Recommendations to Mitigate and React to Academic Misconduct in Engineering Courses

March 2, 2011

(developed by the Committee on Academic Integrity consisting of H. Heys, B. Tucker, L. Wroblewski, L. Pittman, A. Rose, A. Fisher, and G. Montano)

The intent of this document is to suggest approaches that instructors may take to improve the culture of academic integrity within their courses, as well as provide advice on how to deal with academic misconduct when it does happen. The document was prepared by the Committee on Academic Integrity of the Faculty of Engineering and Applied Science.

The document identifies key elements which may be considered within the offering of a course, when tackling the issue of academic misconduct. For example, important aspects to consider when addressing the problem are (a) an emphasis on academic integrity in the course outline, (b) clear identification of the expectations for student work such as assignments, labs, and reports, (c) the necessity of policing course work, and (d) what to do when cheating is found.

The document is divided into two major sections. The first section addresses actions that can be taken to mitigating (even hopefully eliminate) cheating in a course; the second section makes suggestions related to discovering and reacting to academic offences.

Section A – Mitigating Cheating in Engineering Courses

A1. Emphasizing Academic Integrity on the Course Outline

It is recommended that the course outline distributed at the beginning of the term contain several sections related to academic integrity. The following is suggested.

• Include a special section emphasizing the importance of academic integrity. Example wording is:

"Academic Integrity: Students are expected to conduct themselves in all aspects of the course at the highest level of academic integrity. Any work for which the student is claiming credit should be original work and the source of any submitted material which is not original must be given proper credit. Any student found to commit academic misconduct will be dealt with according to the Faculty and University practices."

• Clearly indicate that a disciplinary process will be applied should a student be caught cheating. For example, wording such as the following might be appropriate:

"Lab reports must represent original work produced by the students in a group. Submitting copied work is considered academic misconduct and will be dealt according to Faculty policies and regulation 11 of the General Academic Regulations (Undergraduate) of the University Calendar."
This may include the referral of the case to the Academic Misconduct Review Committee of the Faculty of Engineering.

• Refer to the Codes of Conduct for the University and the Faculty, either by quoting them directly or pointing to them in the Calendar or on the website:

The Memorial University of Newfoundland Code
"All members of the Memorial University of Newfoundland Community, which includes students, faculty, and staff, shall treat others with respect and fairness, be responsible and honest, and uphold the highest standards of academic integrity."
[found in the University Calendar, Section 2 of General Information]

Engineering Statement of Expectations of Student Conduct
"Like Professional Engineers, engineering students are expected to behave in a professional manner at all times. Students are encouraged to conduct themselves in a manner consistent with the PEG-NL code of ethics. MUN has two sets of rules which deal with inappropriate behaviour by students. The first set deals with academic offences such as cheating while the other set deals with non-academic offences such as disruptive behaviour in class. Both sets of rules can be found in the University Calendar under Regulations. It is strongly recommended that students read and follow these rules because the penalties can be severe, the severest being expulsion from the University."
[found online at www.engr.mun.ca under "Student Code of Conduct"]

• Clarify the expectations of individual/group work on assignments and labs. Potential wording might be:

"You are encouraged to discuss assignments with classmates. However, all solutions of a completed assignment must reflect the original thought and thorough understanding of the student. In no circumstance should a student submit a solution or part of a solution copied from any other source, including fellow classmates and solutions from previous years. Any student caught copying will receive a substantial mark penalty and may be referred to the Academic Misconduct Review Committee of the Faculty of Engineering for disciplinary action. If you have any doubt over what constitutes copying, please contact the course instructor for clarification."

• State clearly the policy associated with exams aids, such as formula sheets, open books, and calculator policy. (See the associated section below for a more thorough discussion on this topic.)

A2. Emphasizing Integrity in Class and Throughout the Term

When the course outline is distributed during the first week of lectures, be sure to review the sections relevant to academic integrity. In addition, when handing out course work such as labs and assignments, emphasize again the importance of academic integrity. Ensure that lab instruction manuals include wording that clarifies the expectations for students, particularly in relation to group work and originality of the submitted lab report.
A3. Assignment Practices to Reduce the Incentive to Cheat

Many issues of integrity within engineering courses are related to the practices involved in the setting and marking of assignments. The following suggestions might be helpful in mitigating breeches of integrity in the context of assignments.

• Consider making use of unmarked assignments (i.e., problem sets) motivated by periodic quizzes. For example, instead of having a course evaluation scheme with 15% allocated to assignments, have problem sets and 3 quizzes, with each quiz worth 5%. If necessary, TAs can be enlisted to help in the marking of quizzes.

• If you do have marked assignments, when setting the due date for assignments, try to avoid clashes with other significant components (eg. midterms) in other courses. If possible, try to be flexible during the term if a request for an extension of a due date is made.

• Although it is not always practical to redesign assignments every year, try to avoid re-using assignments from previous years if possible.

• Be sure to give students assignment questions well in advance of due dates, so that they have adequate time to work on an assignment.

• Always ensure students have available all the appropriate tools (eg. software) to complete an assignment. Never put students in a situation where they need to use pirated software in order to complete an assignment!

• For courses which have a major project component, it may be worthwhile to have students sign and submit a form, such as the sample below, along with their report. This emphasizes the importance of integrity and clarifies the expected outcome for students that breech this integrity.

Project Submission Statement
(To be submitted with project report in ENGI XXXX)

My project in course "ENGI XXXX – The Design of Important Engineering Stuff" is new work produced entirely by me and is not the repetition of a project from a previous course or other context. Although my project represents a survey of work by other researchers, the organization and wording of my final report is entirely original. I understand that, if my report is found to contain any amount of copied material, this will be considered to be an academic offence and I will be assigned a mark of zero for the project component of the course.

_________________________________________________________

Student Name (printed)  Student Signature

________________________________________________________

Project Title
A4. Running Exams to Avoid Cheating

In a recent survey, a shockingly high number of students have indicated that they have observed cheating on exams. Many of these cases may have occurred due to inadequate rules and policing associated with exam aids. Such aids may include calculators (often only basic scientific calculators are allowed, but the policy not adequately enforced), formula sheets created by students or by the instructor, and open books (possibly including textbooks, notes, or other material). The following comments discuss all three scenarios.

Calculator Policy
Always make your calculator policy for quizzes, tests, and exams known, both placing it on the course outline and announcing it in-class. Be aware that compact electronic devices exist which are capable of storing formulas and text! If you decide that only basic scientific calculators are suitable for a test, ensure that you examine the calculator used by every student.

Formula Sheets
Student-generated formula sheets can be a bad idea. Students may cram on example problems and detailed theory and definitions, not just formulas. If you are concerned that students may put restricted things on a formula sheet, you could insist that they are collected with the answer booklet, but it may be possible for a student to switch formula sheets before they hand it in. And do you really want to review everyone's formula sheet for some sort of compliance? (Marking exams is challenging enough! Who wants to mark formula sheets as well?) If your course has a lot of formulas, the best approach may be for the instructor to generate a formula sheet to be used on a test and then post this sheet several days in advance of the test so that students are aware of what to expect.

Open Book Material
Open book tests and exams can lead to many problems related to academic integrity. It is clearly not practical to review the material students bring into a test in this circumstance. If a textbook is allowed, almost certainly some students will scribble many extra things into the book. It is really best to avoid an open book exam. Perhaps, an instructor-generated formula sheet can be used instead or, if tables from the textbook are required, print off copies of the appropriate pages and distribute them as part of the question paper.
Section B – Reacting to Cheating in Engineering Courses

B1. Policing Course Work

Nobody is keen to invest their professional energy into looking for cheaters. However, taking a few modest steps to police a course is reasonable. For example, ensure that TAs that are marking assignments and labs are on the lookout for copied or plagiarized work; insist that they bring suspicious pieces of work to your attention for evaluation. (Never rely on TAs to make final decisions about whether cheating has occurred.) For written reports, spending a couple of minutes, googling a few key phrases, could reveal many cases of plagiarism. As discussed in Section A4, always ensure that you have a practical policy on exam aids that can be adequately enforced.

B2. Dealing With Academic Misconduct When It Does Occur

When a student is caught cheating, the university has processes that must be followed in dealing with the circumstance. The appropriate regulations are given in Section 5.11 of the University Regulations in the Calendar. If you are not sure of the University's and the Faculty's policies consult either your Discipline Chair or the Associate Dean. All cheating on exams and major course components (worth 40% or more) must be immediately reported to the Associate Dean and cannot be dealt with by the instructor.

For all other cases of academic misconduct (even seemingly minor offences), it is highly recommended that the instructor, upon discovering the offence, immediately inform the student that he/she believes that a suitable resolution will involve the participation of the Academic Misconduct Review Committee. The AMR Committee is a Faculty committee whose mandate is review cases of academic misconduct and to make recommendations to instructors (or, in some cases, the Associate Dean) for disciplinary action. The student may not agree to involve the AMR, in which case the instructor may wish to suggest another resolution or may, instead, decide to involve the Associate Dean (Undergraduate Studies) in determining a resolution. In all cases, when a resolution is found, the Associate Dean must be informed of the details of the case. A rough outline of the process (from the instructor's perspective) is given below. Details of the process are found in the document "Proposal to Establish an Academic Misconduct Review Committee in the Faculty of Engineering" and the University Calendar, Section 5.11.
Process for Dealing with Academic Misconduct