

## 4. Deliverables & Milestones

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The milestones to be attained during each project round and their associated deliverables are:

### 1. Letter of Proposal

The problem statements for each of the projects will be provided by your supervisors. These statements may be vague or somewhat misleading, as in many industrial situations we may not actually know what the problem is. It is part of your job to assess the problem definition before forming a plan of action.

At the beginning of each of the two projects, every group will meet (via Zoom, if necessary) with their respective supervisor to discuss their problem. It is important that groups achieve full understanding of the problem to prepare a proposal. Aim to produce a proposal that will allow the client (your supervisor) to feel that your team is the best for the job. A literature search and some background reading may be required before you undertake the work. This should be done as soon as possible, even before the initial meeting.

The letter of proposal should be concise and reflect the criteria outlined in the problem definition. It should include:

- *objectives/expected accomplishments*
- *a rationale for the proposed plan of action*
- *timetable*
- *personnel assignment*
- *equipment requirements*
- *cost estimates (if necessary)*

Since the proposal is only a portion of the required elements for each laboratory, it should be short and to the point (3-4 pages), but inadequate preparation will delay the laboratory work.

A brief oral presentation (via Zoom, if necessary) explaining your proposal will be done for your supervisor prior to the start of any laboratory work. You must gain approval of your proposal from your supervisor before any work takes place in the laboratory.

It is not expected that once a proposal has been given, groups will follow it rigidly. However, if groups see reason to change their procedure, they should first contact their supervisor.

Additional information about preparing proposals can be found in your technical communications text. Download and review a proposal evaluation sheet from the “*CHEE 420 Course Manual*” module on the course onQ website to learn the criteria for which grades are awarded.

The Letter of Proposal (WORD.docx format) is to be submitted via onQ by 4:00 p.m. the DAY BEFORE you orally present the proposal to your supervisor.

## 2. Laboratory Work

The laboratory period for this course, is comprised of a 3 hour timeslot, twice a week. This may be tight for some lab projects. So in this case, preparatory work, including a plan of action, prior to the lab period, will be important.

*You must read and follow all safety requirements listed in the “Safety” section of the course manual on the onQ website. CHEE 420 students must have valid WHMIS certification.*

See the [Queen's University Environmental Health & Safety Page](#) and [www.msds.com](http://www.msds.com) for links to Material Safety Data Sheets.

## 3. Final Oral Presentation

Duration: 15 to 20 minute presentation, followed by a brief question period.

Audience: Course Instructor, Project Supervisor and, in some cases, classmates with related projects.

Time/Date: oral presentation schedules may be found in the “Course Manual” module on the course onQ website.

Presentations will be done via a Zoom meeting with the Course Instructor and your Project Supervisor. The Course Instructor will send you an email with an invitation link for the Zoom meeting, at least 48 hours in advance of your assigned presentation time.

All team members must prepare and present equal amounts of the content.

A copy of the presentation slides (.pdf or .pttx) must be submitted via onQ before the assigned presentation time.

## 4. Final Report

By now you should have a good understanding of the required components of a technical report. The recommended format for formal technical report writing can be found in the “CHEE 420 Course Manual” module on the course onQ website.

Since the written report is a result of the combined effort between the group members, a one page summary of member contributions is required. This should ***identify all of the significant tasks involved in your completed work (research, lab and writing), and apportion the responsibility taken by each member.*** A bold statement that “all members contributed equally” is ***NOT acceptable***. For this purpose, your group may want to consider a log book. You may record all hours spent working on the project, the nature of the work, such as research, reading, laboratory tests and simulation runs, as well as the results of all meetings and problem-solving or decision-making sessions. ***This summary is a method for identifying the significant tasks involved in your project and the success of your team in working together.***

**Estimated Length: maximum of 20 pages (not including appendices).**

**The Final Report (WORD.docx format) is** to be submitted electronically via onQ by the assigned deadline (hard copy not required). See due dates by viewing the appropriate Project Round Work Schedule in the Course Manual module on the course onQ website.

*Please note: All formal reports and the corresponding grades will be reviewed at the end of term by the course instructor. As a result, grades will be subject to change.*

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