

**ENGR – 4920  
ENGINEERING DESIGN PROJECT  
COURSE SYLLABUS**

**Department of Biological and Agricultural Engineering  
University of Georgia  
Spring, 2004**

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**UGA Bulletin Course Description**

Engineering design experience including completion of a design project under the supervision of a project director.

<u>Offered</u>	<u>Credits</u>	<u>Level</u>	<u>Weekly Class meeting pattern</u>
Spring	4	4 <sup>th</sup> year	Non-traditional format. Students will meet with a faculty review panel periodically (every two weeks)

**Prerequisites:** ENGR 2920 and permission of department

**Prerequisite or corequisite:** SPCM 1100.

**Requirements and Grading Components**

Required by all students enrolled in ENGR 4920

Mid-Term Status Report: Oral Presentation (Required of all students enrolled in ENGR 4920)

Final Report: Oral Presentation

Final Report: Poster Presentation

Final Report: Written Document

Other assessment

Design Notebook

Progress Reports

Suggested Breakdown of grades

Overall Design notebooks (evaluated approximately every two weeks)/member 25%

Average of Progress Reports 20%

Mid term status report/team 10%

Final presentations/team

Written documentation detailing the design solution 25%

Oral Presentation with visuals 10%

Poster 10%

## ENGINEERING PROFESSIONALISM POLICY

Engineers make great contributions to society. Engineering is a very satisfying profession that provides many rewards but is demanding and requires hard work. The engineering profession is governed by a code of ethics. Engineering faculty at UGA expect students to act in a professional manner at all times and develop the work ethics required for a successful engineering career. Engineering students at UGA are responsible for maintaining the highest standards of professionalism and professional practice.

### GRADE DETERMINATION

The grades are based on the following scale.

- 1) A shows maximum effort and high level of design skills for a senior
- 2) B shows very high level of effort and above average design skills for a senior
- 3) C shows a good effort and average design skills for a senior
- 4) D shows below average effort and average design skills for a senior
- 5) F unacceptable work

The students will work together on the assigned project. Each team member's performance on project presentations and written reports should be assessed based on overall performance of the team (that is, each team member will be assigned the same grade for project presentations and project written reports). Therefore, it is the responsibility of EACH team member to review all documents used to represent the work of the team.

Individual team member performance will be assessed using the Design Notebooks and Progress Reports (that is, the performance of an individual will be assessed using the grade assigned to that individual's Design Notebooks and the Progress Reports). The Notebook must show the individual student's contribution to a project. Individual contribution is considered to be *independent work* that has been shown through proper documentation. The Progress Report should indicate the individual's contribution to the overall project and the relationship of this contribution to those provided by other team members.

#### Submitted Work

All reports must be typed and machine drawings prepared by AutoCAD in the format taught in the department. Reports should be neat, logical and concise.

Assignments are due at the specified deadline. Assignments turned in late will not be accepted and a grade of 0 will be issued. There is **no exception** for not meeting a deadline for assignments. If you have an excused absence, the grade for that assignment will not be considered when calculating the final course grade. If you anticipate conflicts for meeting a deadline, you should arrange to turn in the work early.

#### Team Member Assessments:

A team member assessment form is attached to this syllabus. Each student is required to complete this assessment form and turn it in to the instructor. Times for providing these assessments will be announced during the semester. These assessment forms should be used to indicate the performance of your team mates. The instructor will use this form to determine if problems exist within a particular team and the instructors fully expect each student enrolled in ENGR 4920 to utilize this assessment form to indicate difficulties that exist within a team. Lack of participation may result in an instructor initiated course withdrawal. This assessment form is a **primary method to identify students** who are **not contributing** to the term project.

### **DEPARTMENTAL GRADING POLICY REGARDING COMMUNICATION SKILLS**

Thirty percent (30%) of the grade on all written assignments (lab reports and papers) and oral presentations will be based on quality of communication. Spelling, grammar, punctuation, and clarity of writing are evidence of written communication quality. Enunciation, voice projection, clarity and logical order of the presentation and effective use of visual aids are evidence of oral communication quality.

### **ACADEMIC HONESTY**

The University of Georgia seeks to promote and ensure academic honesty and personal integrity among students and other members of the University Community. A policy on academic honesty has been developed to serve these goals. All members of the academic community are responsible for knowing the policy and procedures on academic honesty. The document for academic honesty may be found at the web site for The University of Georgia Office of Senior Vice President for Academic Affairs and Provost.

## COURSE LEARNING OBJECTIVES MATRIX

<u>Course Learning Objectives</u>	<u>Course Assessment Methods</u>	<u>Extent of Coverage of Program Outcomes (ABET Criterion 3)</u>		<u>Applicable Criterion 3 Program Outcomes</u>
Upon successful completion of this course the student will be able to				
1. Ability to integrate knowledge and skills developed in the engineering degree program	A,B,C	a-xxx b-xx c-xxx e-xxx	f-xx h-xx	a. an ability to apply knowledge of the mathematical, physical, biological and engineering sciences
2. Apply engineering, mathematical and natural sciences skills in the development of a product	A,B,C	a-xxx b-xx e-xxx		b. an ability to design and conduct experiments as well as to analyze and interpret data
3. Use of experiments or analysis of published results for development of design criteria	A,B,C	a-xx b-xxx c-xx		c. an ability to implement logical design methodology in order to meet desired needs
4. Develop quantitative design criteria	A,B,C	a-xx b-xx c-xxx	d-xxx e-xx g-xxx h-xxx k-xxx	d. an ability to function on multi-disciplinary teams  e. an ability to identify, formulate and solve engineering problems
5. Apply creative thinking techniques for the formulation of conceptual solutions	A,B,C	a-xx b-x c-xxx d-xxx e-xxx	f-xxx g-xxx h-xxx j-xxx k-xxx	f. an understanding of professional and ethical responsibility  g. an ability to communicate effectively
6. Apply the logical steps of design evaluation	A,B,C	a-xxx c-xxx d-xxx	f-xx g-xxx h-xxx k-xxx	h. the broad education necessary to understand the impact of engineering solutions in a global and societal context
7. Reinforce the value of communication skills	A,B,C	d-xxx	g-xxx	i. a recognition of the need for and an ability to engage in life-long learning
8. Engage in self-learning	A,B,C	c-xx f-xx	i-xxx k-xxx	j. a knowledge of contemporary issues
				k. an ability to use techniques, skills and modern engineering tools necessary for engineering practice

Assessment Method: A-Reports, B-Notebooks, C-Presentations

## PEER EVALUATION OF TEAM MEMBERS

Write your name here: \_\_\_\_\_

Date of this assessment: \_\_\_\_\_

*Using the table below, rate the degree to which each member fulfilled his or her responsibilities (as listed below). Be sure to rank your performance. You need to also circle your name so the instructors know what you believe your performance is compared to what your teammates believe your performance is. The rating system for this is*

Rating	Description
1	Consistently went above and beyond: tutored teammates, carried more than his or her fair share of the load
2	Consistently did what he or she was supposed to do, very well prepared and cooperative
3	Usually did what he or she was suppose to do, acceptably prepared and cooperative
4	Often did what he or she was suppose to do, minimally prepared and cooperative
5	Sometimes failed to show up or complete tasks, rarely prepared
6	Consistently failed to show up or complete tasks, unprepared
7	Practically no participation. Superficial role on the team
8	No participation at all

Participation Item	Team Member Name	Team Member Name	Your Name (you are to rank yourself)
Attends meetings			
Comes to meetings prepared			
Contributes to the project during team meetings			
Contributes to the project at times other than team meetings (this person does not require other team members' to be present in order to do a task)			
Attempting to communicate clearly and with civility			
Listening effectively			
Accepting criticism gracefully			
Completing tasks fully and on time			

**These assessments as marked above will be kept confidential.**

*This form will be needed for more than one assessment. Please photocopy.  
Requesting extra assessment forms is highly discouraged.*

## CLASS SCHEDULE AND CRITICAL DATES

### Bi-weekly Meetings with the Instructors: Wednesdays at 3:30 pm

Jan. 14 & 28

Feb. 11 & 25

Mar. 17 & 31

Apr. 14 & 21

### Important days:

Date	Objective
Jan. 28 <sup>th</sup>	<u>Completion</u> of interviewing with customers, and developing of quantitative specifications
Feb. 9 <sup>th</sup>	<i>REPORT</i> - Problem Definition with Specifications
Feb 25 <sup>th</sup>	<u>Completion</u> of developing conceptual solutions and selecting the final concept
Mar. 1 <sup>st</sup>	<i>REPORT</i> - Conceptual Solutions and the Selected Concept
Mar. 1 <sup>st</sup> & Mar. 3 <sup>rd</sup>	<i>PRESENTATION</i> - Mid-term
Apr. 7 <sup>th</sup>	<u>Completion</u> of detail solution documents
Apr. 14 <sup>th</sup>	<u>Completion</u> of prototyping of final solutions
Apr. 26 <sup>th</sup> or 28 <sup>th</sup>	<i>REPORT</i> - Final Design
Apr. 26 <sup>th</sup> & 28 <sup>th</sup>	<i>PRESENTATION</i> - Final Design

### Reports:

1. Progress Reports (each member) are due by every Monday at 5pm before the meeting day. Electronic and written progress reports are required to be turn in to Dr. Verma and Dr. Huang.
2. Design Notebooks (each member) are required due with the Progress Reports. Submit to Dr. Huang.
3. Project Team Report – Problem Definition with Specifications, due on Feb. 9<sup>th</sup>
4. Project Team Report – Conceptual Solutions and the Selected Concept, due on Mar. 1<sup>st</sup>
5. Project Final Design Report, due on Apr. 28<sup>th</sup>

Note: All reports are required to follow the format provided in ENGR 2920