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General Comments

A website has been set up under the Department of Chemical Engineering's URL: chemeng.mcmaster.ca. The site contains tools to assist in writing the laboratory reports, learning the use of statistics in laboratory studies, addendums to laboratory experimental procedures, forms, etc. The site also maintains the most up-to-date course outline. It is from that outline which this course will be evaluated.

The overall percentage for the course will be converted to a letter grade using the scale recommended by the Office of the Registrar. The instructor reserves the right to adjust marks up or down. Graded reports will be kept in the department for a minimum of one year, in accordance with Senate regulations.

Specific Note on E-mail

This course communicates through your McMaster e-mail account (not avenue). It is important that your account maintain sufficient free space at all times to accept e-mails from the instructor and TAs. Return of reports, grades, or even communication in regards to missed work forms will only be sent once. If they are rejected by the account of the student due to it being full, the responsibility lies with the student to remedy the missed communication. In the case of an email reply to a McMaster Student Absence Form (MSAF) which stipulated a new deadline for the missed work – the assignment/report/makeup quiz will still be considered late after that new deadline passes, even though the student did not receive notification because their email account was full. A second MSAF form will not be accepted for work which a previous MSAF was already applied. **Students are reminded that it is the policy of the Engineering faculty that students are responsible to follow up with the instructor directly once filing an MSAF, and know what actions will be required to make up the missed work** – it is not the responsibility of the instructor to follow up on such matters.

Getting Started

At the start of term, a first lecture always precedes the laboratory experience. The first lecture provides information on how the lectures and labs will proceed and instructions on your safety in the labs. In addition to attending the first lecture, what should you know to start out in the course:

1. Purchase the courseware from Titles Bookstore
2. Find out what labs you will be doing from the laboratory schedule. This schedule is usually available on the course website as well as being posted in front of JHE A106. But not till the second week of term.
3. Ensure that you have safety glasses and goggles
4. Ensure that you have retained your copy of Technically Write from CHE 2G3
5. Set up an account on Turnitin.com.

Come to the first lab with your courseware and having read the procedures for your experiment. Delays will make it difficult to get the data needed to write the report and the lab room does not stay open past 5:30 pm.

Course Description

LECTURE TIME:

A one-hour lecture per week with mandatory attendance. Topics of laboratory safety, statistical analysis of experimental data, proper use of graphs, report writing, and technical communication skills. Short assignments pertaining to the topic of the lecture will be completed during each lecture and handed in at the end of the class. The assignments will account for **10%** of the final mark.

Only **one** missed assignment may be made up and only provided the student has completed a McMaster Student Absence Form. Also, requests to make up a missed assignment must be made before the examination ban begins – on the day (12:01 am) the ban starts, all assignments still considered missed will be given a grade of zero.

USING AVENUE:

It is important that students understand how the AVENUE system is used by the teaching staff to avoid problems throughout the course. The instructor (and possibly the TAs) will use this medium to post announcements and provide grades on a monthly basis. It is not for e-mail communications. Neither the instructor(s) or TAs will monitor those e-mail accounts on AVENUE and messages sent will not be received. **DO NOT** send reports or the WorkSmart Campus certificate to the teaching staff by AVENUE's e-mail system – they will not be received and will be **TREATED AS LATE**, being penalized for the delay till they are sent properly. Use the McMaster e-mail addresses mentioned at the start of this outline for submitting reports and the certificate, or any important communications (such as a MSAF form).

SAFETY TEST (WorkSmart Campus):

A major component of this course involves workplace safety. The Ministry of Labour has a website designed to train and evaluate a user's knowledge in safety. The website www.WorkSmartCampus.ca allows a student from McMaster Engineering to sign in and go through training and testing which amount to ~ 4 hours of time. There are three modules, Health & Safety 101, Safe Smart, and finally Passport to Safety. A series of mini tests are used to determine that a student has understood the content. A perfect grade of 100% is required in the mini tests in order to progress to the next module and these mini tests can be re-taken as many times as needed. The final test in Passport to Safety can **ONLY BE TAKEN ONCE** and it evaluates your total comprehension of the safety course. When you complete the Passport to Safety test, you will be able to print your certificate which will display your marks.

The safety test can be taken at any time in the term. Instructions for logging in will be handed out in class. The certificate with your grade on it provided by WorkSmart Campus must be handed in

to the instructor of ChE 3L2 or the Chemical Engineering Departmental Office (JHE 374) by no later than:

March 2, 2012

Those certificates indicating the course was completed by this date, but were not handed in for any reason to the instructor will be subject to a 10% penalty.

Note: As this test can be taken anytime up to the due date, no excuse (MSAF, Medical or otherwise) will be accepted. **A grade of zero for the test will be given if not completed on time.**

LABORATORY TIME:

Each student will take part in three (3) laboratory experiments, each spanning three days of three hour duration. Groups of ~3-5 students will work together in the lab, to perform the experiment. Participation in the laboratory at all times is mandatory since a key component of this course involves developing data collection and data analysis skills as well as group communication. A standard deduction of 10 marks will be applied to students who *miss a laboratory period or enters the lab 15 minutes after it has already started*. This is 'per lab day' (i.e. 3 days missed = -30 marks from a lab report worth 100 marks) and will be applied to the corresponding lab report.

Note on time: JHE/A106 is to be **closed at 5:30 PM SHARP**. Appropriate time management skills are important to a researcher – failure to exit the lab at the above time could result in a loss of 5% off the grade of the lab report.

MISSED LABORATORY SESSIONS:

A student must complete the full 9 hours in the lab for data collection and provide a full report on their results and analysis, for each of the three experiments to finish this course. If medical reasons prevent the student from attending the lab sessions then they must schedule with the instructor and lab manager to complete these requirements at a later time. Missed time in the lab is made up over the summer term and the report is due again one week after completion of the experiment.

Snow Day Policy

As this is a winter course, a snow day is always a possibility. In the event that an **official** snow day is called by the university, the following applies:

Due Preliminary reports – due the first day back at 12:00 Noon

Due Laboratory reports – due the first day back at 4:00 PM

Missed Lecture – instructor will adjust schedule and inform students at next class

Missed Lab – instructor will discuss this during the next lab time

Safety in the Lab

It is essential that all students work in a safe environment. Guidelines on Laboratory Safety are listed in the courseware for this course. As well, two lectures on safety will be given during the lecture time. Safety glasses (or goggles depending on the lab) are required in the laboratory at ALL times (this does not include the computer cluster). At all times during the proceedings of the lab, a student must behave in a safe, responsible manner. No cell phones or texting devices are allowed in the lab area (excluding the computer cluster) as they distract and potentially interfere with equipment – see note at end of this outline concerning these devices in greater detail.

Safety infractions (includes use of mobile devices) will normally be dealt with as follows:

- First infraction – oral warning
- Second infraction – written warning
- Third infraction – failure on that laboratory
- Fourth infraction – withdraw from the course

This order may not be followed depending on the seriousness of the student's action and will be left at the discretion of the instructors of the course.

Reports in the Course

Preliminary Reports

A preliminary report must be submitted for the **first two days** out of a three-day lab. This preliminary report (1 report per group) must be e-mailed to their respective lab TA by 12:00 noon the day after the day of the lab. A maximum of one page of text (shorter is better) stating the title, group members, date, and preliminary discussion; plus calculations and figures are allowed. Figures and/or tables should include appropriate statistical analysis; for example, y (flow rate) is linear in x (rotameter setting) as $y = mx + b$ with a 95% confidence interval of $m = \dots \pm \dots$. The corresponding 'preliminary discussion' could be as brief as: "Flow rate is linear with the rotameter setting". The purpose is to oblige students to begin data analysis early and give the TAs and instructors the opportunity to provide assistance. The TA will return the report, at the start of the next lab period; the mark will count in your overall grade. One person in each group should be designated as the data analyzer who will be responsible for submitting the report at the time given above.

No excuse will be accepted for failing to submit the preliminary report, sickness or otherwise as this is a group exercise and someone should have been available to hand it in. 2.5 marks will be taken from the lab report mark (out of 100) for each preliminary report missed.

Lab Reports

There are three lab reports for this course. The first two are intended as group reports to give time to the student to become familiar with the expectations of the course and see how different members in their class approach aspects of report writing. Team work is an important aspect of

being an engineer, and these two group reports are intended to provide students with the opportunity to hone their teamwork skills. The third report is to be done individually and carries the most weight on a student's grade since it is most representative of what the student is capable of achieving as a technical writer.

NOT HANDING IN ALL THREE REPORTS WILL RESULT IN FAILURE OF THE COURSE.

Missed Lab Report

A student may only be excused from a lab report for cases of extreme illness or injury resulting in hospitalization, as they will have had a full week after completion of the lab to write the report. A doctor's note indicating hospitalization must be provided to the instructor in such a case.

If lab report missed was a group report: the student must submit a 5-page report (no figures or tables) covering results and discussion which is new and bears no similarity to the group's report. Figures and tables from the group's report do not need to be reproduced but may be included in an appendix if wished. Two (2) references meeting the requirements of this course are required (as opposed to the five references required in a normal report). The student's grade will be entirely based on this 5-page document. This report is due one (1) week upon providing a Missed Work form to the instructor with the latest date of acceptance being 4pm on the last Friday before the Tests and Examination Ban starts according to the current Undergraduate Calendar.

If lab report missed was an individual report: a full report in accordance with the requirements of this course will be submitted no less than one (1) week upon providing a Missed Work form to the instructor with the latest date of acceptance being 4pm on the last Friday of the University's spring examination period according to the current Undergraduate Calendar.

Students **must** have the permission of the instructor to write this report, and they must have participated in the lab in collection of the data to receive permission. Missing more than one group report for any reason will result in an automatic **failure** of the course since the course requires a demonstration of team skills both in the lab as well as in writing up the experiments.

Preparing to Write

The courseware provides a detailed guide on how to write a technical laboratory report for this course (as well as ChE 4L2). Included in the courseware is a short memo after the guide on 'Do's and Don'ts which have been generated over time in the course. The course website sometimes includes additional resources that might prove helpful. Students are expected to have held onto their technical writing text from ChE 2G3 which has some useful comments, particularly on grammar and style.

Finally have a look at the grading rubric used by the TA to mark a report. Note that marks are assigned to the clarity of discussion, appropriateness of the given analysis, style and presentation of the report, and to the use of proper grammar and spelling.

Writing the Report

The report is expected to present your results (tables or graphs), provide a comparison of how your data confirms or opposes theoretical expectations, and should give a clear, concise discussion of your results including an analysis of possible error sources.

Each report will consist of a:

- Cover page (experiment title, date, first & last names of all persons involved plus student numbers)
- Table of contents (for 3L2 there is no abstract, introduction or experimental)
- Results & Discussion
- Conclusions
- References (minimum of 5 peer-reviewed references not including the courseware or website URLs)
- Appendices (must include a sample set of calculations as Appendix A)

Results and Discussion: 8-page limit (not including tables and figures), double spaced text. The other sections can be as long as they need to be. Times Roman 12 font.

References: A minimum of 5 references are required. None of these references may be websites (i.e.URLs) since they are not necessarily peer-reviewed. Not included in this count is the courseware.

Appendices: Not all data should be included in the Results and discussion section of the report, else clarity of the discussion will be lost. Often the excess data can be collected into appendices and referenced from within the Results and Discussion section **PROVIDED IT IS RELEVANT**. Good organization is required so that a reader can easily find the information being referenced. The appendices should be labeled in order, ex. Appendix A, Appendix B, etc. **Appendix A is for a sample set of calculations**, telling the reader how the values used in the report were arrived at – **this is a requirement** while other appendices are at the discretion of the student.

Checklist: A checklist can be found on the website for students to check that they have completed the report properly. It is NOT required but rather a helpful tool. You will need Adobe Acrobat Reader Version 8 or later to use the form.

Submitting the Report

Two copies of a final report must be submitted before the due date:

- A copy – named correctly - for grading is sent to the instructor
- A copy is uploaded to Turnitin.com

An electronic copy of the report (in Microsoft Word 2003 or 2007/2010 format) is to be sent directly to the instructor's McMaster e-mail account by 4:00 PM on the day it is due. Students are encouraged to send the report with a **return receipt** so that they have acknowledgement it was sent to the correct e-mail address. In order to track documents and organize appropriately, all files submitted must adhere to the naming format below. **Those not named in this manner will be returned to the student(s) to be re-named, and treated as late if past the report deadline. The report will receive the same penalty as if it were late – mentioned below.**

Format: Report#-Lab Day-Experiment Name-Submitting Student's Lastname.doc

The time-stamp on the received e-mail will determine if the document was handed in on time. The hand-in date is one week after the completion of the lab for each lab section. Failure to hand in the report on time will result in a penalty of 20% per day late.

	Due the Week Starting
Lab 1 (group)	January 30, 2012
Lab 2 (group)	February 27, 2012
Lab 3 (individual)	March 19, 2012

In addition to the report sent to the instructor for grading, an exact copy of the report is to be submitted to **Turnitin.com** on the same date as the report was due. The penalty for lateness (10% per day) applies to the submission of a copy of the final report to Turnitin.com. However, the timestamp on the document at Turnitin.com can not be used to excuse lateness for submitting the report for grading to the instructor after its due date.

Note: McMaster e-mail system DOWN – submit as soon as possible once e-mail system is working again. Timestamp of file submitted to Turnitin.com will be used to determine if the report was handed in on time, in such a case.

Using Turnitin.com (www.turnitin.com)

Turnitin.com is a professional service for detecting plagiarism provided free of charge to the students. Students may use an alternative professional service for reviewing their reports for plagiarism with permission of the instructor and at the student's own expense. When using Turnitin.com, you will have to create your own user profiles and login to Turnitin. The class ID for 3L2 is 4279962 and the enrollment password is **3L22011** (it is case-sensitive). If you already have profiles with Turnitin, you can login and enroll in the class. Turnitin.com accepts files in the following format: MS Word, WordPerfect, PostScript, PDF, HTML, RTF, and plain text.

Originality report – The website will produce an originality report within 24 hours of your submission which you can review. The site has been set up so that you can continue to re-submit your report until the deadline.

Getting Reports Returned

There is routinely a problem with students not having sufficient account space to receive their marked lab report back (see the note on Use of Email at the start of this course outline). Students

should be mindful that there must be at least twice as much space in their account free as the size of the file. If a file was not returned and it was received by the instructor in the first place, then the student will have to make arrangements to see the instructor and bring a data stick to obtain the file. Due to time constraints, the teaching staff can not continually try re-sending a file by e-mail.

Reviewing a Graded Report

All reports are kept by the department according to McMaster Senate rules for a minimum of 1 year. The general procedure of the class is that graded reports (using the track changes feature in Word) will be returned to the submitting student. All reports are archived by the instructor for 1 year. No one may request a report which they themselves did not write.

Important Comments on the Group Lab Reports

Completing the Report

This task requires that those individuals who worked in the lab together to collect the data must now work again as a team to pull together the report. The submitted report must be complete regardless of problems within the group while it was being written, including medical and personal problems. However, the final mark given to the report may not be received by all persons in the group equally (see Peer Assessment below).

Peer Assessment Form

When all members of a group do not equally contribute to the report, it is possible to petition the instructor to have the report's grade distributed differently among the group members. This is started by completing a peer assessment form (found on the website) where a ranking is given on the percentage of work contributed by each team mate. The assessment form is e-mailed directly to the instructor. The instructor will then request assessment forms be completed by all members in that group. Similar ranking by the majority of members will be required for the instructor to proceed further, which may include interviewing members, either as a group or individually.

As accused non-contributing members will be required to prove that they did participate, it is recommended to the other group members that they do not share the final report. And all members are advised to retain e-mails, especially those indicating their contribution of information to the report.

Professionalism Policy

A question of unprofessional conduct can sometimes arise, particularly in regards to group lab reports, but also for the preliminary reports. Group reports must be handed in completed regardless of whether all members contributed or not. However, when one or more team members impede the creation of a lab report, a penalty may be levied by the instructor upon those individuals, in excess of other penalties. Examples of unprofessional conduct include:

- Not responding to e-mails, phone calls, or verbal requests for data, analysis, or text contributions in a timely manner (medical illness or personal/family problems are NOT an excuse for not replying to one's group)

- Not providing ‘agreed upon’ analysis or sections of text till just before the report is due, thus causing other members to replicate the work in case it is not handed in on time.

Evidence of unprofessional conduct must be supplied by the other members of the group, and any penalty lies at the discretion of the instructor. **This penalty is applied in addition to the peer review assessment noted above, not included within.**

Note: The burden of proof rests with the members of the group – be sure that you can give evidence that the accused can not dispute. For example, often the accused will be asked to give an oral report to the instructor on their contribution – do not give this person access to the final report if you want to prove they didn’t contribute. E-mails are also a good record.

Special Note: Excused work by the Associate Dean’s office (i.e. MSAF) does not exempt a student from having this penalty apply.

Course Policies

Recording devices in lecture and labs – No video/image recording devices are allowed in the lecture hall and tutorials without written permission by the instructor.

Cell Phones and Texting Devices –

In Lecture:

- Neither phones nor texting devices may be used in lectures as they are distracting and can disturb others. Students are required to leave the room if they must be used.

Lab JHE A106:

- **Absolutely no electronics may be brought into the actual lab area by a student. They may interfere with other devices in the lab and may distract a person, leading to a hazardous situation. Cell phones may be used in the computer cluster area but sparingly. Excessive use and a student will loss 5% off of their report grade due to lack of participation on that day (this error can accumulate to 15% if done all three days of an experiment).** Ask Justyna or the instructor if this is not clear to the student.

Policy Reminders:

The Faculty of Engineering is concerned with ensuring an environment that is free of all adverse discrimination. If there is a problem, that cannot be resolved by discussion among the persons concerned, individuals are reminded that they should contact their Department Chair or the Sexual Harassment - Anti-Discrimination Officer, as soon as possible.

Academic Integrity:

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information the various types of academic dishonesty please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

The following illustrates only three forms of academic dishonesty:

- 1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.*
- 2. Improper collaboration in group work.*
- 3. Copying or using unauthorized aids in tests and examinations.*

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines or any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity for comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and note any changes.

Special Note: *The electronic version of this course outline supersedes all other versions, such as one provided in the courseware as that one is never complete when being submitted to the printers.*

