Faculty of Engineering and Applied Science   Co-operative Education Office

Fall 2025
COURSE OUTLINE – ENGI 006W

This Outline provides information on the requirements, expectations, and evaluations for Work Term 6. It should be reviewed very carefully to ensure students' work progresses smoothly. Additional forms and information can be found on the co-op webpage at https://www.mun.ca/coop/programs/engineering/work-term-dates-and-forms/.

Contents

CRITICAL DATES (for all work terms*):

Tuesday, 2 Sep 2025	Work Term Begins. Complete *Work Term Confirmation* online in MyMUNLife.
Friday, 19 Sep 2025	Deadline for submission of *Work Term Objectives Form* Submit via e-mail: coopeng@mun.ca
Friday, 24 Oct 2025	Deadline for submission of *Work Report/Presentation Outline*. Complete online in MyMUNLife.
Friday, 19 Dec 2025	Work Term ends and deadline for submission of the *End of Work Term Feedback Form* and communication component documents.
Tuesday, 6 Jan 2026	Academic courses begin for Winter Semester
January 6, 7, 8 & 12 2026	Oral Presentations. Students who are presenting must be prepared to present at this time. Schedule will be available before the end of the work term.

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 the Professional Engineers and Geoscientists of Newfoundland and Labrador (PEGNL) 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 'Regulations' section of the University Calendar. It is strongly recommended that students read and follow these rules because the penalties can be severe, the severest being expulsion from the University.

Organizations typically provide internet access to their employees and work term students. These organizations often have specific policies governing internet usage, including personal use. These policies would normally be explained during the job orientation, typically during the first few days at work. Students must follow these policies and should expect that their employer will monitor usage of the internet during the work term. Students should also limit their use of personal cell phones during working hours as they may distract from assigned work activities. If employers do not address these issues during initial orientation, it is strongly suggested that students ask their supervisor for specific guidance.

Students should also be aware of and follow their employer's rules around the use of products such as recreational or medicinal drugs and alcohol which may be legal to use but may not be permitted by their employer. The use of such products may affect a student's employability.

PLAGIARISM

Plagiarism is a serious academic offence at Memorial University. Cases involving suspected plagiarism in a student's work term deliverables 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.

Original work, completed wholly by you, is expected to be submitted in this course. The use of artificial intelligence tools, such as ChatGPT is not permitted for work term deliverables to the Co-operative Education Office and would be considered Academic Misconduct.

The submission of work that has been created by generative artificial intelligence (GAI) tools and presented as a student's original work is considered an academic offence in this course.
Students **may not** use GAI in any of the following ways:
- Submitting an assignment presented as their own. This includes but is not limited to essays, research papers, computer code, and solutions to mathematical problem.
- Using GAI as an aid to completing an assignment, such as paraphrasing from GAI content.

COURSE DESCRIPTION: ENGINEERING 006W

Engineering Work Term 6 requires students to further engage in various advanced facets of engineering. Participation in their selected engineering discipline is expected. Students should gain further appreciation of the use and importance of acquired analytical skills in engineering analysis, and significantly contribute to design and/or problem solving processes. The level of responsibility should be commensurate with their academic background and experience. Work scope should be mostly independent, with longer timelines, and with the possibility of leadership opportunities.

006W LEARNING OUTCOMES / SKILLS EXPECTATIONS

There are a key set of skills that will be evaluated based on the End of Work Term Feedback Form. These skills are demonstrated in a number of ways, and considered important to an engineer's abilities. The expectations for these skills increase with progression through the engineering education program. During more junior work terms (e.g., work terms 1 and 2), students should demonstrate these skills at a beginner level, working their way to demonstrating the skill at an intermediate level (e.g., during work terms 2 and 3), before demonstrating the skills at a more advanced level in senior work terms (e.g., work terms 4 through 6). Students who meet the expectations listed below would get a rating of 3 on the 1-5 point rating scale. Exceeding these expectations would result in a rating of 4 or 5 for that skill/quality. Conversely, if a student does not meet the expectations they may receive a 1 or 2 rating for that skill/quality. The Skills Expectations for Work Term 6 are listed below:

1. **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
2. **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

3. **Quality of Work:** Produce high quality and thorough work with very few errors, independently checking work prior to completion
4. **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
5. **Written Communication:** Communicate complex ideas and information in writing clearly, concisely, persuasively, and in a very organized manner, with review and editing rarely required
6. **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
7. **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
8. **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
9. **Problem Solving:** Critically analyze engineering problems, evaluate alternatives, predict outcomes, recommend best course of action, and formulate solutions or procedures
10. **Project Management Techniques:** Use appropriate project management techniques as required, and incorporate plans to effectively manage change and analyze risk
11. **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
12. **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
13. **Appreciation of Diversity**: Promote diversity and inclusion in the workplace; respectful, work well with others, and encourage others to work together despite individual differences
14. **Adaptation to Organization's Rules and Policies**: Independently and quickly recognize, understand, and follow an organization's rules and policies
15. **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
16. **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.

WORK TERM DELIVERABLES

Students must submit on the date indicated above the following for Work Term 6.

Work Term Confirmation
Work Term Objectives
Work Report/Presentation Outline
Work Term Communications Component, which could be one of the following described further in the appropriate appendix:
- A comprehensive technical report, or
- an oral presentation, including presentation summary package, or
- alternate communications deliverable.

End of Work Term Feedback Form

WORK TERM CONFIRMATION FORM

The ECEO depends on the Work Term Confirmation Form to confirm that students have arrived safely at work and for all means of contact while they are on their work term. **It is extremely important that the form is completed online in MyMUNLife within a couple of days of starting work.** Although the on-line form will appear as 'Approved' when the position is created, students must still input the required information. The WTC must be updated whether the student is in a new position, or is returning to a previous employer. If any of the information changes during the term, it should be updated online and the student's ASM-CE (Academic Staff Member in Co-operative Education) notified.

WORK TERM OBJECTIVES

Within the first three weeks of the work term, the student, in consultation with their supervisor will establish performance and personal/professional objectives for the work term. The objectives should also include identification of specific skills the student should develop in order to perform the duties and responsibilities of the position. Through this process, the student will acquire new skills or further develop existing skills required in the workplace. The key ingredient to a successful work term is the student's ability or openness to learn and/or further develop work related skills (see the Student Success Guide for more details on writing SMART Objectives). The student should submit a copy of the **Work Term Objectives** form to the ECEO (coopeng@mun.ca) for review and keep a copy for review later in the term. Students who start after the official first day of the work term should complete their objectives within the first two weeks of work.

WORK REPORT/PRESENTATION OUTLINE

The Work Report/Presentation Outline shall be submitted via the form in MyMUNLife for review and topic approval by the stipulated deadline date (typically by the end of the second month of the work term). By that time, students are expected to have developed an appreciation and insight into the operations of their job to identify a potential topic and have it agreed to by the supervisor. The student should select a topic that is relevant, manageable, doable, and commensurate with their level in the engineering program.

The Work Report/Presentation Outline shall consist of a title, and a preliminary outline of the material to be covered with sufficient detail to allow the assigned ASM-CE to provide formative feedback to the student after review. There should be no confidential material in an Oral Presentation if that is the chosen deliverable.

COMMUNICATIONS DELIVERABLES

The possible communications deliverable types and their evaluation criteria are described in the appropriate appendices below.

Report Option
Your ASM-CE will communicate the format of your report submission which may be either a properly bound paper copy or an electronic submission. If an electronic submission is requested, it must be in the form of a single (one) professionally-created PDF file that includes all required components.

Presentation Option
Presentation Written Summary Packages (including all required components) may be submitted electronically to a student's ASM-CE. It must be sent as a single (one), professionally-created, PDF file of all required components including cover page, letter of transmittal, appendices, etc.

CONTACT DURING THE TERM

Students will be interviewed on-site by their assigned ASM-CE on most work terms. The ECEO combines this activity with an on-going program of marketing co-operative education to potential employers. These on-site visits are typically scheduled in the middle third of the term. If questions arise early in the work term, students should contact the ECEO right away.

The Work Term confirmation information entered in MyMUNLife by students during the first week of work will allow the ECEO to communicate with students and their supervisors during the term.

WORK TERM AWARDS

Students are encouraged 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 for various awards each semester.

Please refer to the Engineering Co-operative Education Student Success Guide for details on awards that may be relevant.

CONFIDENTIAL REPORTS/PRESENTATIONS

Students should discuss their work report or presentation topics with their supervisors early in the term and determine if any of the material is confidential because all required work term communications components must be submitted to the ECEO as the student's assigned ASM-CE is solely responsible for grading them. When sensitive or proprietary information is involved, the Non-Disclosure Request Form (NDRF) should be submitted. Confidential or proprietary information must not be included in any communications deliverable unless permission has been received from the employer to submit the confidential material. If there are ongoing concerns about confidential material, the student should consider changing to a less sensitive topic.

Once the NDRF is submitted, the student's ASM-CE will complete and sign an agreement that provides assurance that no information will be transmitted to any other person. Students should not submit confidential materials unless the ASM-CE has already signed a Non-disclosure agreement. All permitted confidential submissions must be watermarked or stamped "Confidential" on every page, including the front matter.

Some communications components may now be submitted electronically. Note that it is difficult for ECEO to guarantee the appropriate destruction of these electronic files. It is very important for students to discuss electronic submissions with their employers so the employer understands these limitations around confidentiality. If they are not comfortable with electronic submission of a confidential report or presentation package, the student may need to consider amending their topic or the material included.

Following an opportunity to review by the student, the communications component will be destroyed by the ECEO if submitted in paper format, or the ASM-CE will follow MUN Information Technology office's best practices to delete any electronic submissions.

TIMELY SUBMISSION OF DELIVERABLES

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.

ASMs-CE depend on feedback from supervisors, with the last two weeks of work being a convenient time to complete these documents. Students should make an effort to discuss their 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 feedback documents allows the Engineering Co-operative Education Office to complete overall evaluations and meet the Registrar's deadline for submission of grades.

It is suggested that a final version of the report or presentation summary/slide package be submitted to the student's supervisor at least two weeks before the work report deadline. After the document is checked and cleared for proprietary information it should be submitted to the ECEO in the required format. The absolute deadline is the published end date of the work term, after which documents are considered **late**.

EXIT INTERVIEWS

Often the opportunity to grow and take on an increased level of responsibility comes with returning on a subsequent work term with an employer. This should be balanced by the potential to gain a greater diversity of experiences during the co-op program. If the nature of the work term and the potential for additional learning exists, students are encouraged to consider returning to work with the same employer on a subsequent work term.

At the end of the work term, students are encouraged to arrange an exit interview with their employer and, separately consult with their ASM-CE to review the work term and discuss prospects for the next work term. The employer meeting would normally include the supervisor and a human resources representative.

CONTACT INFORMATION:

Telephone:	709-864-8816	**Mailing address:**
E-mail:	coopeng@mun.ca	Engineering Co-operative Education
		Memorial University of Newfoundland
		S.J. Carew Bldg., EN-4021
		St. John's, NL A1B 3X5

APPENDIX A   WORK TERM EVALUATION

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

For useful resources to assist with the completion of this Communications Component deliverable, see the Brightspace shell here: *Work Term Communications Components – Online Support Materials*

Communications Component
The written (or oral) communication component 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 communication component will be evaluated by an ASM-CE or delegate.

Evaluation of the communication component will result in one of the following marks:

Outstanding - the communication component quality is exceptional; there is clear evidence of the following:

- comprehensive knowledge of the subject matter and principles used,
- high degree of originality and independence of thought,
- superior ability to organize and critically analyze ideas,
- outstanding ability to communicate,
- good planning,
- outstanding effort put into the production of the communication component.

To be considered outstanding, the communication component should have:

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

Above Expectations - the communication component is 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 ideas,
- ability to communicate clearly and fluently,
- good planning,
- substantial effort put into communication component production.

Satisfactory - the communication component meets minimum requirements with evidence of:

- acceptable grasp of the subject matter,
- some ability to organize and analyze ideas,
- ability to communicate adequately,
- acceptable planning, and
- acceptable effort put into report production.

Marginal Pass - the written communication component has a number of weaknesses but would meet expectations after modifications are made. The communication component should, as a minimum, demonstrate evidence of:

- adequate knowledge of the subject matter,
- adequate ability to organize and analyze ideas,
- adequate ability to communicate,
- adequate planning, and
- adequate effort put into communication component production.

Fail - the communication component 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 the communication component,
- inadequate effort put into communication component production,
- some or all of the report is plagiarised

At times, an ASM-CE may request that the student revise and resubmit their work report rather than be given a mark of *Fail*.

- When a student has been given the opportunity to resubmit the communication component, the student will not be eligible for a mark other than *Fail* or *Marginal Pass*.
- Normally, a student will be given two-weeks to resubmit the communication component.
- If the communication component is not revised to an acceptable standard within the specified time, a *Fail* will be recommended.

Work Term Performance

Work term performance is based upon several elements:

- An ASM-CE's assessment of the employer's End of Work Term Feedback Form. This form includes: feedback on the key set of skills outlined in the Learning Outcomes/Skills Expectations section above; and the ability to meet the objectives set at the beginning of the work term, taking into account the challenges and opportunities available to the student.
- Information gathered from contact with the student, employer, and others in the workplace.
- Timely receipt of all work term documentation by established deadlines, as the ability to plan and meet deadlines is essential to a Professional Engineer.

The performance marks below take into account how well the student meets these elements.

Outstanding - the student has successfully completed an excellent work term. Considerations include:

- exceeds employer's expectations in all areas,
- maintains an excellent working relationship with the ECEO,
- all documentation submitted in a timely manner.

Above Expectations - the student has successfully completed a very good work term. Considerations include:

- exceeds or meets employer's expectations in most areas,
- maintains a good working relationship with the ECEO, and
- all documentation received.

Satisfactory - the student has successfully completed a good work term. Considerations include:

- meets employer's expectations,
- maintains an acceptable working relationship with the ECEO,
- most documentation received.

Marginal Pass - the student meets the minimum requirement of the work term. The student will be monitored and is expected to improve in the next work term. Considerations include:

- did not meet all employer's expectations,
- working relationship with the ECEO needs improvement,
- some of the documentation late or not received.

Fail - the student's performance is unacceptable, demonstrated by one or more of:

- did not meet employer's expectations,
- poor working relationship with the ECEO, and
- most or all of the documentation not received.

Overall Work Term Evaluation
The overall evaluation of each work term will be based upon the communication component and work term performance and will result in the recommendation of one of the following grades:

Pass with Distinction - to receive a recommendation of *pass with distinction*, a student needs to obtain an evaluation of *outstanding* in both the communication and work performance components of the work term.

Pass - to receive a recommendation of pass a student must achieve an evaluation of *marginal pass* or better in both the communication component and the performance component of the work term*.*

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*.

For promotion from the work term, a student must obtain **Pass with Distinction** or **Pass.**

A student who receives a grade of Fail on any work term will be required to repeat that work term prior to graduation regardless of whether the work term is mandatory or elective.

Students should be aware of the University's policy on plagiarism. More information can also be found on the Writing Centre's web page https://www.mun.ca/writingcentre/understanding-plagiarism/

APPENDIX B   ORAL PRESENTATION

General

Engineers are expected to be able to give a variety of presentations throughout their careers. These may take many different formats based on the need and audience. Being able to express ideas to colleagues, senior management, or other non-technical individuals is an important skill that will improve with practice. There are three main reasons to give a presentation: to inform; to persuade, as with a sales presentation; or to entertain. The Work Term Oral Presentation is to inform. Requiring students to complete an oral presentation in their program will provide valuable practice and feedback for future school and workplace presentations.

Permission to undertake an Oral Presentation in Work Term 6 shall be at the discretion of the ASM-CE, upon review of previous report and presentation grades.

Presentations take place on campus usually during the first or second week of the following academic term. All students must present during the time specified. If for some specific reason a student is unable to present at that time, they must follow the guidelines established for a deferred exam as stated in the University Calendar and the Co-op Rules and Regulations Handbook. Faculty members and students' supervisors are encouraged to attend the presentations. Evaluation and feedback of the oral presentation will be carried out by ASM(s)-CE, and others attending the presentation, using the criteria attached. Note that the Presentation Package must be submitted to the ECEO before a student completes the oral presentation.

The Presentation Package submission as described below includes a written summary and presentation slides. The electronic files or hardcopies will be handled in a confidential manner if a Non-Disclosure Request has been submitted in advance. Note that the presentation delivery to the audience at the university will not be confidential.

The length of the presentation is 10 minutes with five minutes for questions. Presentations will be given a +/- one minute leeway. Outside of this time, overall evaluation may be impacted. Material delivered in an oral presentation should differ from written material in its level of detail, organization and presentation. In a 10-minute presentation, excessive detail will confuse the audience. Students should concentrate on a couple of main points and keep reminding the audience what the central theme is by relating each major section of the presentation to the theme. It is also important that students customize their presentations to the audience – for instance, all industry related terms should be fully explained.

The strategy should be to: "tell the audience what you are going to say", "say it", and "tell them what you have said". An oral presentation should create awareness and an interest in the topic that should generate questions at the end.

Topic

The topic of the presentation should relate to the student's work term activities, but it is not a presentation on the work term duties; **the presentation should focus on the project, not the student's role in the project.**

Presentation Package
Students are required to submit a Presentation Package which includes: an overview of the presentation; and the presentation slides. The overview of the presentation should be a **minimum of 750 words up to a maximum of 1000 words** in length. Writing succinctly is an important skill, so students should avoid going over the recommended maximum word count.

<u>Presentation Package Structure</u>
The submitted package should contain the following sections. The standard report sections are further described in the Work Term 001W Course Outline:
- Cover Page
- Letter of Transmittal
- Title Page
- Table of Contents @
- Presentation Overview, which contains:
    - Introduction
    - Main Discussion
    - Results@
    - Conclusions
    - Recommendations @
- List of References
- Presentation slides

* Items marked @ above are considered optional based on the submission.

<u>Presentation Package Guidelines</u>
- Presentation Overview and presentation slides must be submitted as a single pdf document.
- Overview should be 750 to 1000 words of double-spaced, typewritten material.
- When determining length, word count only includes the body (introduction to conclusions or recommendations, if included). It does not include the back matter (reference list, appendices), or any front-matter (material before the introduction).
- Should be written as an overview of the presentation topic, and not a slide by slide description.
- Presentation Overview shall be written in the formal style including using appropriate language, and be written in the 3rd person.
- Overview and presentation slides must be appropriately referenced and cited in the same manner as other academic reports.
- Limit submitted presentation slides to no more than two per page.

Oral Presentation

<u>Presentation Structure</u>
The general structure of the presentation slides should be as follows:
- Introduction – students should introduce themselves and give a brief overview on the company or department they worked with. The role of the student may be explicitly discussed here, or implicitly throughout the presentation.
- Agenda – a 'Table of Contents' of what is being discussed.
- Background / Problem Definition – an introduction to the topic, its purpose, objective, and scope.
- Body – discusses some of the details of the topic, again bearing in mind the audience and not getting bogged down in detail.
- Conclusions – summarizes the key points of the presentation, which may also include the essential features of a design or the significant outcomes of an investigation.
- Recommendations (if required) – provides a recommended course of action.
- Questions – the presenter sometimes has to encourage the audience to ask questions by posing one themselves, or asking the audience a question.

Presentation Guidelines
Note that all guidelines will be considered as part of the evaluation of the oral presentation.
- Students must develop their slides in a program that is compatible with MS PowerPoint (2003)
- Limit slides to one idea per page.
- Limit slides to at most 4-5 bullets per page.
- Use consistent sentence styles on each page – i.e., actions starting with verbs, or descriptions starting with modifiers.
- Use a large enough font to be seen from the back of the room – e.g., 35+ point for titles and 18-35 point for bullets.
- Ensure tables and figures are legible from a distance.
- Use a letter style that is easily read by viewers at the back of the room, avoid script fonts.
- Use as few words as possible. Use graphs, charts, a picture or key words.
- As a general guide, use one slide per minute of presentation.
- Reference all material – i.e., pictures, graphs, etc.
- Avoid use of distracting slide transitions.
- Embedded videos or animations that are relevant to the presentation and are less than 15 seconds are permitted.
- Videos or animation should not include sound, as the presenter is expected to be able to speak over them.

Additional Guidelines and Areas for Evaluation
- Organization of Material/Logical Order –present the material in a way to walks the audience through the story logically or in a natural flow
- Internal Summaries/Transitions – ensure that the transition from one area or topic to the next logical
- Main Points Highlighted – provide a suitable explanation of the key presentation topics given the time provided; ensure that there is not too much material to cover it all suitably
- Well Defined Summary – the summary should bring together the key points and conclusions/recommendations as necessary
- Referencing of Sources – all material from other sources must be appropriately referenced
- Appropriate Subject – the selection of a topic that is related to the student's work is important. The topic should also be appropriate for the audience.
- Knowledge of Subject – students will be evaluated on how well they appear to know the subject they are speaking about. This may show through appropriate word choice, being able to explain complex topics, and in response to questions.
- Level of Challenge – students should select a topic that contains an appropriate level of technical challenge depending on the employer and which work term the student has just completed.
- Idea(s) Clearly Explained - it is critical to understand the audience and explain topics at a level that can be understood. Using examples, figures, or short animations can help in this area.
- Delivery
  - Posture/Presence/Appearance – face the audience not the screen, avoid leaning on the podium, keep hands out of pockets, avoid playing with hair, etc.
  - Vocal Ability – speak clearly and enunciate words.
  - Speed of Delivery – maintain a moderate rate of speech.
  - Mannerisms / Gestures – avoid excessive hand movements or filler words (umms).
  - Eye Contact – maintain good eye contact with all of the audience.
  - Show confidence and enthusiasm by varying tone of voice.
- Use/Quality of AV Material – the slides should be well put together, look attractive, often using a template to improve cohesiveness.

- Time Management – the presentation is to be 10 minutes, +/- one minute. Completing the presentation outside of this time will impact the final evaluation.
- Response to Questions – display confidence and directly answer the questions asked, if possible.
- Audience Interest – this includes audience interaction and whether appropriate questions are posed.
- Students are required to be on time for the start of the session, and to attend the entire session on the day they are to present.
- Students will be asked to actively participate in each session, which includes asking questions and providing feedback to their classmates using the following form.

Presenting Tips
- Save a copy of the slide package in electronic format on a memory stick to bring to the presentation session.   Students may not present using their own laptops.
- Students should have a printed back-up copy should their memory stick fail.
- Perform a trial launch of the presentation on a computer other than the one on which it was created to help confirm that the presentation will work on presentation day.
- Use notes or cue cards while presenting to keep on track. These are usually key words or short sentences.
- Practise the presentation to a friend or colleague. This will determine its final duration, allow fine tuning of the presentation and improve confidence. It is not possible to be too prepared

Evaluation

The Presentation Package and performance in the Oral Presentation are evaluated in conjunction with each other to assign an overall evaluation for the communications components.

The reviewer may require a student to give the oral presentation a second time if it is considered less than adequate. This second presentation would have to be completed before a final mark is assigned. Students who are required to re-present will receive a grade no higher than "Marginal Pass".

Both the Presentation Package and the Oral Presentation are required. A student not completing one or both components may receive a grade of "fail" for the work term communications component.

Each component will be assessed according to the following:

Presentation Overview
Structure and Format
- Cover and Title Page
- Letter of Transmittal
- Table of Contents (if required by the content)
- Proper binding
- Appropriate font
- Correct use of page numbering
- Overall length
- Easy to read layout
- Logical order of material
- Appropriate sections included (if required by the content)
- Tables and figures properly formatted (if included)
- Tables and figures properly cross-referenced in the text

Technical Quality
- Suitability of Topic
- Introduction
- Main discussion sections
    - sufficient technical discussion/content,
    - information and analysis (if included) is accurate,
    - content is consistent with stated purpose of the presentation,
    - tables and figures accurate and complete (if included),
    - thorough, yet concise,
    - original
- Conclusions
- Recommendations (if required)

Referencing and Resources
- Follows a consistent referencing style (e.g., IEEE, APA)
- Number of references listed
- Consistent/proper referencing of material
- In-text citations included where required, for both Presentation Overview and slides
- Variety of reference material used
- Validity/authority of the reference material used

Communication Effectiveness
- Writing is in the third person
- Use of contractions is avoided
- Vague language is avoided; material is qualified and quantified
- Ambiguous pronouns are avoided
- Unnecessary wordiness and redundancy are avoided; writing is concise
- Figures of speech are avoided
- Run-on sentences are avoided
- Definitive language is supported with evidence
- Word choices are appropriate
- Formal writing style is used
- Acronyms are correctly defined
- Punctuation is correct
- Spelling is correct
- Grammar is correct
- Parallel construction is used in sentences and lists
- Sentence structure is correct
- Paragraph structure is appropriate (one main concept with supporting details)
- Writing is clear
- Content is written for the appropriate audience
- Tables and figures included (if required) to support descriptions

Presentation Slides
- Limit slides to one idea per page.
- Limit slides to at most 4-5 bullets per page.
- Limit language to short bullets and avoid long sentences

- Write bullets using parallel language (Actions starting with verbs, or descriptions starting with modifiers)
- Use a large enough font
- Ensure tables and figures are large enough to be legible from a distance.
- Use a font style that is easily read by viewers at the back of the room, avoid script fonts.
- Use as few words as possible, balanced with the use of graphs, charts, or pictures.
- Reference all material including pictures, graphs, etc.
- Agenda included
- Organization of material is in a logical order, and uses appropriate internal summaries/transitions
- Presentation includes appropriate background and introduction to the student, role, and project
- Main points are highlighted
- Well defined conclusions/recommendations (if required)

Oral Presentation

Introduction
- Agenda
- Background / Problem Definition
- Objective
- Topic
- Student/role

Organization of Material
- Logical Order
- Internal Summaries/Transitions
- Main Points Highlighted
- Well Defined Summary
- Referencing of Sources

Content
- Appropriate Subject
- Knowledge of Subject
- Level of Challenge
- Idea(s) Clearly Explained

Delivery
- Posture/Presence/Appearance
- Vocal Ability
- Speed of Delivery
- Mannerisms / Gestures
- Eye Contact
- Use/Quality of AV Material
- Confidence/Enthusiasm
- *Time Management
- Response to Questions
- Audience Interest

*Note that going under or over the prescribed time may result in reduction of overall grade.

WORK TERM PRESENTATION

STUDENT'S FEEDBACK FORM

Name of Presenter: _____   Date: _____

Introduction	Weak -> Strong	Additional Comments:
Agenda	☐☐☐☐☐	
Background / Problem Definition	☐☐☐☐☐	
Objective	☐☐☐☐☐	
Topic	☐☐☐☐☐	
Student/role	☐☐☐☐☐	

Organization of Material		Additional Comments
Logical Order	☐☐☐☐☐	
Internal Summaries/Transitions	☐☐☐☐☐	
Main Points Highlighted	☐☐☐☐☐	
Appropriate Conclusions/Recommendations	☐☐☐☐☐	
Referencing of Sources	☐☐☐☐☐	

Content		Additional Comments:
Appropriate Subject	☐☐☐☐☐	
Knowledge of Subject	☐☐☐☐☐	
Level of Challenge	☐☐☐☐☐	
Idea(s) Clearly Explained	☐☐☐☐☐	

Delivery		Additional Comments:
Posture/Presence/Appearance	☐☐☐☐☐	
Vocal Ability	☐☐☐☐☐	
Speed of Delivery	☐☐☐☐☐	
Mannerisms / Gestures	☐☐☐☐☐	
Eye Contact	☐☐☐☐☐	
Use/Quality of AV Material	☐☐☐☐☐	
Confidence/Enthusiasm	☐☐☐☐☐	
Time Management	☐☐☐☐☐	
Response to Questions	☐☐☐☐☐	
Audience Interest	☐☐☐☐☐	

OVERALL COMMENTS: (Strengths / Areas of Improvement)

_____

_____

_____

How would you rate this presentation?

☐ Unacceptable   ☐ Needs Improvement   ☐ Satisfactory   ☐ Very Good   ☐ Excellent

APPENDIX C   COMPREHENSIVE TECHNICAL REPORT

Introduction

The technical report is an important document for engineers. Engineers are expected to write reports throughout their careers. These documents may be written to analyse something, describe an existing process, or to document a decision. During their work terms, students may be expected to complete several different types of reports.

The Comprehensive Technical Report work term communications deliverable is typically based on a project that the student has worked on for a significant portion of their term.

This appendix describes the general format for a Comprehensive Technical Report. The format is very similar to that of a Short Technical Report, such as that written in Work Term 1.

The Comprehensive Technical Report

The Comprehensive Technical Report should be based on some aspect of the student's job or the industry in which they are working. Ideally, the report should illustrate a substantial amount of independent student conducted research, design, or analysis to permit the drawing of detailed conclusions and recommendations; however, if the student's placement does not allow such a study, some other form of report, such as an operating manual or software documentation may be permissible. The report must reflect/contain a significant amount of the student's original work. It must also contain a significant amount of the student's writing, rather than the student using a prescribed template that limits description and analytic discourse.

The word 'comprehensive' indicates that the report explores a topic thoroughly and goes beyond just describing a process or concept, as was required in earlier work terms. This report is meant to substantially address a topic.

Examples of comprehensive technical reports include (the list is not exhaustive):

- Feasibility study of a design, project, or technology - a study based on testing and analysis that presents information to determine if a proposed project or solution should proceed.

- Evaluation of a process/product - describes how a process/product was evaluated, assessed, or monitoring, presents findings, and makes recommendations about future decision-making and process/product improvement.

- Environmental impact review/environmental assessment – an evaluation of the anticipated environmental impacts of a project, considering positive and negative socio-economic, cultural, and health impacts.

- Project/Progress report – an assessment of an ongoing project that outlines the goals that have been met, resources utilized, challenges faced, and if the project is projected to be completed on time and on budget, decision-making about the project's future.

- Investigation report – informs a reader about an incident; identifies and defines the problem, describes the investigation methods, the outcomes, and proposes actions to mitigate the situation.

- Research paper – describes the writer's own research on a topic, including the analysis and interpretation of findings.

For students interested in submitting, as their communication component, documents such as a user's or operations manual, a procedure, or a test plan, the content must be based on work that was substantially completed by the student.

There are many good reference books available either in a book store or library to assist in report writing. One example is "Writing in the Technical Fields: A Practical Guide", by Thorsten Ewald, published in 2017. Students are encouraged to select a good reference book and use it throughout their undergraduate career.

Topic

Students should discuss their topic with their supervisor early in the term, as the supervisor may have a particular topic or project that the organization would like documented. Sometimes a report may not be required by the employer, which allows the student the opportunity to explore a topic of their interest. If the student has difficulty selecting a topic, they should discuss it with their ASM-CE.

An outline of the proposed report should be submitted to the ECEO using the Work Report/Presentation Outline form in MyMUNLife.

General Report Guidelines

Please follow the general guidelines listed below:
- Report should be a **minimum of 4000 words** (excluding illustrative figures and tables).
- When determining report length, word count only includes the body of the report (introduction to conclusions or recommendations, if included). It does not include the back matter (reference list, appendices), or any front-matter (material before the introduction).
- For reports longer than twice the indicated minimum word count above, students should contact their assigned ASM-CE to discuss further.
- Print the report single sided.
- Use 12 point font. Use a professional font such as Arial, Times New Roman, or similar. The same font should be used throughout the report, including the letter of transmittal.
- Print double spaced, and leave a 1.5" margin on the left for binding, and 1" margin on the other three sides.
- Acronyms should not be used in the Executive Summary and must be introduced the first time they are used in the body of the report even if a List of Acronyms is included.
- Students are expected to write concisely, but grades may be affected for reports that do not meet the required minimum.
- Pages should be numbered, restarting with page 1 for the Introduction. Page numbers should be printed on each page.
- Sections and sub-sections should be numbered.
- References/bibliographies/etc. should be sections following the body of the report.
- References should be credited using in-text citations throughout the report.
- Bind the report using a suitable method that protects the cover page and a back cover. This does not include a three-ring binder, duo-tang, or stapling.
- Technical reports written as part of the communications requirements for work terms must be written in a formal technical language style. This means that students should use concise

technical language, avoiding vague, meaningless words, redundant phrases, colloquialisms, and jargon, and write from the **third person** point of view.
- Terms such as "I" and "We" should only be used in the letter of transmittal, and contractions are not permitted.

Structure

The structure of a formal report, in the order that the main sections are found, is as follows:
- Cover Page
- Letter of Transmittal
- Title Page
- Executive Summary
- Table of Contents
- List of Illustrations @
- List of Acronyms @
- Statement of Scope@
- Introduction
- Main Sections and Subsections
- Results@
- Conclusions
- Recommendations
- List of References
- Bibliography @
- Appendices @

Items marked @ above are considered underline optional based on the report; other sections are required for most technical reports.

Very often parts marked @ above are combined with one of the major parts; for example, the scope and foreword may become part of the introduction. They may also be combined, or they may be eliminated entirely; for example, acknowledgments, list of illustrations, a separate statement of scope, and bibliography are often not included. Whether these parts are included as separate items, combined with one of the major sections or with each other or left out entirely depends on the objectives of the writer, the complexity of the report and the needs of the reader. They should not be included unless there is a reason for doing so.

Detailed Description of Technical Report Sections

Cover Page (and Report Title)
Provides a binding for the report, and identifies the report title and writer of the report.

Guidelines:
- The cover page of the report may be plain, or specially designed for the project.
- It may be cardstock with the printing on it, or under a protective plastic page.
- It is analogous to the cover of a text book, and limited information is provided.
- Should include the report title, the name of the author, and student number at a minimum.

Report Title

The title is an important feature of the report. Words like evaluation, feasibility, progress, status, and impact are useful in the title.

Guidelines:
- It should provide a window into the subject.
- It should be specific enough to give the reader a good idea of what the report is about but not so long that it is confusing.
- It is acceptable to take certain grammatical liberties in a title if it improves the result. For example, the following title "The Design and Construction of Concrete Structures" may be written as "Concrete Structures: Design and Construction."

Letter of Transmittal
A brief covering letter addressed to the first official reader (usually an ASM-CE).

Guidelines:
- Should be bound with the report inside its cover.
- Is addressed to the person for whom the report was prepared (ASM-CE).
- Provides a reference to the reason the report was prepared, the scope of the report, and a brief digest.
- It may draw attention to specific aspects of interest to the intended reader.
- A letter of transmittal must accompany each work term communications deliverable.
- If permitted, a student may choose to use company letterhead or should include the employment address as a return address.

A typical letter is included in the Work Term 1 Course Outline.

Title Page
Identifies the topic and ownership of the report.

Guidelines:
- The full title of the report should be centered and placed at the top of the page.
- The name of the person for whom the report was prepared and the name of the organization for which the report was prepared is placed under the title.
- The name of the originating organization and name of the person preparing the report is placed third on the page.
- The date the report is presented (or issued) and any other identifying reference, such as a report number, is placed on the bottom of the page.
- The title page should be neat and simply laid out so that the above four essential elements are clearly seen.
- The title page should have visual appeal and a professional appearance.

Executive Summary
Provides a **one-page** summary of the entire report. No reference is made to any part of the report; an Executive Summary is complete unto itself and is the most widely read section of the report. Many readers rely on it to decide if they need to read the full report.

Guidelines:
- The Executive Summary must stand on its own; it is based on the report and should not include any information, conclusions or suggestions not stated in the report.

- To maintain the Executive Summary's ability to stand independently from the report avoid phrases such as 'The report includes…'
- It should not cite any references nor refer to any figures or tables.
- It is placed after the title page and before the Table of Contents.
- It is the first numbered page of the report being given by the Roman numeral 'i'.
- It should be on a page by itself and must not exceed one double-spaced page.
- If the material does not require the full page, it is centered top to bottom to give a neat appearance.
- It must be brief, but complete; it should present the essentials of the report, and not refer to it.
- It should contain a statement of some or all of the following:
  - what the report is about (purpose, scope, problem, background),
  - the work that was undertaken,
  - the results obtained,
  - the main conclusion, and
  - the main recommendations and their costs.
- It is prepared after the report is written.

Table of Contents
Provides a quick guide to the contents and organization of the report and helps the reader locate specific information quickly.

Guidelines:
- A report must contain a Table of Contents.
- It is located just after the Executive Summary as page 'ii' of the report.
- The headings of each main section and subsection are listed according to the page on which they begin.
- Appendices are usually separated from the other contents and are designated by numbers or letters, the appropriate title or heading and the page number.

List of Illustrations
If the report uses many illustrations (charts, graphs, pictures, etc.), it is best practice to provide a List of Illustrations after the Table of Contents to help the reader find specific illustrations.

Guidelines:
- The List of Illustrations should include the titles of the illustrations along with the related page numbers.
- The list of Illustrations can also be divided into separate lists: a List of Figures and a List of Tables.
- Citations for the illustration do not need to be included in the List of Illustrations.

List of Acronyms
Easily identifies a large number of acronyms. A report that contains a large number of acronyms may include a list of them at the beginning of the report.

Guidelines:
- This list should be in alphabetical order of the acronym in order to make the acronyms easier to locate.
- Acronyms must still be typed out in full the first time they are presented in the body of the report.

Acknowledgments
Provides a statement of thanks or recognition to those who have assisted in the development of the report.

Guidelines:
- A separate section for acknowledgments can be justified only if there are a great many persons or organizations to be given credit. It is more typically used for books and publications than for reports. Acknowledgments, if given, should be specific.
- Statements like 'I would like to thank everyone who assisted me with this report' are meaningless.

Statement of Scope
Provides a statement outlining the limitations or scope of the report that may be imposed by the authority requesting the report or by the person preparing it.

This statement can be related to cost, time, depth of study, methodology, equipment, and any factors to be specifically included or omitted.

A separate statement of scope is sometimes included with reports prepared by consultants for a fee. The scope of the report may also be given in the letter of transmittal, introduction and the Executive Summary of the report. A separate statement of scope should not be included unless there is a specific need for it.

Introduction
Introduces the subject of the report, as the reader may be from a different branch of the discipline and may require some orientation to the subject of the report, providing the reader with all the background necessary to properly read the report.

Guidelines:
- The introduction should include general background information that describes the company, department or agency, introduces the subject, describes the circumstances leading up to the decision to prepare a report on this subject, what work has been done on the subject previously and by whom, and why the study or project is necessary.
- A statement of purpose that defines what the study or project (or report) is to achieve, and who authorized it and the specific terms of reference should be included in the introduction.
- The introduction should also include a statement of scope that outlines any limitations imposed on the project and states who imposed them. Factors such as cost, time, depth and extent of study methods, equipment, factors to be included or omitted, should be noted here.
- Page numbering should be re-started with the introduction section as page 1.

Main Sections and Subsections
Presents the evidence (facts, arguments, details, data, test results, etc.) necessary for the purpose of the report. There are no absolute rules regarding the content of these sections and there is no prescribed organizational structure to follow. Its content and structure are dependent on the scope of the report and the writer's choice in how logically to present the material.

Guidelines:
- Appropriate descriptive titles should be used for each main section/subsection.
- Information should be presented using a logical and purposeful section and subsection structure to ensure that main points are emphasized and the reader can follow the flow of information.

- The order of the information within each section and subsection will determine how easily the reader will follow the text.
- An author must decide what the reader is most interested in knowing, what else the reader needs to know, and must answer any questions that arise.
- The discussion should **address the objectives of the report** and thoroughly discuss each one.
- It should **summarise the results (if any)** and **explain how the results are important**.
- The content should be designed with readability in mind. It is important to determine what content is best presented using a written paragraph, as a list, in a table, or as a figure. See also the Illustrations section below.
- Each main section should start on a new page.
- Students must bear in mind the technical knowledge of their readers (their supervisors and the ASM-CE, faculty member or PEGNL volunteer) and prepare the text accordingly. Students should use language and describe concepts in a way that allows the reader to easily follow the report.

Illustrations (include as needed)
In technical reports, illustrations are used as required throughout the report to provide vital information that may be difficult to portray using text alone (they do not form a separate section of the technical report). Illustrations do not replace written text; they supplement it. The writer must decide whether to use an illustration and, if so, what type of illustration to use and where to locate it.

They are often referred to in a report as "Tables" and "Figures". Tables present text or numbers in the form of columns and rows. Figures are any illustration that presents data in a graphic form.

Guidelines:
- Illustrations can include drawings, figures, tables, sketches, schematics, flow charts, diagrams, graphs, and photographs.
- An illustration should be used if it will help the reader understand the material.
- Illustrations meant to assist the reader in understanding the subject belong in the text as close as possible to the point of reference. The narrative at this point must refer to the illustration.
- Each illustration should be numbered sequentially and provided with an appropriate title or caption. Titles should be kept short, and the figure explained in the text.
- The illustration should be simple, neat, clear, easy to read (large enough font size), and easily understood.
- If an illustration is relevant and helpful to the discussion can fit into the body of the report, place it in the body of the report rather than in an appendix.
- Large complex illustrations such as folded drawings or charts belong in an appendix. Down-sized versions or schematics can be placed in the text.
- Illustrations should be referenced using an in-text citation following the text in the caption of the image.
- Each illustration should be referred to in the text to provide context and a reason for inclusion.

Results
Presents the findings of the report based on the information gathered.

Guidelines:
- Should simply state the findings.
- Finding should be stated without bias or interpretation.
- Findings should be arranged in a logical sequence.

Conclusions
Provide a synthesis of the ideas discussed in the report, demonstrate the importance of the ideas discussed and propel the reader to a new or enlightened view of the subject matter. Conclusions sum up the key points of the main Sections and Subsections, the essential features of a design, or the significant outcomes of an investigation.

Guidelines:
- Everything presented in the conclusions must have been discussed in previous sections of the report.
- Be as brief as possible with main points drawn from the primary discussion.
- Be presented clearly and accurately in a neat format, for example, in point form and numbered.
- Satisfy the requirements established in the introduction (background, purpose, scope).
- Never advocate action.

Common Pitfalls:
- Conclusions and recommendations are sometimes inadvertently placed in the same section under the heading 'Conclusions and Recommendations'. This practice is not recommended because there is a danger that a conclusion may be taken for a recommendation or that a recommendation may be stated loosely or weakly.
- Similarly, conclusions and results should not be confused. Results are obtained by applying a method or approach to the problem under consideration. Conclusions are drawn from the results by applying the criteria or guidelines established in the main sections and the introduction.

For example, a study of the condition of all concrete bridges in St. John's might find that some were in poor condition with cracks, exposed reinforcement steel, spalling, etc. These are results, not conclusions. If criteria such as safety, maintenance, and life expectancy are applied, a conclusion might be that certain bridges are in poor condition and have a limited life expectancy.

Recommendations
The recommendations section presents the preferred plan of action.

Guidelines:
- An action plan is presented with several courses of action described, each with attendant advantages, disadvantages, costs, limitations, and ramifications.
- The above-noted items should have all been previously discussed and conclusions are drawn based on the criteria being applied.
- Be specific, definite and clearly stated.
- Be strong and advocate action.
- Satisfy the requirements established in the introduction.
- Follow logically from the conclusions.
- Be presented in a logical order, e.g., by importance, chronologically, functionally.

In the example of the bridge study previously presented, the student may have concluded that it will cost $1.3 million to replace a badly deteriorated bridge. To repair the same bridge to an acceptable standard will cost $300,000 now and $20,000 a year in maintenance. The bridge will have to be replaced eventually. The recommendations should state which option is preferred and, briefly, why.

List of References
Common to all communication components. Please refer to the Referencing Appendix below.

Bibliography
Provides an additional list of related material for further reading, if applicable. A bibliography may be included in a formal report if it is justified, but it should not be confused with the List of References.

Guidelines:
- Bibliography entries are not numbered.
- Entries appear in alphabetic order of authors' names.

Appendices
Appendices contain large, complex drawings, source documents, data, specifications, test results, cost comparisons, etc. This information provides broad base support for what is said in the discussion, but the report can be read intelligibly without it.

Guidelines:
- Appendices appear in the order in which they are first referred to in the report.
- Appendices are considered to be individual documents; each may be paginated separately, starting at 'i'.
- Each appendix is given an identifying letter, e.g., "Appendix A", "Appendix B", etc.
- All information provided in an appendix **must** be referred to in the report.

Evaluation

The Comprehensive Technical Work Term Report will be assessed according to the following:

Structure and Format
Structure
- Cover and Title Page are included
- Letter of Transmittal is included
- Table of Contents is included and appropriately formatted
- List of Figures / List of Tables is included (if sufficient number included in the report)
- List of Abbreviations is included (if the report contains sufficient number)
- If report is confidential, each page is stamped confidential

Format and Organization
- Report folder/binding is appropriate
- Appropriate font used
- Correct use of page numbering
- Length of the report is appropriate to topic and scope; not shorter than minimum requirements
- Layout is easy to read
- Section headings are used and are numbered and named appropriately
- Main sections and sub-sections have a logical order
- Appropriate sections are included
- Sections properly formatted and contain appropriate material
- Tables and figures are properly formatted

- Tables and figures are properly cross-referenced in the text

Technical Quality
- Topic is suitable
- Introduction is thorough (general background, purpose, and scope included)
- Main sections cover the scope of report appropriately/thoroughly
  - sufficient technical discussion/content,
  - information and analysis is accurate,
  - content is consistent with stated purpose of the report,
  - tables and figures accurate and complete,
  - content of tables and figures is explained to the reader,
  - thorough/depth of treatment is appropriate,
  - original
- Conclusions are drawn from the main discussion points
- Recommendations are based on conclusions; do not contain material that was not previously discussed
- Appendix/ices are included (if required by the content/topic) and introduced in the main sections and subsections

Executive Summary
- Written as a stand-alone piece
- Neither too long or too short
- Key material is included
- No material is introduced that is not discussed in the report
- Includes conclusions and recommendations
- No acronyms are included

Referencing and Resources
- Consistent referencing style is used throughout (e.g., IEEE, APA)
- Number of references listed is sufficient
- Material is consistently/properly referenced
- In-text citations are included where required
- Use of direct quotes is avoided
- Variety of reference material is used
- Reference material is taken from a valid source; has authority

Communication Effectiveness
- Use of I, we, you, etc. is avoided
- Use of contractions is avoided
- Vague language is avoided; material is qualified and quantified
- Ambiguous pronouns are avoided
- Unnecessary wordiness and redundancy is avoided; writing is concise
- Figures of speech are avoided
- Run-on sentences are avoided
- Definitive language is supported with evidence
- Word choices are appropriate

- Formal writing style is used
- Acronyms are correctly defined
- Punctuation is correct
- Spelling is correct
- Grammar is correct
- Parallel construction is used in sentences and lists
- Sentence structure is correct
- Paragraph structure is appropriate (one main concept with supporting details)
- Writing is clear
- Content is written for the appropriate audience
- Tables and figures included where appropriate to support descriptions

APPENDIX D   LEGACY LIBRARY

Introduction

The Legacy Library deliverable provides an opportunity for senior students to share what they have learned through their co-op experiences through two recorded videos. The videos are intended to be viewed by junior students in Engineering One, but can be accessed by any undergraduate student in the faculty. The videos intend to provide tips on useful topics that senior students have learned and found to have impacted their co-op journeys. They are also an opportunity to practice oral skills and allow senior students to use presentation software effectively.

Students can complete a legacy library on their final work term (Fall Semester WT 5 or WT6) only. A student is required to speak with their ASM-CE to obtain approval to complete the Legacy Library. Students who have demonstrated weakness in one of the required types from past work term records may be asked to submit that type again and will not be permitted to choose the Legacy Library option.

Topics

The topics for your submission are up to you, based on your experiences. Below are some suggestions as a guide to get you started.

Resumes:
- How to write a meaningful bullet.
- When should you use your portfolio, and how to attach it?
- How to make your resume stand out.

Cover Letters:
- How to write an effective paragraph answering the question "why did you apply to this job?"
- How to communicate your relevant skills in your cover letter.

The Job Competition:
- How many jobs should you apply for?
- Strategies when applying (early work term vs later).

Interviews:
- How to prepare for <insert interview question>.
- How to prepare for an online interview.
- How to ace a technical interview.
- What questions do you ask at the end of an interview?
- What do you say if you don't know the answer to a question?

Networking:
- What are some good networking strategies you have used?
- Joining student teams: what are the benefits?

The Workplace:
- The art of effective communication and listening.
- How to ask relevant/effective questions.

- Fostering professional relationships.
- Thriving in diverse workplaces.
- How to get more work/showing initiative.
- Preparing for the first day. Making a good impression.

International Experiences:
- Budgeting and planning to travel for a work term?
- Apartment hunting techniques and living expense considerations.
- How to immerse yourself in new cultures (workplace/social).

Your Co-op Experience:
- How can the co-op office help?
- What is the most important piece of feedback/advice you have received?
- Pushing outside your comfort zone.
- How to develop/improve a skill on a work term?
- Managing workplace expectations and mental health.

Submission Guidelines

Students are required to submit:
- Cover Page
- Cover Letter (See example below) which explains why the topics were chosen. The cover letter should be addressed to their assigned ASM-CE.
- Two videos (1:30-2:30 minutes) covering topics as described above
- [Legacy Library Consent Form](#)

In your videos, it is important to watch the use of company names. You can highlight your employer in a positive way, but you do not want to use the names of employers negatively. Do not use supervisor names or names of your colleagues at work. Ensure you have permission from your employer to speak about projects/duties (if applicable). You can generalize if need be.

Video Structure

The videos should be between 1:30 - 2:30 minutes each and must be on two different topics taken from the list below. Students with a topic not listed below should first contact their ASM-CE to discuss. Each video needs to include:
- Introduction: first name, discipline
- Discuss your topics by sharing approximately 2-3 points on a specific topic selected from the list
- Closing: a final thought or idea to sum up the ideas presented
- References (if required)

Video Tips

- Practice the speech several times before recording, be enthusiastic, engaging, and clear
- Use a neutral background (walls clear of distracting items behind you, such as light switches, dressers, light shades, windows, etc.) or add a professional virtual background.
- Look professional and smile to feel confident and genuine.
- Stand or sit up straight and engage viewers by looking at the camera.
- Do not use PowerPoint slides, but a 'prop' is acceptable if it helps explain the idea (such as a whiteboard or text overlay); you must be visible at all times.
- Ensure you have proper lighting – consider using a light ring, lamp, or work with natural light.
- Check your sound quality. Use appropriate sound equipment and check phone/computer settings. This is a good video! Get PERFECT Audio Without a Microphone! https://www.youtube.com/watch?v=Ht4eRsLxaho
- If you are using acronyms, make sure you correctly define them for your audience.
- Focus on one aspect of a topic, rather than being broad.
- Watch the video before submission to ensure the quality of the image and sound is appropriate.
- This video, TED's secret to great public speaking, is very helpful: www.ted.com/talks/chris_anderson_teds_secret_to_great_public_speaking

Video Formatting Guidelines

- Do not compress your video clips. Do not upload videos to other media channels.
- If you are using closed caption, ensure it is accurate and correct.
- If you need to cut and start again, make sure this is done seamlessly so that it is not too noticeable. Or add a smooth transition.

Example Cover Letter for Legacy Library

Company letterhead (if permitted)

Date of submittal   Your address at work

(Name of Student's ASM-CE this work term)
Engineering Co-operative Education Office
Faculty of Engineering and Applied Science
Memorial University of Newfoundland
St. John's, NL, A1B 3X5

Dear (ASM-CE's full name):

During this work term (Engineering 006W), I was employed with CompuAct as a front-end developer. This was my sixth and final work term with the company, and I was supervised by Mr. Roger Python, P. Eng., the company's lead software engineer.

The topics chosen for my videos are: 1. How to effectively answer the question "Tell me about yourself" in an interview; and 2. Why is it important to include a portfolio in your application package.

The reasons why I chose these topics are as follows:

1. Having a confident, concise, and well-rounded answer with relevant information connecting your experience to the job ad will lead to the ideal response for this question. Additionally, it offers an opportunity to leave a lasting impression and connect with your interviewer on a more personal level, so practicing this out loud is the most effective way to achieve that. I struggled to answer this question correctly in many of my early interviews, which cost me opportunities. I strongly believe that the advice presented in my video will help junior students succeed.

2. Adding a portfolio of your project work or a personal website to your application package is very beneficial. It enables the reviewer of your resume to gain a broader understanding of your technical skills through visuals. In my video, I explain how using simple tips and tricks to effectively showcase your project work can improve your chances of landing an interview. I created a website during my fourth work term, which provided me with more space to freely discuss the outcomes of my technical projects and engineering teamwork. Since applying to jobs with my portfolio, I now find myself at the top of the candidate pool. It is never too early to start.

I am pleased with the video content and quality, and I enjoyed the process of recording them. I have learned a great deal about software X and how it can be used to produce videos and sound that will be beneficial to me in the future. I hope that my videos are helpful for students to navigate through their co-op program.

If there are any questions concerning this submission, I would be pleased to discuss them with you.

Yours truly,

Signature (by hand or electronically)

Your Name

Evaluation

Student videos are evaluated by the ASM-CE on the following:

Delivery
- Posture/Presence/Appearance – face the audience not the screen, avoid slouching, awkward seating, keeping hands out of pockets, avoid playing with hair, etc.
- Business casual attire.
- Vocal Ability – speak clearly and enunciate words.
- Speed of Delivery – maintain a moderate rate of speech.
- Mannerisms / Gestures – avoid excessive hand movements or filler words (umms).
- Eye Contact – maintain good eye contact with the camera throughout.
- Show confidence and enthusiasm by varying tone of voice.

Quality of Video
- Image quality, clarity
- Sound and lighting effectiveness
- Distracting background, video glitches, inappropriate use of transitions, noticeable cuts in video feed
- Effective use of audio-visual aids
- Cleanliness of additional features used (overlays, music, slides, etc.)

Time Management
- The videos should each be 1:30 – 2:30 minutes in length. Completing the presentation outside of this time will impact the final evaluation.

Content
- Is the topic appropriate and effective for the intended audience?
- Are the points made coherent and flow well, and are they easy to understand?
- Did the student include all the content required? (Introduction, main points, summary/end).
- Proper recognition of content that is not yours by including references as needed
- Did the student effectively deliver a concise message?
- Met submission guidelines.

APPENDIX E   CO-OP EXPERIENCE REFLECTIVE REPORT

Introduction

One of the most used frameworks to discuss experiential learning is the Kolb Experiential Learning Cycle. In it, after completing an experience, the learner reflects on that experience, analyzes it, and puts together plans to improve it in the future. This report allows senior students in their final work term to engage in that activity by writing six reflective essays every other week on a series of topics that should help them gain further understanding of their work term experiences.

Essays Topics

In addition to an Introduction, there are six (6) topics below. The student should write a 400-500-word essay (~2 pages) on each topic.

Introduction (250 words)
- o Explain why the Reflective Report was chosen and what you hope to get out of it.

1. Exploration of engineering-related career choices
   - o Focus on changes to your career path since the CDR was completed in WT3.
   - o List career goals from CDR – have they changed, what happened to change that perspective.

2. How have co-op experience and academic courses supported each other's learning
   - o Discuss using a tool like: DEAL[1] ; or, What, So What, Now What.
     - ▪ How has school prepared you for your work terms?
     - ▪ How have work term experiences prepared you for the upcoming final school term?
     - ▪ Provide at least 3 examples of how one has impacted the other.

3. Skills developed/self-assessment through all work terms
   - o Focus on changes since the CDR by listing the skills to be developed and how plans from the CDR were implemented.
   - o Look at the End of Work Term Feedback form from your last work term and select one skill that needs further development. Dive deep into this skill and put together an actionable and comprehensive plan on how to develop it to where you need it.

4. An understanding of professionalism and its context in the broader environment
   - o Consider all of your work terms and discuss one or two specific things about the work environment or way your employer conducted business (ex., work culture, teamwork, professionalism, safety, consultancy, etc.) that impacted you the most – positive or negative. What are you going to bring forward from this into your future career?

5. Mixed Bag. Discuss any two of the following, or select a similar topic about your work terms, and show a connection to career goals
   - o Talk about how safety has impacted your work terms.

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[1] DEAL - **Describe** the experience, **Examine** experiences through lenses like how they met expectations, revelation about interests or strengths, career goals, academics decisions etc., **Articulate Learning** – describe what was learned and goals for the next experience to improve and learn

- o What are the most important factors of writing an application package, and how are you going to use this to apply for full-time work/future career/study?
- o What is your view of life-long learning? Has your opinion about further education changed since Engineering One?
- o What is your most positive attribute? How have you developed this, and how does it impact work?
- o What is the most unexpected part of being in your major – you chose this in Term 3, is it everything you expected? How have your work terms influenced this?
- o How have you balanced your degree program to date (co-op/academic terms), and how has this evolved through the program? Work/life balance?
- o Challenge/Reward – What was the biggest challenge you experienced during a work term, and what did you learn from it (what might you do differently in the future)? What was the most rewarding thing from your work terms, and how might you incorporate this into your future work experience?
- o What trends do you see shaping the future of engineering in your field?

6. The final entry should be reflective of the overall events of the program and final work term:
    - o If you were starting Engineering One again, is there anything different you would do career-wise (networking, relationships, etc.)/on the job (performance, employer relationship, other areas of business) /application methods? What advice would you give to junior students just starting?
    - o Discuss final work term, including workplace learning, employer feedback, how well objectives were met, and a personal assessment of the work term.

General Report Guidelines

Please follow the general guidelines listed below:
- Use 12-point font. Use a professional font such as Arial, Times New Roman, or similar. The same font should be used throughout the report, including the letter of transmittal.
- Print double-spaced, and leave a 1.5" margin on the left for binding, and 1" margin on the other three sides, if applicable.
- The student may submit essays every other Friday, or can submit the first 3 essays, and Introduction, on the Report Outline due date and the last 3 essays on the last day of the work term (see date here: https://www.mun.ca/coop/programs/engineering/work-term-dates-and-forms/)

Structure
The first submission should contain a Cover Page, Letter of Transmittal, and Title Page. This is not required for subsequent essays. A list of references and appropriate in-text citations should be included as needed. Each essay should have a header with the essay name. Sections/sub-sections and section numbering should be included as necessary.

Evaluation
The Reflective Report will be assessed according to the following:
- Structure, content, and length
- Use of figures and referencing/citations as required,
- Reflective thought and communication effectiveness.
- Fulfilling the assignment: do the essays adequately answer the question(s) accurately and completely?

- Reflection and thoughtfulness: do the essays demonstrate thought and analysis of self or situation?
- Communications effectiveness: are essays written and communicated, and articulated clearly?

APPENDIX F PORTFOLIO

For students choosing a Portfolio it is important they have the work reviewed by their employer to ensure **no confidential** material is included as the Portfolio is meant to be used as an example of their work, and it must only include material that can be shown to potential future employers.

A portfolio is a showcase of items that the student has personally created or produced. It is not a list of items in which the student has had limited or cursory input.

Purpose

The purpose of the portfolio is to demonstrate skills, talents, abilities gained and accomplishments achieved during the current work term. The portfolio is a tool that will help document relevant academic, work related and personal achievements.

Content

Students should follow the General Report Guidelines as described in the appendix on Short Technical Report for the Course Outline in Work Term 1. The following is a list of items that should be included in a portfolio:

- All front matter as outlined in the Work Term 1 Course Outline
- A two-to-three-page introduction and background on the material presented.
- Description of any training courses and lectures attended whether formal or informal.
- Commendations or written feedback received.
- List of any formal meetings attended and or chaired.
- Sample of original designs, sketches, drawings well indexed and organized.
- Copies of written documents or reports.
- Personal qualities and employability skills assessments.
- A résumé and transcript.
- Samples of work done.
- Samples of achievements in volunteer work, recreational activities, part time jobs, or other extracurricular involvement.
- A summary of work search including lists of contacts, industry research, employer research, etc.
- Job description for each position held.
- Copies of performance review forms.

A portfolio is a personal document; therefore, the contents will depend on the individual student's objectives, goals and experience.

Evaluation

The Portfolio will be assessed according to the following:

Format and Organization
- Cover and Title Page
- Letter of Transmittal
- Table of Contents
- Proper binding (if submitted in hard copy)

- Appropriate font
- Correct use of page numbering
- Logical order of material
- Appropriate sections included

Technical Quality
- Appropriate introduction of the material presented
- Suitable explanation of background and scope
- Suitability of samples provided
- Sufficient analytical content
- Information and analysis is accurate
- Thorough/depth of treatment is appropriate
- Variety of work
- Technical ability demonstrated
- Original

Communication Effectiveness
- Writing is in the 3rd person
- Use of contractions is avoided
- Word choices are appropriate
- Formal writing style is used
- Acronyms are correctly defined
- Punctuation is correct
- Spelling is correct
- Grammar is correct
- Sentence structure is correct
- Paragraph structure is appropriate (one main concept with supporting details)
- Writing is clear

APPENDIX G ALTERNATIVE SUBMISSIONS

General

Students who have completed the four mandatory work terms have flexibility in selecting their communications component. Typically, the topic should be technical in nature and should be related to the work being completed. The length of these deliverables should reflect the level of effort and technical depth expected of senior students on one of their last work terms.

Students may choose the Comprehensive Technical Report or Oral Presentation (with Presentation Summary Package), as completed in earlier work terms, or an alternative document or report. Some examples and how they may be reviewed and evaluated if they are submitted for Work Term 5 communications component are described below. If a student wishes to submit a report type that has not been described, they are required to speak with their ASM-CE to determine the type of report and obtain approval. Students who have demonstrated weakness in one of the required types may be asked to submit that type again.

Examples of Alternative Submissions

OTHER REPORT TYPES

Engineers are required to write many different types of reports, and there is more flexibility in work term 6. Some suggestions for types of reports students may write to meet the work term requirement are below:

- Project Management Document – The documentation required for adequate planning, scheduling, and tracking projects can vary significantly from project to project depending on the industry, size of the project, and regulations. Many projects would include some or all of the following components: Business Case, Project Charter, etc.

- Tender Document - Tender documents are completed by suppliers typically in response to a request for proposal or invitation to tender from an organization looking for goods or services. Depending on the size or scope of the request, these documents can be split into individual packages where each package focuses on different parts of the contract.

While the specific components of Other Reports may be different from the more typical Comprehensive Technical Report as described in the Work Term 4 Course Outline, evaluation will be much the same and students should refer to that appendix for more information.

Evaluation
Students will be evaluated against the quality of the submission, the proper inclusion of all required components, and the quality of the communications. Other Reports will be assessed according to the following:

- Structure and Format
- Technical Quality
- Summary (if included)
- Referencing and Resources
- Communication Effectiveness

APPENDIX H   REFERENCING

Introduction

Referencing is the act of acknowledging the sources of material and information used in a document. Not properly including these acknowledgements may be considered plagiarism. Citations and a corresponding reference list are how referencing is achieved. The citation is included in the body of the writing to indicate the exact material that originates from another source, the List of References includes the details on where that source can be found.

Citations and a List of References are used together to provide the appropriate information to indicate what material is from another source, and the details to document the original source. They are required for all sources of information included in the report – print, online, and word of mouth (personal communication). When using material found online, students should be careful to rely only on valid, trustworthy sites. Wikipedia, for instance, can be changed by any user and is therefore not a valid site for obtaining technical information.

There are four main reasons why writers need to reference material within their reports, including:

1) It allows proper credit to be given to the authors and/or source of the information cited and allows the reader to distinguish between the writer's own ideas and the referenced information.
2) It demonstrates that the writer has researched the claims and ideas put forth and supports these ideas with evidence and information from other sources.
3) It allows the writer to share their information sources with readers so that they can find that same resource material, if needed.
4) To avoid concerns around plagiarism, and the possible negative consequences.

General Guidelines

Please follow the guidelines listed below:
- The List of References should only contain entries for works cited directly within the report. That is, each reference in the list must have at least one in-text citation.
- Information from the sources should not be "cut and pasted" but instead paraphrased or summarized to offer support for the writer's own ideas.
- Even when a citation is included, copying material directly from the source without changing the wording is considered plagiarism if the material is not in quotation marks.
- Technical reports will rarely, if ever, include information enclosed in direct quotes. Direct quotes are only used when the information cannot be paraphrased (re-written in a student's own words) without altering the meaning.
  - To decide if a direct quote should be used, writers need to ask themselves the following question, "Can I re-write this in another way and still maintain the original message or meaning?"
  - If the answer to this question is yes, don't quote – paraphrase.
- All diagrams or images that are not the personal creation or capture of the author must be correctly cited.
- The List of References is only for works cited directly within the report.
- A Bibliography is a list of documents that have been read, but not directly or indirectly quoted.
- A Bibliography should only be included as needed, and in addition to the List of References.
- Work reports rarely have, or need a Bibliography, they almost always have a List of References.

Information obtained from conversations or interviews must be cited in the report but these sources do not appear in the reference list. This can be done in one of two ways, as follows:

- Introduce the paraphrased information similar to this: "In an interview with John Smith on August 22/18, he suggested …" OR
- Add the following citation at the end of the paraphrased information: "….. (Personal communication, John Smith August 22/18)".

Additional guidelines on referencing can be obtained from the library or online at:
https://www.mun.ca/writingcentre/understanding-plagiarism/
https://www.mun.ca/engineering/undergrad/technical_communications/CitingAndReferencing.php

Referencing Using IEEE

While students may choose any referencing style, however for consistency and versatility, the ECEO strongly recommends the IEEE style. For IEEE the List of References is listed in the order the material is first presented in the report.

An example of the IEEE format from the style guide https://ieeeauthorcenter.ieee.org/wp-content/uploads/IEEE-Reference-Guide.pdf is shown below.

Book
[#] Author, Title, volume, edition. City, State, Country: Publisher, year.
Example:
[1] D. A. Taylor, Introduction to Marine Engineering, 2nd ed. Oxford, UK: Butterworth Heinemann, 1996.

Internet:
[#] Author. "Name of Page." Website. URL (accessed month day, year).
Example:
[1] Newfoundland and Labrador Department of Industry, Energy and Technology. Canada-Newfoundland and Labrador Offshore Petroleum Board (C-NLOPB)."
https://www.gov.nl.ca/iet/energy/petroleum/offshore/cnlopb/ (accessed July 23, 2021).

E-mail
[#] J.K Author, private communications, Abbrev. Month, year.
Example:
[3] J. Aston, private communication, Apr 2020.

Printed Internal Documents
[#] Name of Manual/Handbook, x ed., Abbrev. Name of Co., City of Co., Abbrev. State, Country, year, pp. xxx-xxx, unpublished.
Example:
[4] Motorola Semiconductor Data Manual, Motorola Semiconductor Products Inc., Phoenix, AZ, USA, 1989, unpublished.

Webpages or Files on an Intranet

[#] J. K. Author (or Abbrev. Name of Co., City of Co. Abbrev. State, Country). Name of Manual/Handbook, x ed. (year). Accessed: Date. [Intranet].
Example:
[5] Antcom, Torrance, CA, USA. Antenna Products. (2011). Accessed: Feb. 12, 2014. [Intranet].

Non-recoverable, unpublished sources typically do not require a reference or citation; however, since many work term reports are so reliant on internal workplace information, work term reports should formally reference such information to promote familiarity with referencing. This is explained in greater detail on the Engineering Technical Communications page as listed above.