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**EML 4551**  
**ETHICS & DESIGN PROJECT ORGANIZATION**  
**Fall 2009**

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**[www.eng.fiu.edu/mme/robotics](http://www.eng.fiu.edu/mme/robotics)**

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**Course Description:**

Organization to include problem definition, goals, survey, conceptual and preliminary design, ethics and cost components, social and environmental impact, presentation to enhance communication skills. Corequisites: EML 3101, EGM 3311, EML 3500, and EML 4140.

**Lectures:**

R 12:30-1:45 pm, EC 1105.

**Office Hours:**

M 5:00-6:00 pm. For other times, appointment by e-mail is encouraged.

**Reference Books (Students are not required to purchase these books):**

FE Review Manual, Michael R. Lindenburg.

NCEES Fundamentals of Engineering Supplied-Reference Handbook, 7th Edition, NCEES. (This will be made available in pdf format.)

**Course Outline:**

- Assessment of educational engineering background in terms of FE style exams
- Review of engineering ethics; review and discussion of ethics case studies
- Review of possible areas for senior design project

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- Team presentations on selected topics, timeline, division of responsibilities, literature survey, alternate designs, initial structural design, team progress reports

### **Course Objectives:**

- Assessment of educational engineering background
- Engineering ethics, case studies
- Senior design team formation, selection of faculty advisors and topics

### **ABET MME Program Outcomes Supported by the Course:**

MME departmental program outcomes that are supported by this course are as follows:

- (a) Ability to apply knowledge of mathematics including statistics, multivariable calculus and differential equations, science including physics, and engineering
- (c) Ability to design a system, component, or process to meet desired needs
- (d) Ability to function on multi-disciplinary teams
- (e) Ability to identify, formulate and solve engineering problems
- (f) Understanding of professional and ethical responsibility
- (g) Ability to communicate effectively
- (h) Broad education necessary to understand the impact of engineering solutions in a global and societal context
- (i) Recognition of the need for, and a ability to engage in life-long learning
- (j) Knowledge of contemporary issues
- (k) Ability to use the techniques, skills and modern engineering tools necessary for engineering practice

### **Note Regarding ABET MME Outcomes:**

ABET program outcomes are defined for the MME program that must be achieved by graduating students. Each course supports several of the outcomes incrementally but must not necessarily achieve them fully.

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## Grading:

<u>Activity</u>	<u>Percent</u>
Attendance	5%
Ethics Case Assignments	15%
FE Style Exam (Only NCEES Reference Handbook Open)	25%
Team Progress Reports & Presentations	15%
Final Team Presentation and Final Report	30%
Team Poster	10%

Final team report should use the Senior Design Final Report format and include all required sections that include literature survey, alternate designs, initial structural design, prototype design, cost analysis, discussion and conclusions, reference list, engineering drawings, etc.

## Late Reports:

Project and report due dates will be strictly enforced. Late project submissions will not receive full credit, and the following policy will apply: Submissions after the class hour on due date or the following day will lose 10 points out of 100. Submissions on the second or third day after the due date will lose 10 additional points each day.

## Make-up Exams:

Make-up exams will be allowed only after the student provides a medical doctor's original report describing the problem and a statement that it was an emergency. The report must include the doctor's address and phone number. The Department will contact and verify the situation before a test day is scheduled.

## Dates:

Report due dates will vary between one to several weeks depending on the amount of work required. However, the due dates will be announced in class as the assignments are distributed. It is the student's responsibility to follow announcements closely.

## Attendance:

Attendance will be monitored throughout the semester.

## Ethics:

All work prepared and submitted in this course in the form of projects, presentations, problem solutions in quizzes and exams are expected to be original and produced by the submitting student. Any portion that may have been borrowed from a previous work must be clearly identified and referenced to indicate the original author along with the title of

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the work, and where and when it appeared. It is extremely important to realize that not doing so may result in an accusation of plagiarism.

Projects must contain the following statement and include each team member's signature:

Author's Statement:

The work submitted in this project is solely prepared by NAME LASTNAME, and it is original. Excerpts from others' work have been clearly identified and listed in the list of references. All of the engineering drawings, computer programs, formulations and related files submitted on the accompanying CD are also original and prepared by NAME LASTNAME.

NAME LASTNAME

(Include Signature of Each Team Member)

### **Correspondence via E-mail:**

Each student is required to provide a reliable e-mail address for correspondence. Various announcements and reminders will be sent via e-mail throughout the semester.

Students are expected to check their e-mail regularly and make sure their inboxes are not full as the bounced mail messages will not be sent again.

### **Incomplete Grades:**

A grade of "incomplete" will not be assigned to replace an unwanted grade. In order to be eligible to receive "incomplete," only a single component of the entire coursework needs to be missing. The reason for failure to fulfill the requirement in time must be officially proved by the student (e.g., a medical doctor's official letter), and verified by the Department in order to receive an "incomplete" grade.

The University requires that a student must fill out an "Incomplete Grade Form" before the incomplete grade is assigned. This University policy and the related form are printed below.

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### **Policy for Assigning an Incomplete "I" Grade**

An incomplete grade is a temporary symbol given at the discretion of the instructor for work not completed because of serious interruption not caused by the student's own negligence. An incomplete must be made up as quickly as possible but no later than two consecutive semesters after the initial taking of the course or it will automatically default to an "F" or the grade that the student earned in the course. There is no extension of the two semester deadline. The student must not register again for the course to make up the incomplete. Students who have incomplete grades on their records must remove the incomplete by the end of the fourth week of the term in which they plan to graduate. Failure to do so will result in a cancellation of graduation .

In such cases where the course instructor determines that it appropriate to award a student a grade of "I" (incomplete) the following steps must be followed.

Using an Official University Form the course instructor will report the following:

1. The grade earned by the student to date
2. The missing work and the percentage of the final grade it represents (this requires the details of the specific missing assignment)
3. The date the instructor expects the missing work to be submitted or in the case of an examination made up
4. The justification for awarding the grade of "I"
5. Have the student sign the form
6. Submit this form to the Department Chair and Dean and maintain a copy for instructor records and provide a copy for the student
7. Upon satisfying the requirements for a grade the instructor will sign off on the form and attach it to the change of grade form she or he will submit.

