in this course will require you to work in teams and you will be expected to help each other learn the material. To encourage and support cooperative learning you will be graded on an absolute grading scale as given below. The net result is that it is in your interest to help your classmates become successful engineers. You will learn through teaching others.

Letter Grade	University Point System	Percentage
A	4.0	93
A-	3.7	90
B+	3.3	87
B	3.0	83
B-	2.7	80
C+	2.3	77
C	2.0	73
C-	1.7	70
D+	1.3	67
D	1.0	63
D-	0.7	60
F	0.0	< 60

Extra Credit - Student and Professional Engineering Societies:

An objective of this course is to introduce the profession of engineering to you. An excellent method to gain insight into a field of engineering is to attend engineering student club and engineering professional society meetings. For approved student and professional technical meetings you will receive 1 point per meeting added to your final grade, up to a total of 3 points during the semester. ***This can make the difference between a B+ and an A- on your final grade for the course!*** To obtain credit for attending a student meeting you must complete a section of the **Extra Credit Form** (on the last page of this syllabus) and obtain a signature from the faculty member in attendance. To expand your knowledge of all engineering fields, you are encouraged to attend meetings of engineering clubs outside of your chosen engineering discipline.

Projects, Laboratories, Reports, and Homework

All projects and homework, unless otherwise specified by the professor, will be done and handed in by teams. The section professors will assign teams of 3 or 4. One grade will be given per team. One team member will be designated the leader for each assignment and only one homework assignment per team will be accepted. The Rowan Engineering homework format must be followed for all assignments, unless otherwise directed (the format is described on the course web page). Laboratory reports must also follow the proscribed format; this format will be described by your section instructors and can also be found on the course web page.

The team leader will be responsible for coordinating the work and making sure everyone in the team understands all the problem solutions or project work before they are submitted to the professor. (Hint: Try to set up each problem individually, then get together to work out the details or review the project status.)

If a student's name appears on a solution set, it certifies that he/she has participated in working on part of the project/homework **and understands all the solutions**. If this turns out not to be the case, then both the student in question and the team leader will have points deducted from their score. At random intervals a team representative, chosen by the professor, may be called to give a solution to a homework problem or present part of the project work.

All work is due at the beginning of the class period and is expected to be presented in a professional manner. Late work will be accepted based on the following policy unless otherwise specified by your instructor:

10 minutes late - 5 PM on due date:	Maximum grade: 75% of total points
After 5 PM and before 5 PM on day following due date	Maximum grade: 50% of total points
After 5 PM on the day following the due date.	Maximum grade: 0% of total points

If you have obtained an excused absence (see Attendance Policy on Page 4) then you must see your professor on submitting missed assignments. Opportunities for extra credit (see Extra Credit policy on Page 2) will be given throughout the semester, but no extra credit will be given after the last class period of the semester.

Portfolio

You will receive handouts each week in this course (such as this syllabus). It will be beneficial for you to maintain a portfolio of these handouts and your work. This portfolio will help you to learn and review the material presented in this course.

You are required to compile a portfolio of materials for this class that you will submit at the end of the semester for a final grade. This portfolio will consist of **all** handouts given in class, lecture notes, homework problems, quizzes, copies of ALL lab reports and projects, and laboratory notebooks. These materials are required to be contained in a large 3-ring binder. The material in this portfolio should be neatly organized into sections and separated with dividers. Your portfolio will be inspected as directed by your section instructor.

Quizzes

Unannounced quizzes may be given throughout the semester. These quizzes will begin at the start of the class period and have a duration of 5-10 minutes. No make-up quizzes will be given for unexcused absences (as defined in the Attendance Policy on Page 4). Unless announced otherwise, all quizzes are closed book and notes.

Professional Conduct

You will be graded on your professionalism in this course. Many people including your fellow employees, community and family rely on your professional decisions and actions. Your work should place the highest value on safety. In addition, engineers are expected to consider the ethical and environmental consequences of their actions. In seeking internships and fulltime employment, employers will ask professors their opinion of not only your excellence in engineering, but also your ability to make engineering decisions that are safe, ethical and environmentally responsible. The practice of professionalism will be divided into the three areas of safety, attendance, and ethics.

Safety

Safety is of critical importance; it will be discussed numerous times throughout this course and in your later engineering courses. You will receive rules and guidelines that must be followed. Failure to follow safe laboratory practices can lead to accidents that can endanger you and other students. Your grade will be reduced if you fail to follow proper safety procedures.

Attendance Policy

Attendance is required. Attendance will count toward your final grade. An indirect grade of attendance will be given in all teamwork exercises. It is to your advantage to attend this class, since a substantial amount of material is presented for which no texts are available and many of the laboratories and in-class exercises will be conducted in teams. In addition to classes, you are expected to attend all scheduled team meetings.

Although arriving late for class can occur, a habitual practice of this is not professional. You will only be given credit for attendance in class if you are present within 5 minutes of the start of the class period. If you know that you will be absent from class for a valid reason, obtain approval from your instructor 24 hours before the class period. The only exception to this rule is a medical emergency.

Academic and Work Conduct

Your ability to work effectively with your coworkers (classmates) and team leaders and managers is being formulated through your university experience. If you contribute creatively and effectively to the workload of your team in homework and laboratory assignments, and studying for quizzes and the final exam, then industry will actively seek you as an employee. If you are careless in your work, no company will want to hire you.

The policy in this class in matters of academic misconduct will follow that stated in "Rowan University Student Handbook." Any student cheating in this class will receive a grade of F for the course. If another student is involved in the offense knowingly, he or she will receive the same penalty.

As an engineering professional, it is extremely important that you treat your manager and your colleagues with respect and consideration. It is expected, therefore, that you will maintain good professional conduct throughout this course, in all your interactions with your peers and the instructor. You will earn points for having good professional conduct, and you may lose points for exhibiting poor behavior. Some examples of good conduct and poor conduct are given below.

Examples of Good and Poor Professional Conduct

Good Conduct

1. Arrive on time
2. Pay attention
3. Good attendance
4. Prepared (read the text, review notes from previous class, read handouts before coming to lab)
5. Follow good laboratory safety practice (safety glasses, long pants, closed shoes, follow precautions for specific experiment)
6. Respect the office hours
7. Prepared for office hours
8. Good attitude toward learning and problem solving
9. Make constructive comments

Poor conduct

1. Arrive late for class frequently / making a conspicuous and disruptive late entrance.
2. Not paying attention in class (reading newspaper etc.)
3. Disruptive behavior in class (side conversations, etc.)
4. Ignore good safety practice (no safety goggles, shorts, sandals etc.)
5. Absent from class frequently
6. Unprepared for class
7. Disregard office hours
8. Not prepared when coming to ask questions during office hours

Computer Usage

The engineering computer skills to be applied in the course include: (i) word processing; (ii) spreadsheets; (iii) computer-aided design; (iv) symbolic programming; and (v) the use of application software. The student will become familiar with a networked PC computing environment that provides e-mail services, Internet access, and access to other campus information technology resources. For information on connecting a personal computer in your residence hall to the Rowan Network please go to web site <http://www.rowan.edu/res/>. For technical support questions in Rowan Hall, please visit <http://www.rowan.edu/it/engineering/>, or send email to support@galaxy.rowan.edu.

FRESHMAN CLINIC II
Spring 2004

SEMESTER SCHEDULE

WEEK #	MONDAY	TUESDAY (Sections 1, 2, 3)	WEDNESDAY (Sections 4, 5, 6)
WEEK 1	01/19 Martin Luther King Holiday (no class)	01/20 <i>First Day of Classes</i> Getting to know you	01/21 Getting to know you
WEEK 2	01/26 All in Auditorium –Introduction to Reverse Engineering	01/27 Lab: Flashlights	01/28 Lab: Flashlights
WEEK 3	02/02	02/03	02/04
WEEK 4	02/09	02/10	02/11
WEEK 5	02/16	02/17	02/18
WEEK 6	02/23	02/24	02/25
WEEK 7	03/01	03/02	03/03
WEEK 8	03/08	03/09 Mid-Semester Presentations	03/10 Mid-Semester Presentations
WEEK 9	03/15 SPRING BREAK – <i>No Classes</i>	03/16 SPRING BREAK – <i>No Classes</i>	03/17 SPRING BREAK – <i>No Classes</i>
WEEK 10	03/22	03/23	03/24
WEEK 11	03/29	03/30	30/31
WEEK 12	04/05	04/06	04/07
WEEK 13	04/12	04/13	04/14
WEEK 14	04/19	04/20	04/21
WEEK 15	04/26	04/27	04/28
WEEK 16	05/03 <i>Last Day of Classes</i> FINAL PRESENTATIONS	05/04 <i>First Day of Finals Week</i>	05/05
WEEK 16	05/10 <i>Last Day of Finals Week</i>		

ROWAN UNIVERSITY
COLLEGE OF ENGINEERING
FRESHMAN ENGINEERING CLINIC
EXTRA CREDIT FORM

NAME _____ SECTION _____

You can accumulate up to 3 points added to your final grade by attending technical meetings of the engineering professional societies. Use this form to document your attendance at these meeting and turn it in to your Monday session instructor at the end of the semester (or as soon as you have attended 3 meetings).

Name of Professional Society: (or other organization)
Date of Attendance:
Description of Technical Topic:
Signature of Faculty Representative
Name of Professional Society: (or other organization)
Date of Attendance:
Description of Technical Topic:
Signature of Faculty Representative
Name of Professional Society: (or other organization)
Date of Attendance:
Description of Technical Topic:
Signature of Faculty Representative