

# ENGG 3100 Engineering and Design III

## Winter 2008

### 1 Course description

---

This course combines the knowledge gained in the advanced engineering and basic science courses with the design skills taught in ENGG\*1100 and ENGG\*2100 in solving open-ended problems. These problems are related to the student's major. Additional design tools are presented, including model simulation, sensitivity analysis, linear programming, knowledge-based systems and computer programming. Complementing these tools are discussions on writing and public speaking techniques, codes, safety issues, environmental assessment and professional management. These topics are taught with the consideration of available resources and cost.

### 2 Teaching staff

---

⇒ **Instructor:** Dr. Medhat Moussa, P.Eng

**Office:** 1339 Engineering Building

**Phone:** x53425

**E-mail:** mmoussa@uoguelph.ca

**Office Hours:** As needed by appointment

⇒ **Instructor** Dr. David Lubitz

**Office:** 214 Engineering Building

**Phone:** x54387

**E-mail:** wlubitz@uoguelph.ca

**Office Hours:** As needed by appointment

⇒ **Teaching Assistant** Antony Savich, asavich@uoguelph.ca

Amanda Farquharson, aportela@uoguelph.ca

### 3 Electronic Communication

---

→ Course web site: <http://courselink.uoguelph.ca/>

→ Course bboard: part of the courselink/blackboard package is a course bulletin board. Please post all questions related to the course on this bulletin board. Confidential questions related to marks and any other concerns should be e-mailed directly to instructors.

→ Project /team bulletin board: Also part of the courselink/blackboard is a team bulletin board where you could communicate with your fellow team members

→ course calender will be used to post various due dates and meeting schedules.

## 4 Course Format and Organizational Details

---

This course is a project-oriented course, involving regular consultations with instructors and teaching assistants. The tutorial slots will be used to meet the instructors and TAs on a weekly basis. Lectures slots will also occasionally be used for design reviews or presentations. If there are any changes to this schedule, changes will be posted on the web site beforehand.

**Lectures:** LA 204 MWF 12:30-1:20

**Labs:** Tu 2:30-4:20, W 9:30-11:20, W 2:30-4:20

**Course web site:** <http://courselink.uoguelph.ca/>

⇒ **Textbook:**

There is no textbook for this course. However, it is recommended that students refer to the following text purchased for ENGG1100:

1. Andrews, G.C. and Ratz, H.C. 1995, Introduction to Professional Engineering, 5th Ed., Waterloo, ON, Sanford Educational Press, 286p.

## 5 Method of Evaluation

---

Successful completion of ENGG3100 requires satisfactory performance in mandatory group and team components. Team components consist of group meetings with TA and faculty member, group oral presentations, and completing design projects. Regular faculty and TA appointments with the groups will be scheduled once the group makeup has been decided. The instructors will allow the students to compose their teams and only assign those students that are not able to find their own groups. The breakdown of the marks (percentage) for ENGG3100 is as follows, with detail on how the grade is determined for each component:

⇒ **Projects (65%)**

Students must select a project and complete two design phases. The first is the preliminary design phase and the second is the detailed design phase. Students are required to work in groups of 3 students (Must share the same lab section). Groups of 4 students will be only allowed in exceptional cases. Students are required to select one project from the available list of projects and submit a satisfactory project proposal as outlined in class. The proposal will be graded Pass/Fail. A fail will require a resubmission of the proposal within 3 calendar days.

The preliminary design phase must include the following topics:

- analysis
- sketches/drawings
- calculations
- safety
- sensitivity
- environmental considerations
- synthesis

The final design will focus on the following topics:

- calculations and drawing
- costs
- safety
- specifications
- expected environmental impact
- user interface (if applicable)
- simulations (if applicable)
- synthesis
- sustainability (if applicable)
- Implementation (if applicable)
- Testing (if applicable)

The 65% is split evenly between both phases and is based on the reports submitted. Each report will be marked according to the information given in Project Report Grading Form (posted on course web site), with reference to the University of Guelph grading scheme as published in the Calendar. Since both projects are group efforts, a signed Group Participation Evaluation Form (see course web site) must be included with each report. This form distributes the marks among group members according to effort. If this form is not included in the report, the group submission will not be graded. In the event of disagreement among group members on distribution of effort, the instructors will act as arbitrators. Their decisions will be based on written submissions received from the group members.

⇒ **Professor-in-the-loop group meeting, design reviews, presentations and proceedings paper (35%)**

The presentation portion of the course has various components, consisting of the following:

- ⇒ Design review and presentation on the preliminary design.
- ⇒ You are required at the end of the term to write a two page paper that describes your project. All papers will be compiled in a proceeding and put in the library for future reference. You will have to submit two versions of the paper. The first will be reviewed by the proceedings editors and feedback provided to you. The second will be the one included in the proceedings.
- ⇒ Design review and presentation on the final design.
- ⇒ Weekly professor-in-the-loop group meetings

Groups are required to attend a weekly meeting with Instructors/Teaching Assistants. They will be asked to provide an up-to-date briefing of the status of their project. Additional specific deliverables for each meeting will be assigned beforehand. It is mandatory that all group members attend these meetings.

⇒ **Important due dates**

**Preliminary Projects due** Monday Feb. 15, 2008 @ 5 pm

**Final Projects due** Friday April 4, 2008 @ 5 pm

⇒ **Policy regarding late submissions and other academic considerations**

If you feel you have a conflict with a submission due date due to a Major Holy Day as defined by the University, you need to contact one of the instructors during the first two weeks of the semester to determine if academic consideration will be granted. Otherwise, any delay in submitting assignments, or project reports will be penalized by a 5% per day penalty during the first 5 days (including weekends). No deliverable will be accepted after 5 days delay.

⇒ **Academic misconduct**

All students are expected to abide by the University of Guelph and School of Engineering academic and professional ethical standards. Any suspicion of academic misconduct will be reported according to the University policy outlined in the undergraduate calendar and this link

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml>