Guidelines for Preparation of Co-op Work Term Reports for the School of Engineering

The work term report provides the opportunity for students to consider their experience in some depth and is a worthwhile approach to enhance learning and career planning. In addition, the content of the report can be used by students when they complete the Professional Engineers Ontario (PEO) pre-graduation experience record. This record must be submitted in order for the PEO to consider co-op experience (beyond the halfway point of the academic program) as credit towards the experience requirement for licensing.

Students are required to submit a report for each Co-op work term; however, students on an 8 month work term, in the same job with the same employer, submit only one report at the end of the 8 months. This work report format does not preclude students from preparing a technical report for their co-op employer.

Objectives of the Work Term Report

The objectives of the work term report are to document the experience gained, skills developed and learning that occurred during the work term and to identify future learning and experience needs.

Content of the Work Term Report

A Work Term Report includes:

- Summary of responsibilities and duties performed
- Learning objectives
- Description of engineering experience in the following areas:
  - Application of theory
  - Practical experience
  - Management of engineering
  - Communication skills
  - Social implications of engineering
- Critical analysis of experience and learning
- Conclusions

In addition, a title page must be provided which includes all of the following information:

- Appropriate title reflecting work experience
- Name and student number
- Program of study
- Faculty Advisor for your program
- Work term number
- And employer (organization)

The Co-op Work Term Report - Employer Comments Form must also be submitted with the work term report. The Employer must also consent that the contents of the work report do not disclose confidential information. There is no requirement with respect to number of pages. Reports must contain sufficient content of acceptable quality, but also must convey the content in a concise manner. As a guideline, most reports will be between 15 and 20 pages in length. Font size should be at least 11 point and spacing should be at least 1.5 lines. Each report should be logically organized into sections and properly formatted including section headings and a table of contents.
Further Guidance on Preparing the Content of the Work Term Report

Summary of responsibilities and duties performed
Briefly describe the organization you worked for and the type of activities the organization performs in a paragraph. Provide a description of your job responsibilities and duties performed. Describe the types of activities performed emphasizing the technical nature of your work. A detailed analysis of your work is not required, but sufficient detail highlighting your engineering experience is expected. For example, when describing a design project, briefly describe the problem, the steps taken to solve the problem, your final solution, and the success of implementing your solution if applicable. The projects and the work environment to which you were exposed and any training you received are also relevant. This section is intended to provide background and context for the subsequent discussion of engineering experience. If your position entailed a multitude of tasks, select some key examples to illustrate the range of work in which you were engaged.

Learning Objectives
Provide the learning goals that you developed as part of the requirements set out by the Co-op Office. Include any additional learning objectives identified over the course of the work term. When introducing your learning objectives indicate how these objectives fit into your career goals and how they build upon your earlier work experience. Your learning objectives should reflect your critical analysis of previous work terms.

Description of Engineering Experience
To become a licensed Professional Engineer, you require at least 48 months of work experience. Up to one year of experience is credited for co-op work experience gained in the second half of an engineering program. The quality of your work experience is measured against five quality-based criteria: application of theory, practical work experience, management of engineering, communication, and social implications of engineering. All engineering experience must include application of theory and practical experience. Not all jobs will cover all criteria, but over the course of your work experience, you should be exposed to aspects of the other three criteria. The PEO’s Pregraduation Experience Record Guide provides many examples of acceptable engineering experience under each of the five categories. Please refer to: http://www.peo.on.ca/index.php/ci_id/22884/la_id/1.htm

Application of Theory:
- All engineering jobs should include some aspect of application of theory.
- Application of theory includes at least one or more of:
  - Analysis
  - Design and Synthesis
  - Testing Methods
  - Implementation Methods
- Relate the experience described in the Summary of responsibilities and duties performed section to the above types of work. Clearly indicate how your work experience achieves at least one aspect of these applications of theory.
Practical experience:
- All engineering jobs should include some aspect of practical experience.
- Describe opportunities you had and the knowledge or insights you acquired in gaining practical experience such as understanding the function of components in a system, the limitations of practical engineering, and the significance of time to engineering.
- Demonstrate your understanding of the laws, regulations, codes and/or standards relevant to your work.
- What engineering tools (e.g. sensors, computer software) did you have the opportunity to use over the course of your work term?

Management of engineering:
- Describe experience you gained with project management, planning, scheduling, budgeting, and risk assessment of projects.
- Although you may not have managed projects or supervised others during your co-op work term, you can identify role models and learn by critically thinking about what makes them successful.

Communication skills:
- Document the opportunities you had to develop your communication skills.
- Consider a wide range of communication types from day-to-day correspondence to formal reports; from routine oral reports for co-workers to presentations for audiences including senior management, regulatory agencies, clients and the public.
- Also consider skills such as listening and persuasion.

Social implications of engineering:
- To demonstrate your understanding of the social implications of engineering, identify:
  o the benefits of your projects to the public
  o social and environmental impacts of projects
  o health and safety practices in your workplace

  There are some additional attributes which you may consider discussing. These are described in Section 3 “Accreditation Criteria” at: http://www.engineerscanada.ca/e/files/report_ceab_08.pdf.

  Some of these attributes overlap with the PEO’s areas of engineering experience. However, there are some new areas worthy of exploration including individual and team work as well as ethics and equity. The Canadian Engineering Accreditation Board expects graduates of engineering programs to possess the twelve attributes described. You may find this information useful for your critical analysis of experience and learning. Many of the experience areas and attributes include elements that are readily transferred to other professions. If you are preparing for a non-engineering career after graduation, you are welcome to provide this context for your critical analysis of experience in the next section.

Critical Analysis
  There should be two components to the critical analysis section. First, you are expected to provide a critical analysis of your strengths and successes as well as areas in which you require additional skills, knowledge or experience. Simply stating you achieved your learning objectives is not sufficient. Second, you are expected to develop a plan to address the professional development needs that you identify. Whereas other sections may be largely descriptive, this section requires evaluation of your experience, skills and learning and you are expected to demonstrate insight (e.g. what is the
relevance of experience or implications of gaps in learning). You may wish to get started by commenting on whether you were able to achieve your learning objectives. If so, what opportunities made this possible? If not, what barriers prevented you from achieving the objectives? How might you overcome these barriers in future jobs? You should focus on factors which are within your control (i.e. self-evaluation).

Submission Requirements

Work term reports (with Co-op Work Term Report –Employer Comments Form attached) are due by 4:00 PM on the 5th class day of the semester (refer to the University calendar if you need to confirm the 1st class day). Reports may be submitted directly to the faculty advisor for your program or to Martha Davies, the Receptionist in the main School of Engineering office. No late submissions will be accepted without prior approval of faculty advisor. Extensions will only be granted for exceptional circumstances.

Grading of the Work Term Report

Work reports are graded by faculty. A grade of Outstanding, Very Good, Good, Satisfactory, or Unsatisfactory will appear on the student’s Academic Record. Faculty will evaluate your report using the following criteria:
- Appropriateness of engineering experience identified (given job responsibilities and technical summary)
- Strength of relating work experience to the acceptable engineering experience quality
- Breadth and depth of critical analysis and its relation to career objectives
- Quality of writing/report (organization, clarity and conciseness, use of English, maturity of style)

If a report is very poorly written and/or shows an inadequate effort in the identification and evaluation of experience, it will be deemed unsatisfactory. A student who receives an unsatisfactory work report evaluation will be given one opportunity to make revisions and resubmit the report. The work term report must be resubmitted by the deadline specified by the faculty advisor AND address the identified deficiencies in order to be upgraded to satisfactory. Students who are resubmitting a work report will not be eligible to proceed to the next employment process until receiving a grade of Satisfactory or higher. If, upon resubmission, the work report evaluation is still Unsatisfactory, the student will be required to withdraw from co-op. The grade as well as the phrase "Req to Withdraw from Co-op" will appear on the Official Transcript. The student will then be transferred to the regular academic program. Late submissions (without prior approval of the faculty advisor) will be graded as Unsatisfactory with no resubmission privileges. If a work term report is not submitted, the grade of Unsatisfactory as well as the phrase "Req to Withdraw from Co-op" will appear on the Official Transcript. The student will then be transferred to the regular academic program.

Role of Faculty Reviewing Work Term Report

In addition to assigning a grade, faculty reviewers will provide suggestions for improving the quality of the written report. Faculty can also help students to recognize their experience and identify goals for future learning and experience.

Return of Graded Work Term Reports

Graded work term reports will be available for pick-up from faculty advisors near the end of term (during exam period). If the time or locations for pick-up changes, students will be notified. Students are encouraged to pick up their reports and review feedback so that they can improve the quality of their submission for future work terms.