

# ENGG\*3100 Engineering and Design III, W12

## SCHOOL OF ENGINEERING, UNIVERSITY OF GUELPH

### 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.

### INSTRUCTORS

Dr. Ryan Clemmer, THRN 1337, ext. 52132, [rclemmer@uoguelph.ca](mailto:rclemmer@uoguelph.ca)  
Office Hours: As needed by appointment

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### TEACHING ASSISTANTS

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### LIBRARY RESEARCH & WRITING CONSULTANTS

Peggy A. Pritchard, McLaughlin Library, LIB Rm: 279, [ppritcha@uoguelph.ca](mailto:ppritcha@uoguelph.ca)  
Margaret Hundleby, McLaughlin Library, LIB Rm: 120H, [hundleby@uoguelph.ca](mailto:hundleby@uoguelph.ca)

### COURSE RESOURCES

Lectures: MWF, 10:30AM - 11:20AM, MCLN 102 or THRN (see page 3)  
Lab Session **A**: ENGG\*3100\*0101, Mon 03:30PM - 05:20PM THRN, Room 1435  
Lab Session **B**: ENGG\*3100\*0102, Tues 01:00PM - 02:50PM THRN, Room 1435  
Lab Session **C**: ENGG\*3100\*0103, Tues 03:30PM - 05:20PM THRN, Room 1435  
Lab Session **D**: ENGG\*3100\*0104, Thur 03:30PM - 05:20PM THRN, Room 1006

Course Website: <https://courselink.uoguelph.ca/shared/login/login.html>

## REQUIRED TEXTBOOK

Jane E. Aaron and Murray McArthur, The Little Brown Compact Handbook, Fourth Canadian Edition, Pearson Education Canada, ISBN-10: 0321633350  
ISBN-13: 9780321633354

## COURSE FORMAT

Successful completion of ENGG3100 requires satisfactory performance in both mandatory individual (e.g. quizzes) and group components. Students in each lab session will form teams of **THREE (3)** or **FOUR (4)** students and assume the identity of a consulting engineering firm hired by the School of Engineering, University of Guelph, to provide services on a chosen design project. (See course website for a list of project ideas).

## PROJECT PROPOSALS

Each group will submit a proposal that must include a description of the project, literature review, objectives, methodology, deliverables, and detailed weekly deliverables both electronically on the CourseLink “Dropbox” designated folder as well as in hard copy to the course instructor by **11:00 AM on Monday, January 23<sup>rd</sup>** (i.e. hard copy will be submitted during the lecture). This proposal is worth **15%** of the total final grade. Late submissions will have a penalty of **25%** per day. Project proposals will be presented to the class by all members of the team (worth **5%** of the total final grade), according to the following schedule:

Date	Proposal Presentation Schedule			
	MCLN 102	THRN 1435	THRN 1002	THRN 1006
Mon. Jan. 23 <sup>th</sup>	A1, A2, and A3	B1, B2, and B3	C1, C2, and C3	D1, D2, and D3
Wed. Jan. 25 <sup>th</sup>	A4, A5, and A6	B4, B5, and B6	C4, C5, and C6	D4, D5, and D6
Fri. Jan. 27 <sup>th</sup>	A7, A8, and A9	B7, B8, and B9	C7, C8, and C9	D7, D8, and D9
Mon. Jan. 30 <sup>th</sup>	A10, A11, & A12	B10, B11, & B12	C10, C11, & C12	D10, D11, & D12

All presentations must be posted as pdf files on the course website designated drop box a minimum 24 hours ahead of the lecture to allow the instructors to upload the presentations. Late submissions will receive a **50%** penalty.

## INTERIM TECHNICAL REPORT

Each group will submit an Interim Technical Report for feedback, both electronically on the CourseLink “Dropbox” designated folder as well as in hard copy to the course instructor (i.e. hard copy will be submitted during the lecture) by **11:00 AM on Monday February 13<sup>th</sup>**. The interim report is worth **10%** of the total final grade. Late submissions (without valid reasons approved by the instructor) will have a penalty of **25%** per day.

## TECHNICAL REPORT

Each group will submit a Technical Report both electronically on the CourseLink “Dropbox” designated folder as well as in hard copy to the course instructor by **11:00 AM on Monday, March 5<sup>th</sup>** (i.e. hard copy will be submitted during the lecture). The technical report is worth **20%** of the total final grade. Late submissions (without valid reasons approved by the instructor) will have a penalty of **25%** per day. Technical reports will be presented to the class by all members of the team, worth **5%** of the total final grade, according to the following schedule:

Date	Technical Report Presentation Schedule			
	MCLN 102	THRN 1435	THRN 1002	THRN 1006
Mon. March 5 <sup>th</sup>	A1, A2, and A3	B1, B2, and B3	C1, C2, and C3	D1, D2, and D3
Wed. March 7 <sup>th</sup>	A4, A5, and A6	B4, B5, and B6	C4, C5, and C6	D4, D5, and D6
Fri. March 9 <sup>th</sup>	A7, A8, and A9	B7, B8, and B9	C7, C8, and C9	D7, D8, and D9
Mon. March 12 <sup>th</sup>	A10, A11, & A12	B10, B11, & B12	C10, C11, & C12	D10, D11, & D12

All presentations must be posted as pdf files on the course website designated drop box a minimum 24 hours ahead of the lecture to allow the instructors to upload the presentations. Late submissions will receive a **50%** penalty.

## FINAL REPORT

Each group will submit a Final Report both electronically on the CourseLink “Dropbox” designated folder as well as in hard copy to the course instructor by **11:00 AM on Monday, March 26<sup>th</sup>** (i.e. hard copy will be submitted during the lecture). The final report is worth **20%** of the total final grade. Late submissions (without valid reasons approved by the instructor) will have a penalty of **25%** per day. Final reports will be presented to the class by all members of the team, worth **5%** of the total final grade, according to the following schedule:

Date	Final Report Presentation Schedule			
	MCLN 102	THRN 1435	THRN 1002	THRN 1006
Mon. March 26 <sup>th</sup>	A1, A2, and A3	B1, B2, and B3	C1, C2, and C3	D1, D2, and D3
Wed. March 28 <sup>th</sup>	A4, A5, and A6	B4, B5, and B6	C4, C5, and C6	D4, D5, and D6
Fri. March 30 <sup>th</sup>	A7, A8, and A9	B7, B8, and B9	C7, C8, and C9	D7, D8, and D9
Mon. April 2 <sup>nd</sup>	A10, A11, & A12	B10, B11, & B12	C10, C11, & C12	D10, D11, & D12

All presentations must be posted as pdf files on the course website designated drop box minimum 24 hours ahead of the lecture to allow the instructors to upload the presentations to the laptop ahead of the lecture. Late submissions will receive a **50%** penalty.

## SCHUDLE OF ACTIVITIES

<b>Week</b>	<b>Date</b>	<b>Lecture Topics</b>	
1	Jan. 9 to 13	Discuss Project Ideas	
2	Jan. 16 to 20	Writing a Successful Proposal	
3	Jan. 23 to 27	<b>Project Proposal and Presentation</b>	<b>20%</b>
4	Jan. 30 to Feb. 3	Writing Technical Reports & <b>Quiz 1</b>	5%
5	Feb. 6 to 10	Research Strategies & <b>Quiz 2</b>	5%
6	Feb. 13 to 17	Sensitivity Analysis & <b>Interim Technical Report</b>	<b>10%</b>
	Feb. 20 to 24	Winter Break	
7	Feb. 27 to Mar. 2	Optimization & <b>Quiz 3</b>	5%
8	Mar. 5 to 9	<b>Technical Report and Presentation</b>	<b>25%</b>
9	Mar. 12 to 16	Writing Final Reports	
10	Mar. 19 to 23	Cost Analysis	
11	Mar. 26 to 30	<b>Final Report and Presentation</b>	<b>25%</b>
12	Apr. 2 to 4	<b>Quiz 4</b>	5%

## EVALUATION

The final grade will be determined from the results of the Project Proposal, Technical Reports, Final Report, Project Presentations, and Quizzes associated with research and writing sessions weighted as follows:

- Project Proposal, 15%
- Project Proposal Presentation, 5%
- Four Quizzes, 20%
- Interim Technical Report, 10%
- Technical Report, 20%
- Technical Report Presentation, 5%
- Final Report, 20%
- Final Report Presentation, 5%

## PLEASE NOTE

The regulations concerning academic misconduct as outlined in the current University of Guelph undergraduate calendar will be strictly enforced.

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