MEMORIAL UNIVERSITY

Faculty of Engineering and Applied Science
Co-operative Education

FALL 2019
COURSE OUTLINE AND GUIDE – WORK TERM 5

CRITICAL DATES:

Monday, August 26, 2019	Fall Work Term Begins. Complete Work Term Confirmation online in MyMUNLife.
Friday, September 20, 2019	Deadline for submission of Work Term Objectives
Friday, October 18, 2019	Deadline for submission of Work Report/Presentation Outline. Complete online in MyMUNLife.
Friday, December 20, 2019	Fall Work Term ends and deadline for submission of the evaluation forms and communication component documents. Note: if mailing the forms/report, the postmark date will be recorded as the received date.
Monday, January 6, 2020	Academic courses begin for Winter Semester
Week of January 6, 2020	Oral Presentations. Students must be prepared to present at this time. Arrangements to be confirmed with your Academic Staff Member (ASM) – Co-operative Education.

STATEMENT OF EXPECTATIONS OF STUDENT CONDUCT

Like Professional Engineers, engineering students are expected to behave in a professional manner at all times. Students are encouraged to conduct themselves in a manner consistent with the PEG-NL code of ethics. MUN has two sets of rules to address inappropriate behaviour by students, one pertains to academic offences and the other to non-academic offences. Both sets of rules can be found in the University Calendar under Regulations. It is strongly recommended that students read and follow these rules because the penalties can be severe, the severest being expulsion from the University.

IMPORTANCE OF WORK TERM CONFIRMATION FORM

The Co-op Office depends on your Work Term Confirmation Form to confirm that you have arrived safely at work and for all means of contact while you are on your work term. It is **extremely important** that you complete this form online in MyMUNLife. If you have limited access to the internet, you may submit it via email or fax. Without it, we cannot enter your placement information in our database and you and your employer will be missed in the distribution of critical information. **Please see that this form is completed**

within a couple of days of starting work. If any of the information changes during the term, please notify your Academic Staff Member (ASM) – Co-operative Education.

USE OF THE INTERNET THROUGH ACCESS PROVIDED BY EMPLOYERS

As you are aware, many organizations provide Internet access to their employees as well as to their work term students. These organizations often have specific policies governing Internet usage, including policies for personal use. All aspects of Internet usage would normally be explained during your orientation to the job, typically during the first few days at work.

You may be required to sign statements in which you agree to follow the organization's policy in this area. It is particularly important to understand all clauses that you sign and agree to follow, as well as to fully understand their guidelines and procedures regarding personal use of the Internet. You can also expect that the employer will monitor your usage of the Internet over the duration of the work term.

If employers do not address this issue during initial orientation, we strongly suggest that you ask your supervisor for specific guidance.

If you have any questions or require additional information on this issue, please contact one of the ASMs.

COURSE DESCRIPTION: ENGINEERING 005W

Engineering Work Term 5 requires students to continue to engage in advanced facets of engineering. Participation in their selected engineering discipline is expected. Students should apply skills independently in engineering analysis, contribute to a safe work environment, and utilize engineering tools while understanding their limitations. They will contribute significantly to design and/or problem solving processes, and demonstrate project management and leadership abilities. The level of responsibility should be commensurate with their academic background and experience.

LEARNING OUTCOMES / SKILLS EXPECTATIONS

The learning outcomes for Work Term 5 (and 6) are identified below. These are skills that students are expected to develop throughout the work term, and will be evaluated at the end of the semester. The Work Term 5 (and 6) expectations for these skills are described. Note that the expectations to this point have generally increased with each work term.

Initiative: Take all appropriate and required action without prompting in completing assigned tasks or projects, and show motivation in pursuing work and additional responsibilities beyond assigned tasks

Organization and Planning: Prioritize work assignments based on their importance, set realistic deadlines, and plan and use time efficiently and productively to complete short- to long-terms tasks and projects

Quality of Work: Produce high quality and thorough work with very few errors, independently checking work prior to completion

Productivity: Independently and quickly learn complex new material and use existing knowledge to consistently complete an expected or greater amount or work on time or earlier

Written Communication: Communicate complex ideas and information in writing clearly, concisely, persuasively, and in a very organized manner, with review and editing rarely required

Verbal Communication: Verbally express complex ideas and information, clearly, concisely, persuasively, and in a very organized manner, with clarification rarely being required; very good public speaker

Work Independently: Assume complete responsibility for tasks and projects and work independently, demonstrating understanding of when to seek input from others when work is outside scope of knowledge or ability

Teamwork: Be a responsible, accountable, and effective team member by working collaboratively and cooperatively with others, and demonstrating leadership as required to direct and motivate a group of people to work together

Problem Solving: Critically analyze engineering problems, evaluate alternatives, predict outcomes, recommend best course of action, and formulate solutions or procedures

Project Management Techniques: Use appropriate project management techniques as required, and incorporate plans to effectively manage change and analyze risk

Safety and Environment: Understand and contribute to the importance of a safe work culture, demonstrate safe work practices, and understand and analyze the impacts of engineering on health and the environment

Ethics and Integrity: Demonstrate excellent judgment and individual accountability in resolving ethical issues, with an understanding of potential outcomes and consequences, avoid questionable conduct and conflicts of interest, and display honesty and fairness in interactions with others

Appreciation of Diversity: Promote diversity and inclusion in the workplace; respectful, work well with others, and encourage others to work together despite individual differences

Adaptation to Organization's Rules and Policies: Independently and quickly recognize, understand, and follow an organization's rules and policies

Response to Supervision: Seek constructive feedback to assist in one's own professional development, openly accept direction and suggestions, and respond appropriately, immediately incorporating feedback into current and future work

Dependability: Gain added responsibility and the trust of others by being reliable and consistent in the completion of work and in meeting commitments, while demonstrating an excellent work ethic, putting in extra effort when required

PLAGIARISM

Plagiarism is a serious academic offence at Memorial University. Cases involving suspected plagiarism in a student's work term communication component will be addressed as per the Procedures for Resolution of Alleged Academic Offences by the Senate Committee on Undergraduate Studies, stated in the University Regulations section of the Memorial University Calendar.

WORK TERM EVALUATION

The work term will be evaluated on the basis of the communications and performance components, as described below.

Note that the evaluation for each of the communications component and the work term performance will appear on the transcript.

1) Communications Component

One of the best tools available to faculty to ensure that students approach the work term with awareness, and not just consider it another job, is the requirement for the communications component. Through the experience of preparing a technical report or presentation and having it evaluated, strong communication skills that will be very beneficial for the student's future are developed.

The communication component for Work Term 5 may be one of the following: formal technical report, presentation, tender document, operations manual, proposal, research paper, or feasibility study. The decision of which type of communication component to submit should be made in consultation with, and consent of the student's ASM. The topic and effort of the submission should reflect the student's level in the engineering program. The subject should be taken from the student's work or work environment and should deal with a project or problem worked on during the term. Additional documents or presentations may be required by the employer. The report should be completed according to engineering standards. Guidelines for the preparation of a formal technical report are provided in Appendix K and guidelines for the preparation of a presentation are provided in Appendix L of the Student Co-op Handbook at http://www.mun.ca/coop/programs/engineering/. Guidelines for other report types should be discussed with the student's ASM. The report should be submitted or postmarked no later than the last official day of the work term as shown in the University Calendar.

The written report is intended to develop the following skills:

- the ability to research the subject appropriately, to conduct the necessary analysis, and to effectively substantiate conclusions and recommendations;
- the ability to summarize findings and communicate, in writing or orally, in a professional manner; and
- the ability to apply concepts learned in the academic environment to learning objectives in the work environment.

The preparation for a presentation is intended to help students develop the following skills:

- the ability to research the subject appropriately to conduct the necessary analysis, and to effectively substantiate conclusions and recommendations;
- the ability to summarize findings and communicate in a professional manner; and
- the ability to apply concepts learned in the academic environment to achieve learning objectives in the work environment.

Work Report Evaluation

The work report will be evaluated by an ASM or delegate. Evaluation of the report will result in one of the following classifications:

a) *Outstanding* - the report quality is exceptional; there is clear evidence of the following:

- comprehensive knowledge of the subject matter and principles treated in the report
- high degree of originality and independence of thought
- superior ability to organize and critically analyze information
- outstanding ability to communicate
- good documents planning
- outstanding effort put into report production

To be considered Outstanding the report should have

- all required sections of the report complete, including letter of submittal, summary and references
- very few spelling, grammar and word processing errors
- a professional presentation
- technical content verified by employer

b) *Above Expectations* - the report be of good quality with evidence of:

- substantial knowledge of the subject matter
- moderate degree of originality and independence of thought
- good ability to organize and analyze information
- ability to communicate clearly and fluently
- good document planning
- substantial effort put into report production

c) *Satisfactory* - the report should meet minimum requirements with evidence of:

- acceptable knowledge of the subject matter
- some ability to organize and analyze information
- ability to communicate adequately
- acceptable document planning
- acceptable effort put into report production

d) *Marginal Pass* - the report should, as a minimum, demonstrate evidence of:

- adequate knowledge of the subject matter
- adequate ability to organize and analyze information
- adequate ability to communicate
- adequate document planning
- adequate effort put into report production

e) *Fail* - the report is unacceptable showing evidence of one or more of:

- inadequate knowledge of the subject matter
- failure to complete required work
- inability to organize and analyze information
- inability to communicate
- inability to plan the production of a formal report
- inadequate effort put into report production

Oral Presentation Evaluation

The oral presentation will be evaluated by all students and guests in attendance. The final grade will be assigned by an ASM. Evaluation of the presentation will result in one of the following classifications:

a)   *Outstanding* - the quality of the oral presentation is exceptional; the presentation portrays the following features:

- comprehensive knowledge of the subject matter and principles presented
- superior ability to organize and analyze information
- outstanding ability to communicate
- excellent delivery
- excellent time management
- outstanding use of visual aids
- appropriate dress code

b)   *Above Expectations* - the presentation should be of good quality with evidence of:

- substantial knowledge of the subject matter
- good ability to organize and analyze ideas
- ability to communicate clearly and fluently
- good delivery
- good time management
- effective use of visual aids
- appropriate dress code

c)   *Satisfactory* - the presentation should demonstrate evidence of:

- acceptable grasp of the subject matter
- some ability to organize and analyze ideas
- ability to communicate adequately
- acceptable delivery
- acceptable time management
- acceptable use of visual aids

d)   *Marginal Pass* - the presentation should, as a minimum, demonstrate evidence of:

- adequate knowledge of the subject matter
- adequate ability to organize and analyze ideas
- adequate communication attempted
- adequate effort put into delivery
- time management attempted
- adequate use of visual aids

e)   *Fail* - the presentation is unacceptable showing evidence of one or more of:

- inadequate knowledge of the subject matter

- failure to complete required work
- inability to organize and analyze ideas
- inability to communicate
- inability to plan the production of a formal presentation
- inadequate effort put into presentation
- inadequate use of visual aids

2) **Work Term Performance**

The key ingredient to a successful work term is the student's ability or openness to learn and/or further develop work related skills. These skills are listed in the Learning Outcomes / Skills Expectations section above.

Within the first three weeks of the work term, the student in consultation with his/her supervisor will establish performance and personal objectives for the work term. This should also include identification of skills necessary for the student to develop in order to perform the duties and responsibilities of his/her position. The objective is that through the process, the student will acquire new skills that will be reflected in the workplace.

Performance Evaluation

The work term performance will be based upon an ASM's assessment of the employer's evaluation, information gathered from contact with the student, employer, and others in the workplace, and timely receipt of all work term documentation by established deadlines. The ability to plan to meet deadlines is essential to a professional engineer.

Evaluation of the work performance will result in one of the following classifications:

a) Outstanding
b) Above Expectations
c) Satisfactory
d) Marginal Pass
e) Fail

A student receiving a grade of "Marginal Pass" will be identified for follow-up and close monitoring in subsequent work terms.

3) **Overall Work Term Evaluation**

The overall evaluation of each work term will be based upon the work report and work term performance and will result in one of the following grades recommended:

a) *Pass with Distinction* - To receive a recommendation of *PASS WITH DISTINCTION* a student needs to obtain an evaluation of **OUTSTANDING** in both the communications and work performance components of the work term.

b)   ***Pass*** - To receive a recommendation of ***PASS*** a student must achieve an evaluation of ***MARGINAL PASS*** or better in each of the communications and the performance components of the work term.

c)   ***Fail*** - A student receiving a ***FAIL*** in either or both the communication and performance components of the work term will receive a recommendation of ***FAIL***.

All evaluation documents are due at the end of the work term as listed in the critical dates. You should make copies of these for your personal records, and mail the originals.

CONTACT DURING THE TERM

On most of your work terms, you will be interviewed on-site by an ASM or faculty member. The Co-op Office combines this activity with an ongoing program of marketing co-operative education to potential employers. Since these on-site visits are scheduled throughout the term, if questions arise early in the work term, you should contact the Co-op Office.

The Work Term confirmation information entered in MyMUNLife by students during the first week of work will allow us to communicate with you and your supervisor during the term. If you feel it will be helpful to your ASM when he/she comes to your office, please include a location sketch.

WORK TERM AWARDS

We encourage all students to give their best effort to all aspects of the work terms, which usually present many opportunities to examine the role and contribution of professional engineering to society. The chance to compare theory from the classroom with practice in the field can be very rewarding.

Work Term awards are an incentive for students to give their best effort each semester and are a way for employers to recognize their students. Employers are encouraged to nominate exceptional students in a variety of awards each semester.

Please refer to the Engineering Student Co-op Handbook for details on awards that may be relevant to you.

CONFIDENTIAL REPORTS

ASMs have the responsibility for recommending promotion decisions to Faculty Council, including the mark for the technical report. When sensitive or proprietary information is involved, the **non-disclosure** form should be completed. Students should discuss their work report topics with their supervisor early in the term and determine if any of the material is confidential.

LATE WORK REPORTS & DOCUMENTS

As students progress through the Engineering program they learn that meeting deadlines is part of the role of a professional engineer. In the case of reports and to some extent other work term documents, students should realize there are really two clients involved - the employer and the university, with responsibilities to both. Students are often challenged to meet the expectations of both these clients and this is a further measure of their ability to manage time and resources.

Faculty depends on evaluation input from supervisors, with the last two weeks of work being a convenient time for the completion of these documents. You should make an effort to discuss your report and performance during that time. The timely submission of all work term documents is taken into consideration in the performance evaluation. Receipt of the report and evaluation documents allows the Engineering Co-operative Education to complete overall evaluations and subsequently meet the Registrar's deadline for submission of grades.

It is suggested that you submit a final version of the report to your supervisor at least two weeks before the deadline. After the report is checked and cleared for propriety information you should mail, or deliver it to us. The absolute deadline is the published end date of the work term, after which reports are considered **late.**

EXIT INTERVIEWS

Students are strongly encouraged to spend two successive work terms with each employer. We have found that the student and the employer gain the most from the co-operative education experience with back-to-back work terms. It also helps to demonstrate that you can develop a sense of commitment to an employer.

At the end of the work term, you should endeavour to arrange an exit interview with your employer in order to review the work term and discuss prospects for your next work term. This would normally include both your supervisor and a representative of the employer's human resources staff.

YOU CAN CONTACT US:

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