MECH 328 2016W

Course Syllabus

The course provides students working in teams with an experience applying and expanding the design process introduced in Mech 223 to an open-ended design project, wherein the students experience application of engineering science analysis learned in other courses in a project context. This course expands and further explores the critical early stages of the design process including proper identification and assessment of the needs of stakeholders, the forming and handling of requirements and identification of appropriate evaluation criteria. Students are able to experience management of a project including defining and controlling the scope, handling risk, management of timelines and management of development resources in addition to performing engineering analyses in the development of a design.

Credits: 3

Co-requisites: MECH 325 and one of MECH 326, MECH 327.

Course Dates: Sep 7, 2016 to Dec. 2, 2016

Course Objectives

Upon completion of MECH 328, students will have:

* demonstrated addressing and controlling the scope of an open-ended project by clearly defining the needs of the stakeholders and setting requirements that meet the needs;
* demonstrated successfully developing a well justified solution that meets the established requirements using appropriate analyses;
* demonstrated appropriate implementations of engineering analysis, particularly from MECH 325 and MECH 326 or MECH 327 in the context of the development and rationalization of a design;
* demonstrated effective technical and professional communication skills through correspondence, logbook entries, oral presentations, formal reports, drawings and other documents;
* worked effectively in a group and develop strategies for dealing with conflicts imposed by the constraints on the project;
* demonstrated description in detail of the requirements for a successful execution of an engineering design project and demonstrated competence in applying the methods presented in the course;
* demonstrated the roles and responsibilities of an engineer working on a design project;

Course Structure

Classroom activities (lectures, guest speakers, in-class exercises) are scheduled for Fridays 11:00 – 13:00

Designated laboratory times are scheduled for Mondays and Wednesdays 11:00 - 13:00. These sessions are times for project team work and weekly project meetings with a TA and instructor. All students are expected to regularly attend and contribute to team work in these sessions. Meeting schedules and locations will be posted on Connect. Out of the four lab hours, only one is scheduled with the instructor and TA, taking place as posted on the schedule posted on Connect; the other three hours have no designated agenda or location however the students are expected to use this time to work on their 328 project.

Time commitment: students can expect to spend an average of 8 hours per week on this course with the majority of the time dedicated to project work.

Assessment

Assessments will be based on a mixture of group and individual work with total available marks summing to 100.

Group Work: Mark Allocation

Concept Selection Review 10

Oral Presentation 10

Weekly Reports 10

Project Report 40

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Group Work Total 70

Refer to posted information for details on each assignment and for details on assessment rubrics.

Each individual’s contribution to the group’s effort will be assessed based on peer review from team mates and via the TA’s and instructor’s assessments of identified student work (sections of the concept selection review, oral presentation and final report sections prepared by the student) logbook content and contributions to weekly meetings.

There will be multiple times when peer reviews will be held. Four iPeer sessions will involve students assessing and giving feedback to team mates.

The scores from these sessions will be averaged and used to determine a multiplier (contribution multiplier) applied to the group work total to determine each individual’s mark for group work.

In addition, iPeer will be used for students to provide confidential comment on the performance of their team members to the instructing team (only the instructors and teaching assistants will review the comments).

**Instructors reserve the right to adjust the contribution multiplier for individual students based on their contribution to the team’s effort throughout the project**.

Individual Work: Mark Allocation

Log Book 5

Oral Presentation Feedback 5

iPeer Participation and Feedback 5

Final Exam 15

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Individual Work Total 30

Each student must submit a personal logbook for the course. The book will be assessed and returned to the student. Guidelines will be posted on Connect.

Each student must attend, grade and give feedback on all oral presentations of the other teams in his/her section. The mark for Oral Presentation Feedback is based on the quality of the grading and feedback provided by the student.

The student’s participation in iPeer and quality of feedback to peers and instructors will be assessed.

The final exam is a 60 minute exam covering lecture and tutorial content and contains long-answer project-related questions of a general nature that any team member actively involved in the project should be able to answer. A passing mark in the course is not contingent on passing the final exam.

Total Mark = (contribution multiplier) x (Group Work Total) + Individual Work Total

Statement on Academic Integrity

The academic enterprise is founded on honesty, civility, and integrity. As members of this enterprise, all students are expected to know, understand, and follow the codes of conduct regarding academic integrity. At the most basic level, this means submitting only original work done by you and acknowledging all sources of information or ideas and attributing them to others as required. This also means you should not cheat, copy, or mislead others about what is your work. Violations of academic integrity (i.e., misconduct) lead to the breakdown of the academic enterprise, and therefore serious consequences arise and harsh sanctions are imposed. For example, incidences of plagiarism or cheating may result in a mark of zero on the assignment or exam and more serious consequences may apply if the matter is referred to the President’s Advisory Committee on Student Discipline. Careful records are kept in order to monitor and prevent recurrences.

For details, please see this link to the relevant Calendar section: <http://www.calendar.ubc.ca/vancouver/index.cfm?tree=3,286,0,0>