

University of Portland
Donald P. Shiley School of Engineering
ME 481 – Mechanical Engineering Project I
Fall Semester, 2012

Course Instructor: Kenneth E. Lulay, Ph.D., P.E.
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Office Hours: Monday: 11:25-12:00, Tuesday: 10:00-12:00, Wednesday: 12:30-1:25, Thursday: none scheduled, Friday: 11:25-12:20
And whenever I am free in my office.

Course Description: Senior project includes literature search, engineering analysis, and written and oral presentations. Construction of prototypes and group projects are encouraged.

Number of Credits: 2

Prerequisites: Senior Standing

Textbook: None, significant documents and schedule are posted on the course web page.

Communication: Students are required to check their University e-mail regularly for course related messages.

Course Times: F 2:40-5:40 (as scheduled below).

Tentative **Class Schedule** (see “Project Due Dates” sheet project due dates):

| Date | Attendance is mandatory. |
|-------------|---|
| Aug 31 | Project and course introduction, discuss deliverables due next week (and for whole project). |
| Sept 7 | Project planning (schedules, prototyping, engineering standards), and Super-Groups meet with Faculty Advisors |
| Sept 14 | Literature search – how to, etc. BRING laptop, iPad, or other portable device if you have one. |
| Sept 21 | Shop training |
| Sept 28 | Guest Speaker (Graduate School) |
| Oct 5 | Professional Issues Exam |
| Oct 12 | Engineering standards, drawing standards |
| Oct 26 | Super-Groups |
| Nov 2 | ME Comprehensive Exam |
| Nov 9 | Guest Speaker |
| Nov 16 | Super-Groups |
| Nov 30 | Discuss peer evaluations and oral presentation requirements, conduct course/instructor evaluations |
| Dec 7 | Oral Presentations |

Due Dates for submitted work. You WILL NOT BE REMINDED of these as they approach – students are expected to keep track of them themselves! See other handouts for descriptions of items due.

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| Aug 31 | Submit the charter |
| Sep 14 | Submit the pre-plan memo. Contact Industrial Advisors, thanking them for agreeing to help and also discuss your project deliverables (cc all other stakeholders). |
| Sep 28 | Submit Project Plan to faculty (faculty advisor and course instructor) |
| ~Oct 5 | Project Plan sent to Industrial Advisor (after faculty approval or after 1 week) |
| <Oct 5 | Meet with Industrial Advisors prior to October 5 |
| Oct 5 | Professional issues exam (in class) |
| Oct 12 | Submit the agenda and meeting notes from the industrial advisor meeting |
| Oct 26 | Submit Prototype Demonstration Memo to faculty and industrial advisor |
| Oct 26 | Super group meeting to discuss prototype demonstration and other progress (in class) |
| Nov 2 | ME Comp Exam (in class) |
| <Nov 9 | Invite Industrial Advisor (cc instructor on the email) to final oral presentation and provide them a blank Industrial Advisor feedback form before Nov 9. |
| Nov 16 | Super group meeting to discuss progress to date and plans for ME482 (in class) |
| <Nov 30 | Optional Design Review Meeting with Industrial Advisors by Nov 30 |
| Nov 30 | Submit the first semester progress memo, oral presentations to class |
| Dec 7 | Submission of peer evaluations, oral reports to class (hardcopy to instructor, advisors) |
| Dec 7 | Formal oral reports to class (hardcopy to instructor, advisors) |

Weekly email updates due each Friday

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| Grading: | Technical quality of project | 45% |
| | Quality of deliverables (report writing, etc.) | 25% |
| | Administrative details (meeting deadlines, etc.) | 20% |
| | ME Comprehensive Exam | 5% |
| | Professional Issues Exam | 5% |
| | “Detractors” | up to -100% |

“Detractors” In addition to the specified graded items, failure to adequately contribute to the team’s efforts or failure to complete other course requirements by their specified deadlines will detract from the overall course grade. These include the Project Charter, weekly email updates to all stakeholders and responses to their comments, attendance, and laboratory etiquette (keep things clean, return things borrowed, etc.).

References: Scholarly work, such as project reports, MUST contain high quality references. Each project *must* include properly cited reputable books and journals. It is not acceptable to base engineering decisions on web based references; exceptions include product literature and specifications and on-line books, journals and conference proceedings, and competitions rules.

Since lack of quality references undermines the legitimacy of a technical document.

Mechanical Engineering Comprehensive Examination:

Students receiving a score of 60% or higher will receive the full 5% score as shown above. Students receiving a score less than 60% will receive no points for the exam and they will have to meet with the appropriate faculty member(s) to discuss the low performance. The exam will be open book and open note.

Mechanical Engineering Professional Issues Examination:

Students receiving a score of 60% or higher will receive the full 5% score as shown above. Students receiving a score less than 60% will receive no points for the exam and they will have to meet with the appropriate faculty member(s) to discuss the low performance.

The University of Portland, School of Engineering has 12 Program Outcomes (see the University Bulletin for details). Amongst these is the following:

Students shall demonstrate an understanding of professional and ethical responsibility.

While this can be applied to complex situations, it has very real and direct meaning in this course. Students must demonstrate professional and ethical responsibility by:

- Properly citing references used in the proposals, reports, and oral presentations. This includes direct quotes, indirect use of information, and copies of photos, graphs or data. Always give credit where credit is due! For more information, see The School of Engineering's *Writing for Engineers* document.
- Showing proper respect for the School's laboratories, tools, equipment, etc.
 - Do not borrow something without first asking permission. This includes laboratories themselves, tools and equipment.
 - Do not use equipment or tools that you are unfamiliar with – this can lead to injury or damage. Training is mandatory.
 - If you use the laboratories, make sure they are clean when you are finished. Leave them in the same condition, or better, than you found them in.
 - If you break or lose something, inform the appropriate faculty or staff.
- Always conduct yourself professionally, respectfully, and honorably.

Use of laboratories and workshops require written permission from the course instructor and mechanical technician prior to use.

The following are guidelines that will be followed when assigning course grade:

A grade: Excellent work performance – all deadlines met, all work of professional quality. Scope of project and technical work was appropriate or excessive for the course credit. All aspects of the design process completed successfully. Communication was clear, well-organized, lacking grammatical errors.

B grade: Very good work performance – deadlines consistently met, all work of near professional quality. Scope of project and technical work was appropriate for the course credit. Most aspects of the design process completed successfully. Communication was clear, well-organized, lacking significant grammatical errors.

C grade: Acceptable work performance – most deadlines met, all work of good quality. Scope of project and technical work was appropriate for the course credit. Many aspects of the design process completed successfully. Communication was relatively clear, organized, lacking numerous significant grammatical errors.

D grade: Poor work performance such as: missed several deadlines, work of low quality; scope of project and technical work was inadequate for the course credit; design process not executed very well; communication was poor with many grammatical errors.

F grade: Inadequate work performance. Scope and/or quality of project and technical work was inappropriate for a 2-credit course.

Honors Students: In the spring semester, as part of ME482, every honors student must prepare an individual paper based on his/her senior design project or a directed research project to be submitted to Dr. Orr. Students should consult with Dr. Orr regarding the requirements for that paper. A copy of the paper must also be submitted to the instructor by the last day of classes. This is an individual (not team) paper separate from the reports due in ME482.

University of Portland's Code of Academic Integrity

Academic integrity is openness and honesty in all scholarly endeavors. The University of Portland is a scholarly community dedicated to the discovery, investigation, and dissemination of truth, and to the development of the whole person. Membership in this community is a privilege, requiring each person to practice academic integrity at its highest level, while expecting and promoting the same in others. Breaches of academic integrity will not be tolerated and will be addressed by the community with all due gravity. (Taken from the University of Portland's Code of Academic Integrity.)

The complete code may be found in the University of Portland Student Handbook and as well the Guidelines for Implementation. It is each student's responsibility to inform him or herself of the code and guidelines.

Assessment Disclosure Statement

Student work products for this course may be used by the University for educational quality assurance purposes.

Accommodation for Disability & Emergency Information

If you have a disability and require an accommodation to fully participate in this class, contact the Office for Students with Disability, located in the University Health Center (503-943-7134), as soon as possible.