**EML 4551/ EML4552 Senior Design I&II**

**Fall 2015- Spring 2016**

**Meetings:** Tuesday & Thursday 2:45PM - 5:30PM (B211) – may start at 2PM (staff meetings and presentations)

**Instructor:**

Dr. Nikhil Gupta (Coordinator/ Instructor and co mentor)

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Office Hours:

Tu., Th. 10 AM to noon

Friday by appointment only

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**Teaching Assistants:**

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Andrew Panek

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Office Hours: M, 9:30 - 10:45 AM, W, 3:00PM- 4:00PM or by appointment

‎‎

**Capstone course**

This two-semester course constitutes the culmination of four years of engineering education where students will bring together their knowledge towards the completion of a 'design project'. Some of the skills acquired by students fall in the traditional areas of Mechanical Engineering: Thermodynamics, heat transfer, fluid dynamics, solid mechanics, materials, 3-D CAD, etc. However, there are also some skills that are required to have a successful career. These include: team- work, problem solving, project planning and control, management and writing skills, professional ethical conduct, etc.

It is assumed that a graduating engineer will have mastered all the skills within the traditional disciplines. The purpose of the Senior Design Project is to pull them all together and apply them towards the design and implementation of a 'product', and to offer the students an opportunity to experience team-based design under conditions that closely resemble those that will be encountered in industry. Students must develop and sharpen skills in team organization, time management, self-discipline, and technical writing, in order to be successful in this course. An important goal of this course is to expose students to a 'hands-on' experience in which they have to specify, design, and produce a full-system with the help of the 'customer'. This objective has to be accomplished while working as a team, and under time pressure.

Some of the 'non-technical' areas that the course is intended to cover include:

* Team organization and motivation
* Interpersonal skills applied within the design team and with the 'customer'
* Technical writing: specifications, proposals, reports, online documents, etc.
* Engineering drawings
* Presentation preparation and execution skills
* Professionalism and ethics
* Personal time management
* Project planning, work breakdown structure, scheduling and budgeting, and design record-keeping Identifying customer needs and needs assessment
* Product synthesis based on customer needs
* Concept generation and selection
* Preparing engineering specification
* Problem formulation and application of engineering disciplines to design components
* Interface identification and tracking
* Consistency of purpose and project management skills

This course, although not necessarily demanding at an intellectual level, is **extremely** demanding in terms of hours needed to complete tasks, self-motivation, team dynamics, and time management.

**Senior Design Text Books**

**Required (Professional and Skills Development)**

1. *Engineering Design*, G. Dieter, McGraw-Hill
2. *Project Management and Team Work,* K. Smith, McGraw- Hill
3. *Pocket Guide to Technical Presentations and Professional Speaking*, S. Zwickel and W. Pfeiffer, Prentice Hall, 0-13-152962-5

**Secondary References:**

1. *Fundamentals of Engineering Design*, B. Hyman, Second Edition, Prentice-Hall
2. *Project Management: A Systems Approach to Planning, Scheduling, and Controlling*, H. Kerzner, Wiley
3. *Technical Writing: A Practical Approach*, W. Pfeiffer, Prentice-Hall
4. *Product Design and Development*, K. Ulrich and S. Eppinger, McGraw-Hill
5. *Engineering Design Communication: Conveying Design Through Graphics*, S. Lockhart and C. Johnson, Prentice-Hall
6. *Engineering Design: A Project-Based Approach*, C. Dym and P. Little, John Wiley and Sons

**Course Objectives**

Provide “In-Practice” learning by going through the entire design cycle on specific projects.

Emphasize an integrated approach on the cornerstones of a successful product development cycle:

System design

Integration of ME disciplines

Project management and control

Work Breakdown Structure

Scheduling and Budgeting

Communications

Meetings

Presentations\*

Reports (Technical Writing)

*\* Satisfies the FSU OCCR requirement*

1. Provide students an opportunity to carry out a significant design project being sponsored by industry or other faculty, so that they are directly exposed to the product design cycle in the context of a project organization. [3, 4, 5]
2. Have the students work in teams in order to accomplish the design project objectives. Through coordination with other departments, some teams will be multi-disciplinary in nature. Teach fundamentals of team dynamics and interpersonal skills. [4, 5, 6]
3. Emphasize and review the importance of technical communications as permeating every aspect of the design process as well as every aspect of an engineer's career. Cover techniques for effective writing and conduct specialized session for writing different types of documents: letters and memos, e-mails, resumes, proposals, feasibility studies, specifications, calculations, user manuals, web pages, final reports, etc. [7]
4. Teach techniques to conduct effective technical and business meetings. [4, 7]
5. Coach students (through in-class lectures and staff meetings) to become effective presenters.\* [4, 7]
6. Train the students in basic skills of project management and control, such as preparing work breakdown structures (WBS), design package definition, scheduling, budgeting, etc. Present management techniques to keep projects on track, and team members on a highly motivated state. [4, 5, 7, 10]
7. Expose students to best practices in detailed design, including how to conduct and prepare engineering calculations (drawing from a variety of disciplines learned during the course of their education), how to prepare design and manufacturing drawings, and how to pull together a complete design package. [5, 6, 8, 10]
8. Have student’s complete implementation and testing of a working model or prototype of the system they designed (product delivery). [2, 3]
9. Through teamwork and project flow, encourage students to become effective time managers and to develop the aggressive and winning attitude needed to succeed in the professional world. [4, 5, 9]

**Course Outcomes**

At the end of the course, a student should have the ability to:

1. Elicit customer needs, and translating these into an engineering specification. [1]
2. Function in a team environment, taking on management responsibilities when needed, and supporting the team effort when required, actively participate in technical meetings [2]
3. Produce high-quality written documents. [3]
4. Conduct effective meetings within the group and with the project sponsors. [4]
5. Demonstrate effective presentation skills through various design reviews\* and a final design presentation\*. [5]
6. Prepare a project plan: work breakdown structure, design packages, and schedule, and organize the team for maximum performance. [6]
7. Prepare a Design Criteria Document, including identification of all applicable standards. [6]
8. Conduct the necessary research and engage in creative design so as to generate multiple concepts to fulfill the required functionality. Be able to down-select to a best concept thus arriving at desired product architecture. [7]
9. Produce engineering calculations in support of the design. [7]
10. Generate design and manufacturing drawings to describe the system. [7]
11. Manufacture parts and assemble system or prototype for the product under consideration. [8]
12. Demonstrate capability to operate under sometimes shifting requirements and under severe time pressure. [9]
13. Be an effective team members and managers, in summary, to demonstrate they are ready to transition to industry and be impact players. [9]

**Course Content**

**EML 4551- 4552 is 100% project based, 3 + 3 Units (Fall / Spring)**

Very few formal lectures

Completely team-based

No tests or homework, only project work

Requires Senior in good standing (No more than a single D in the core\*\* ME courses)

**Must have C- or better on individual presentations in both semesters to graduate (OCCR)**

**Course Mechanics**

* One-on-one meetings with teams (see calendar)
* Major design reviews (graded, see calendar)
* Lectures – Very few (team building, etc.), Computer Lab (scheduling software)
* Meetings with “Customers” (“Sponsors”) as needed
* Office hours (specific problems and discussion)
* BB will be an integral part of the class
  + Posted information: grading and attendance policies, announcements, etc.)
  + Progress tracking: attendance, grades, etc.
  + Notes
  + Calendar (schedules, deadlines, etc.)
  + Groupware (chat, bulletin boards, etc.)

**Eligibility to enroll in senior design project**

The senior design project course is intended as a capstone experience for graduating seniors. All students enrolled in the class should be seniors in good standing ready to graduate at the conclusion of the academic year/project. Therefore, any student having more than one (1) D grade on any of the core Mechanical Engineering courses\*\* at the beginning of the senior design project will be DROPPED from the course. If you do not meet this requirement, please refrain from signing up for project assignment as you will be dropped from the course after we complete a review of transcripts.

\*\* Core Mechanical Engineering courses are: ME Tools, Introduction to ME, Mat. Sci. & Eng., Mech. & Mats. I and II, Dynamic Systems I and II, Mechanical Systems I and II, Thermo-fluids I and II, and Thermo-fluids Lab.

Due to the limited opportunities to retake upper level senior design prerequisite courses coupled to the fact that senior design can only be started in the fall semester, the ME department will make the following exceptions to the course prerequisites for students who can demonstrate that they can graduate in a timely fashion without being overloaded in the semesters in which they are taking senior design. Note that if a student has un-passed area streams, then student’s choice of project may be limited.

Prerequisites: 4 of EML4550, EML3012C, EML3014C, EML3016C, EML3018C

A student who has not satisfied the prerequisite requirement above may (at the discretion of the instructor) be allowed to enroll in senior design if that student has passed 3 of the 5 prerequisite courses, and earned a ‘D’ in one the other two courses.

If a student has not passed EML4550 on entering senior design, then that student must enroll in EML4550 in the fall semester.

All students entering senior design needing to take any of the 5 prerequisite courses will need to demonstrate that they can complete the senior design year without being overloaded.

**Course Schedule – Fall 2015**(Tentative)

|  |  |  |
| --- | --- | --- |
| **Schedule** | **Tuesday** | **Thursday** |
| Week 1  (August 24 to 30) | **Lecture**  Roll call, overview of Class details & dynamics,  Senior Design Projects list. | **Lecture**  SD Projects list updates, and overview  **Q/ A**  Discussion of Code of ethics as related to ice breaking exercise Q &A  Brief over view of oral communications |
| Week 2  (August 31 to September 6) | **Lecture**  Final project assignments and teams leaders selection  Work on ice breaking exercise/ project | **Lecture**  Oral Communications lecture and reading assignments  Work on Ice breaking projects presentations  And report |
| Week 3  September 7- 13) | **Lecture**  Ice breaking exercise/ project selected presentations  But Reports by all | **Project work**  Teams contact with Sponsor and mentor to establish Needs/ Project Scope (Travel, phone, or conference call)  **Code of Conduct Report due by Friday 5 PM** |
| Week 4  September 14- 20) | **Staff meeting\***  Update on contact with Sponsor, Mentor and initial project understanding of needs assessment  Work on individual projects  Work on Needs Assessment Reports | **Staff meeting\***  Update on contact with Sponsor, Mentor and initial project understanding of needs assessment  Work on individual projects  Work on needs Assessment Reports |
| Week 5  (September 21- 27 | **Lecture**  Report Writing  Project plans and product spec and Team building- time management | Work on Project  **ALL TEAMS:** Needs Assessment Draft Reports due Friday (tomorrow) by 5PM |
| Week 6  (September 28- October 4) | **Staff meeting\***  Project plans and product spec discussion  Work on individual projects | **Staff Meeting\***  Project plans and product spec discussion  Work on individual projects  Biweekly report due at meeting  **ALL TEAMS:** Revised Code of Conduct due Friday (tomorrow) by 6PM |
| Week 7  (October 5- 11) | Guest Lecture By Dr. Michael Devine  **Lecture**  (Project Plans and Product Specs.,  Midterm I) | Guest Lecture TBD  **ALL TEAMS:** Project Plans and Product Specs Draft Report due by Friday (tomorrow) 5 PM |
| Week 8  (October 12- 18) | Work on Project | Work on Project  **ALL TEAMS Due Today:** Initial Web Page Design |
| Week 9  (October 19- 25) | Midterm Presentation I  Conceptual Design  (Selected members of each team) | Midterm Presentation I  Conceptual Design  (Selected members of each team) |
| Week 10  (October 26- Nov. 1) | **Lecture**  Deliverables requirements and Communication skills  Feedback on Mid Term Presentations and reports  **Due Today**: All Peer Evaluation Reports for Tuesday and Thursdays teams | **Staff meeting\***  Feedback on Mid Term Presentations and reports  Midterm 1 Report due Friday by 5 PM from all teams |
| Week 11  (Nov. 2-8) | **Staff meeting\***  Feedback on Mid Term Presentations and reports | Dry Preparation for MEAC –  Work on projects if not involved in MEAC presentations |
| Week 12  (November 9- 15) | **Work on Project** | Work on Project  Selected Presentations to MEAC Fall Meeting |
| Week 13  (Nov. 16- 22) | **Midterm Presentation II†**  Interim Design Review  (Different selected team members than those that presented Midterm Presentation I)  Biweekly report | **Midterm Presentation II†**  Interim Design Review  (Different selected team members than those that presented Midterm Presentation I)  Biweekly report |
| Week 14  Nov. 23- 29) | **Staff Meeting\***  Updates on bill of material, work orders, machining, etc.  **Due Today**: All Peer Evaluation Reports for Tuesday and Thursdays teams  AND  Final Web Page Design | Thanksgiving |
| Week 15  (Nov. 30- Dec. 6) | **Staff Meeting\***  (For the Thursday group)  Updates on bill of material, work orders, machining, etc. | **Final design Poster Presentation†**  (meet for regularly scheduled lecture at 2PM) |
| Week 16  (Dec. 7- 13) | Final report due Monday from all by 5PM  Final grades | Final grades |

**\* Biweekly report due at meeting**

**Course Schedule – Spring 2016 (may be revised later):**

|  |  |  |
| --- | --- | --- |
| **Schedule** | **Tuesday** | **Thursday** |
| Week 1  1/4-1/8 | No Class  (University opens on Jan 6) | Lecture  Discussion on syllabus and deliverables |
| Week 2  1/11-1/15 | TBD | TBD  (Due Friday 4pm: Restated Project Definition and Scope/Project Plan) |
| Week 3  1/18-1/22 | Presentation:  Updates on the project progress in Fall semester | Presentation:  Updates on the project progress in Fall semester  (Due Friday 4pm: Team evaluation report 1) |
| Week 4  1/25-1/29 | Staff Meeting♪ | Staff Meeting♪ |
| Week 5  2/1-2/5 | No Class | Presentation:  Report formatting and future reports.  (Due Friday: Web Page updated, see blackboard for more information) |
| Week 6  2/8-2/12 | **TBD** | **TBD** |
| Week 7  2/15-2/19 | **Midterm Presentation:**†  **Design Review #1: Progress**  **(Selected members of each team)** | **Midterm Presentation:**†  **Design Review #1: Progress**  **(Selected members of each team)**  (Due Friday 4pm: Team evaluation report 2) |
| Week 8  2/22-2/26 | Staff meeting♪:  Feedback on Midterm presentations and project update | Staff meeting♪:  Feedback on Midterm presentations and project update |
| Week 9  2/29-3/4 | **No Class** | **No Class**  (Due Friday 4pm: Mini-poster) |
| Week 10  3/7-3/11 | Spring Break | Spring Break |
| Week 11  3/14-3/18 | **Midterm Presentation:**†  **Design Review #2: Interim**  (Team members who didn’t present in Design Review #1) | **Midterm Presentation:**†  **Design Review #2: Interim**  (Team members who didn’t present in Design Review #1)  (Due Friday 4pm: Team evaluation report 3) |
| Week 12  3/21-3/25 | Staff meeting♪ | Staff meeting♪ |
| Week 13  3/28-4/1 | No Class | (Due Friday 4pm:   * Operational Manual * Report: Design report for Manufacturing/Reliability and Economic) |
| Week 14  4/4-4/8 | **Design Review #2**†  **(Walk‐through Presentation and Live Demos)** | **No Class**  (Due Friday 4pm: FINAL Project Report to faculty, Sponsors, and Coordinator, Updated Webpage) |
| Week 15  4/11-4/15 | Preparation for open house and prototype demonstration | **OPEN HOUSE (MEAC, judges)**†  **Final Presentations**  (Due Friday: Team evaluation report 4) |
| Week 16  4/18-4/22 | Final Staff Meeting♪  (Engineering Design Methods poster presentation mandatory attendance TBD) | Final Staff Meeting♪ |
| Week 17  4/25-5/29 | Final Exam week | Final exam week |

† OCCR Presentations

♪ During staff meeting teams are supposed to come with staff meeting report.

**Guidelines**

* Learn by DOING
* TEAMWORK!
* **ALL** of the grades are “Project-Based”: Organization, Neatness, Quantity and Quality, On-Time Performance, Reporting and Presentation. The project grade earned by the TEAM is then multiplied by individual factors (teamwork, absences, participation in presentations, etc.)
* Meeting times (T & Th) will be used to:
  + Conduct some lectures (very few)
  + Team presentations
  + One-on-one staff meetings with teams (by schedule)
  + Guest lecturers
* “Meetings” with Project Supervisors/ Customer
  + Schedule your visits
  + Record on your log sheet/book your discussion and suggestions

**Attendance**

* Attendance is MANDATORY to all lectures, design reviews, and team meetings.
* Attendance will be taken at random in lectures and design reviews, attendance to staff meetings will be noted. All those not achieving high attendance rate (many absences or tardiness, missed meetings, etc.) will receive a low “Attendance Factor” as determined by the instructor and the grade will be proportionally reduced (see grading policy)

**Grades**

* Done by Sponsor, Peers, Instructor, Coordinator, Advisor, and panel of judges along with:
  + Teamwork
  + Quality of deliverables (design reviews, presentations, and written reports)
* Professional conduct
* Quality of writing/organization
  + Project organization
* Quality of project plan
* Ability to stay on schedule
  + Customer satisfaction
* Final product
* Grades will be assigned separately for the Fall and Spring

**Grading Breakdown:**

**Fall 2015**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Oral Presentation | Scoring weight | Reports | Scoring weight | Other Assessments | Scoring weight |
| Ice Breaking Project  Teams  Individuals | (Combined with midterm presentations) | Code of Conduct Report & Ice breaking project | 5  5 | Peers  Team Evaluation | 3 |
|  |  | Project Needs Assessment/ Scope | 5 | Web page | 5 |
|  |  | Project Plans/ Product Specs | 5 | Instructor Overall Evaluation of Team work, staff meetings, etc. | 12 |
| Mid- term I Presentations: Conceptual design  Team  **Individual** | 7  **6**† | Mid- term I  Conceptual design | 10 |  |  |
| Midterm II Presentation: Interim Design Review  Team  **Individual** | 7  **6**† | Environmental and safety issues and ethics  (Interim Design Report) | 2 |  |  |
| Final Presentation Review  Team | 10 | Final Design report  All evaluators including advisor and instructor | 18 |  |  |

† **OCCR: Each student is required to present in only one of first two mid-term presentations. All team members must present in the final presentation.**

**Reminder:**

In order to fulfill FSU’s Oral Communication Competency Requirement, the student must earn a “C-” or better in the course, and in order to receive a “C-” or better in the course, the student must earn at least a “C-” on the oral communication competency component of the course. If the student does not earn a “C-” or better on the oral communication competency component of the course, the student will not earn an overall grade of “C-” or better in the course, regardless of how well the student performs in the remaining portion of the course.

**Spring 2016**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Oral Presentation | Scoring weight | Reports | Scoring weight | Other Assessments | Scoring weight |
| Project Update | 5 |  |  |  |  |
| Design Review #1  (Progress)- Team  **Individual** | 5  **6**† | Restated Scope/Plan | 5 | \*Staff Meetings Instructor/ Coordinator/Adviser Evaluation  Peer Team Evaluation | 10 |
| Design Review #2  (Interim)- Team  **Individual** | 5  **6**† | Operational Manual | 7 | Web page | 5 |
| Design Review #2  (Walk‐through  Presentation) Team | 5 | Design for  Manufacturing/ Reliability and  Economics | 7 | Final Project Completion  (Faculty adviser, Sponsor, Instructor, MEAC) | 5 |
| OPEN HOUSE Presentations – Team | 5 | FINAL Report  (Mentors, Sponsors, Instructors/ Coordinators, others) | 20 | Prototype  (MEAC,  Judges/ evaluators) | 10 |

† **OCCR: Each student is required to present in only one of first two design reviews. All team members must present in the Walk through and Open House presentations.**

**\* Adviser Evaluation: It is students/team responsibility to contact and invite their faculty adviser for each presentation and staff meeting. In case he/she can’t make it to the presentation/staff meeting, at least a day before or as early as possible he/she should contact the coordinator stating the acknowledgement of the invitation from the team and his/her unavailability to the presentation/staff meeting. Failing to do so can impact this grade section heavily.**

**Reminder:**

In order to fulfill FSU’s Oral Communication Competency Requirement, the student must earn a “C-” or better in the course, and in order to receive a “C-” or better in the course, the student must earn at least a “C-” on the oral communication competency component of the course. If the student does not earn a “C-” or better on the oral communication competency component of the course, the student will not earn an overall grade of “C-” or better in the course, regardless of how well the student performs in the remaining portion of the course.

**Grading Scheme**

* Most grades will be assigned on a team basis
* Team grade is earned during design reviews and on project deliverables (reports, final project)
* **There will be a substantial emphasis placed on PROEJCT COMPLETION and staying on schedule (both Fall and, especially, Spring) or it can attract ‘I’ grade (Incomplete)**
* Team grades will then be multiplied by an individual factor
* There will be a “teamwork factor” to shade individual grades, assigned by instructor based on one-on-one interviews with the team (teammates provide feedback on individual performance)
* There will be an attendance factor
* Customer input is also taken into account towards assigning a grade

**Individual vs. Team Grades**

* All project-based grade is earned by the TEAM
* Individual grade adjustment will be based on:
  + Team evaluation sheets (at least 4 during the year)
  + Team meetings/assessments with the Instructor (as needed)
  + One-on-one meetings with the Instructor (at least once a semester to assess team dynamics)

**OCCR:**

In order to fulfill FSU’s Oral Communication Competency Requirement, the student must earn a “C-” or better in the course, and in order to receive a “C-” or better in the course, the student must earn at least a “C-” on the oral communication competency component of the course. If the student does not earn a “C-” or better on the oral communication competency component of the course, the student will not earn an overall grade of “C-” or better in the course, regardless of how well the student performs in the remaining portion of the course.

OCCR assignments are indicated with † in the Course Schedule and Grading Breakdown above.

**Presentation Grades**

* All presentations will be assessed both by the overall team performance and individual performances during those presentations
* Individual performance grades will constitute the OCCR grades for the course
* A student must earn a C- or better in both semesters in the OCCR presentations

Individual presentation grade breakdown:

**Fall:**

One of

Midterm I Presentations: Conceptual design or

Midterm II Presentation: Interim Design Review 5

**Spring:**

One of

Design Review #1 (Progress)

Design Review #2 (Interim) 6

For the Fall Midterm I and II presentations, only half the group is expected to make each presentation.

**Grades**

Grades will be assigned as

90% and above A

80% to 89% B

70% to 79% C

60% to 69% D

Less than 60% F

**Conclusion**

Although very different and demanding in nature from what you are used to in terms of content and lack of homework/tests, teamwork, focus, initiative, and self- motivation will help allot.

**COURSE POLICIES:**

**Attendance Policy:**

***Excused Absences:*** Excused absences include documented illness, deaths in the family and other documented crises, call to active military duty or jury duty, religious holy days, and official University activities. These absences will be accommodated in a way that does not arbitrarily penalize students who have a valid excuse. Consideration will also be given to students whose dependent children experience serious illness.

Please note that the College of Engineering has a restrictive interpretation of what is considered a valid excuse for an absence. See: <http://www.eng.fsu.edu/current/undergraduate/guide.html>. If an absence is to be excused, make sure you check beforehand. In case of excused absence, the instructor will work with you to help you make up for missed time and catch up.

A make-up examination may be granted to students with a valid excused absence. However, you must notify the instructor in advance if your absence involves a planned event or observance of a religious holy day. If an emergency prevents you from attending a scheduled examination, you must notify the instructor at your earliest opportunity. You must obtain a valid excused absence for the emergency to be eligible for a make-up examination. Students with a valid excused absence will not be arbitrarily penalized for missing an assignment.

***Unexcused Absences:*** A student having more than four unexcused absences will be dropped from the course and assigned the grade F. Tests and exams missed because of unexcused absence receive the grade 0. Other projects and activities missed completely receive the grade 0 for those projects or activities. Students without a valid excused absence are not entitled to a make-up examination. However, certain class assignments may be accepted late, with penalty, without a valid excused absence

**Instructional Method(s)**

The primary instructional method is a traditional in-class lecture. There will also be extensive use of the Blackboard web delivery system for distribution of course assignments and other materials. Course materials available from the textbook publisher may also be used. The use of online instructional techniques will be introduced.

**Other Regulations**

Note that the penalties for copying work may result in a failing grade for the course. If you are uncertain, please check with the instructor who assigned the work. Working together is encouraged in this course, but blatant copying is not.

**College of Engineering Undergraduate Policy:**

It is the policy of the College not to assign “plus and minus (+/-)” grades for undergraduate engineering courses. [http://www.eng.fsu.edu/current/undergraduate/guide.html](http://www.eng.fsu.edu/current/undergraduate/guide.htmln), see Grading Policies

**Departmental Policy:**

A student may continue in the B.S. in ME degree program unless one or more of the following conditions arise;

* 1. A grade below C in the second attempt of the same engineering course <http://www.eng.fsu.edu/me/resources/pdf/ME_Prerequisite_Policy.pdf>
  2. More than three (3) repeat attempts in engineering courses. <http://www.eng.fsu.edu/me/resources/pdf/ME_Excessive_Repeat_Policy.pdf>
  3. Violation of academic honor code as defined in university bulletin or catalog
  4. Use of grade forgiveness (currently available for FAMU students only) in more than two (2) courses.

**DEPARTMENTAL STUDENT OUTCOMES**

The department's student outcomes can be found at <http://www.eng.fsu.edu/me/undergrad/ed_objective.html>.

**Program Outcomes/Student Learning Outcomes**

Student learning outcomes for students majoring in engineering may be found at <http://www.eng.fsu.edu/outcomes>

**Location of Academic Learning Compacts**

ME: <http://www.eng.fsu.edu/about/accreditation/program_outcome.html?ID=217&agency=ALC>

FSU: <http://learningforlife.fsu.edu/smalcs/learningCompact.cfm?smalcId=57339>

**ACADEMIC HONOR POLICY**

Students are expected to uphold the University Student Code of Conduct and/or University Academic Honor Code

Florida A&M Student Code of Conduct - Regulation 2.012 <http://www.famu.edu/index.cfm?judicialAffairs&StudentCodeofConduct>

The Florida State University Academic Honor Policy outlines the University’s expectations for the integrity of students’ academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. Students are responsible for reading the Academic Honor Policy and for living up to their pledge to “. . . be honest and truthful and . . . [to] strive for personal and institutional integrity at Florida State University.” (Florida State University Academic Honor Policy, found at <http://fda.fsu.edu/Academics/Academic-Honor-Policy>.

**AMERICANS WITH DISABILITIES ACT**

During the first week of class students with disabilities needing academic accommodation should:

1. Register with and provide documentation to the **LDEC** or **SDRC**; and
2. Bring a letter to the instructor indicating the need for accommodation and what type.

For more information about services available to FAMU students with disabilities, contact

**The Learning Development and Evaluation Center (LDEC)**

677 Ardelia Court

Campus

Nathaniel Holmes, Director

Donna Shell, Asst. Director

599-3180 (phone)

561-2512 (fax)

561-2783 (TDD)

<http://www.famu.edu/index.cfm?a=EOP&p=ADA>

For more information about services available to FSU students with disabilities, contact the:

**Student Disability Resource Center (SDRC)**   
874 Traditions Way  
108 Student Services Building  
Florida State University  
Tallahassee, FL 32306-4167  
(850) 644-9566 (voice)   
(850) 644-8504 (TDD)   
[sdrc@admin.fsu.edu](mailto:sdrc@admin.fsu.edu)  
<http://www.disabilitycenter.fsu.edu/>

(This syllabus and other class materials are available in alternative format upon request.)

**UNIVERSITY’S NON-DISCRIMINATION POLICY STATEMENT**

FAMU: <http://www.famu.edu/index.cfm?EOP&NON-DISCRIMINATIONPOLICYSTATEMENT>

FSU: <http://www.hr.fsu.edu/PDF/Publications/diversity/EEO_Statement.pdf>

**SYLLABUS CHANGE POLICY:**

Except for changes that substantially affect implementation of the evaluation (grading) statement, this syllabus is a guide for the course and is subject to change with advanced notice.