Dawson College
Calculus II
201-NYB-05 Section 1
Summer 2008

Instructor: Yann Lamontagne
Office: 7B7
Telephone: (514) 931-8731 #1777
E-mail: ylamontagne@dawsoncollege.qc.ca
Website: http://www.obeymath.org
The website contains the solutions to the quizzes, tests and additional examples. It also has tests and solutions from previous courses.

Term Work: *(worth 50% of final grade)*:

3 Class Tests* worth a total of 42% on:

Test 1	**Thursday June 19th**
Test 2	**Thursday July 3rd**
Test 3	**Thursday July 17th**

4 Quizzes** worth a total of 8% on:

Quiz 1	**Thursday June 12th**
Quiz 2	**Thursday June 26th**
Quiz 3	**Thursday July 10th**
Quiz 4	**Thursday July 24th**

* Each class test is an hour and half long.

** Each quiz is 30 minutes long. The contents of the quiz is taken directly from the assigned excercises of the previous lectures.

Important: There will be no retests. If a valid medical note is presented the weight of the quiz or test will be transferred to the weight of the final examination.

Final Examination:
The final examination is held on the last day of class: **Monday, July 28 2008.**

DAWSON COLLEGE
MATHEMATICS DEPARTMNT
STUDY GUIDE
201-NYB-05 (CALCULUS II) – SCIENCE
PONDÉRATION 3-2-3

Prerequisite: Calculus I (201-NYA/201-NYA-05) preferably the Science version.

Objectives and   This course introduces the student to Integral Calculus, to the techniques of
Standards: integration and to some of the applications of integration to physical problems.
                          Another look at limits, and an introduction to the topic of infinite series are included.
                          Use of mathematical software will be explored. For more details, see pages 44 to 49 of
                          the Dawson Science Program.

Text: Calculus of a Single Variable – (8th edition)
                          by Larson, Hostetler and Edwards.

Reference Books: Calculus Single Variable – 5th edition by James Stewart
                          Calculus by Edwards & Penny,
                          Or any standard text book on Calculus of a Single Variable.

Methodology: Most sections use lectures and problem sessions. Some sections may use web-based
                          assignments.

Termwork: The term grade is based on a minimum of 4½ hours of tests/quizzes.

Final Examination: The Final Examination will be a supervised, comprehensive examination held during
                          the formal examination period. There are no exemptions.

Grading Policy: The grade shall consist of the greater of:
                          (A) Termwork for 50% and Final Exam for 50%
                                          OR
                          (B) Final Exam for 100%.
                          To qualify for (B) the student must have obtained at least 50% of the term mark and
                          must have written more than 50% of the class tests.

Calculators: A calculator without text storage or graphing capabilities is allowed for class test and
                          final exam.

Literacy Policy: "Problem-solving is an essential component of this course. Students will be expected
                          to analyze problems stated in words, to present their solutions logically and
                          coherently, and to display their answers in a form corresponding to the statement of
                          the problem, including appropriate units of measurement. Marks will be deducted for
                          work which is inadequate in these respects, even though the answers may be
                          numerically correct."

Formula Sheets: No formula sheet will be permitted for quizzes, class tests and the final exam.

Standard of Performance:
                          In order to pass this course the student must obtain a final grade of at least 60%.

Department Website:
                          For final examinations from previous years and other useful information consult the
                          departmental website.
                          Go to www.dawsoncollege.qc.ca → go to Departments → go to Mathematics → go to
                          Departmental Website → go to Help For Students.

<u>Religious Holidays:</u>

Students who wish to observe religious holidays must inform each of their teachers in writing within the first two weeks of each semester of their intent to observe the holiday so that alternative arrangements convenient to both the student and the teacher can be made at the earliest opportunity. The written notice must be given even when the exact date of the holiday is not known until later. Students who make such arrangements will not be required to attend classes or take examinations on the designated days, nor be penalized for their absence. It must be emphasized, however, that this College policy should not be interpreted to mean that a student can receive credit for work not performed. It is the student's responsibility to fulfill the requirements of the alternative arrangement.

Policy on Cheating and Plagiarism

Cheating in Examinations, Tests, and Quizzes
Cheating includes any dishonest or deceptive practice relative to formal final examinations, in-class tests, or quizzes. Such cheating is discoverable during or after the exercise in the evaluation process by the instructor. Such cheating includes, but is not limited to
a. copying or attempting to copy another's work.
b. obtaining or attempting to obtain unauthorized assistance of any kind.
c. providing or attempting to provide unauthorized assistance of any kind.
d. using or possessing any unauthorized material or instruments which can be used as information storage and retrieval devices.
e. taking an examination, test, or quiz for someone else.
f. having someone take an examination, test, or quiz in one's place.

Unauthorized Communication
Unauthorized communication of any kind during an examination, test, or quiz is forbidden and subject to the same penalties as cheating.

Plagiarism on Assignments and the Comprehensive Assessment
Plagiarism is the presentation or submission by a student of another person's assignments or Comprehensive Assessment as his or her own. Students who permit their work to be copied are considered to be as guilty as the plagiarizer.

Obligation of the Teacher
Every instance of cheating or plagiarism leading to a resolution that impacts on a student's grade must be reported by the teacher, with explanation, in writing to the Chair of Mathematics and to the Dean of Pre-University Studies. A copy of this report must also be given to the student.

Penalties
Cheating and plagiarism are considered extremely serious academic offences. Action in response to an incident of cheating and plagiarism is within the authority of the teacher.
Penalties may range from zero on a test, to failure of the course, to suspension or expulsion from the college.

Students' Obligations:
(a) Students have an obligation to remain informed about what takes place in their regularly scheduled classes. Absence from class does not excuse students from this responsibility.
(b) Students have an obligation to arrive on time and remain for the duration of scheduled classes and activities.
(c) Students have an obligation to write tests and final examinations at the times scheduled by the teacher or the College. Students have an obligation to inform themselves of, and respect, College examination procedures.
(d) Students have an obligation to show respectful behavior and appropriate classroom deportment. Should a student be disruptive and/or disrespectful, the teacher has the right to exclude the disruptive student from learning activities (classes) and may refer the case to the Director of Student Services under the Student Code of Conduct.
(e) Cellular phones, pagers and musical listening devices have the effect of disturbing the teacher and other students. All these devices should be turned off. Students who do not observe these rules will be asked to leave the classroom.
(f) Cell phones must also be put away. Text messaging is not allowed in class.

Specific Competencies	Learning Activities	Chapters, Sections & Problems in Text
(time – approx. 2 weeks)		
(̲ration by Substitution	Solve elementary integrals by substitution including algebraic, trigonometric, exponential and inverse trig functions.	4.1 prob. 35-42, 4.5 prob. 43-70 5.2 prob. 1-36, 5.4 prob. 85-98 5.7 prob. 1-20, 33-42
(time – approx. 2 weeks)		
Riemann Sums The Fundamental Theorem of Calculus	Find the area under a simple curve using Riemann Sums. Define the Definite Integral as the limit of a Riemann sum. Prove the Fundamental theorem of Calculus.	4.2 prob. 47-56, 4.3 prob. 3-32, 33-44 4.4 prob. 5-32, 67-72, 75-86, 89-92 4.5 prob. 71-82, 87-92, 101-108 5.2 prob. 61-64, 5.4 prob. 99-110 5.7 prob. 21-32
(time – approx. 3 weeks)		
Area and Average Value	Apply the Definite Integral to find: a) the area under a curve b) the average value of a function	 4.4 prob. 33-42, 97,99, 5.4 prob. 113-116 5.2 prob. 67-74, 5.7 prob. 62-68 4.4 prob. 43-52, 62, 63, 5.2 prob. 87-90,93
Numerical Integration	Approximate certain integrals using Simpson's rule.	4.6 prob. 1-20
Applications of Integration	Extend the notion of the Definite Integral to calculate: a) the area bounded between two curves. b) the volume of a solid of revolution using both the disk and shell methods c) Arc length (to follow Techniques of Integration) d) the work done in pumping fluid.	 7.1 prob. 1-32, 33-38 7.2 prob. 1-10, 23-40, 47-51, 7.3 prob. 1-11,13-20, 25, 26, 45, 46 7.4 prob. 1-14, 15-24, 29, 30 7.5 prob. 21-30
(time – approx. 3 weeks)		
(̲echniques of Integration	Integrate certain functions using the following techniques: a) Integration by Parts. b) Trigonometric Integral using Identities. c) Trigonometric Substitutions. d) Partial Fractions (linear, repeated linear and quadratic factors only).	8.1 prob. 1-46, 49, 50 8.2 prob. 1-36, 37, 38, 40. 8.3 prob. 1-64 8.4 prob. 1-46, 53, 54, 67, 68, 71 ,72 8.5 prob. 1-32, 41-48, 51, 52, 57, 58
(time – approx. 4 weeks)		
Indeterminate Forms	Evaluate Limits of Indeterminate Forms using L'Hopital's Rule	8.7 prob. 5-54, 65-70
Improper Integrals	Determine the Convergence of Improper Integrals.	8.8 prob. 1-50
Infinite Sequences	Examine the convergence or divergence of Infinite Sequences	9.1 prob. 1-20, 25-42, 47-68
Infinite Series	Determine the sum of an infinite series from the definition. Determine the convergence of a geometric series; applications. Tests for convergence of series of positive terms; Integral, Comparison, Limit Comparison and Ratio Tests.	9.2 prob. 1-28, 35-72 9.3 prob. 1-36, 37-42, 79-90 9.4 prob. 3-36, 45-48 9.6 prob. 1-4, 13-19, 23-29, 37-40 43-50, 83-86
Taylor Polynomials	Taylor Polynomials and Approximations.	9.7 prob. 13-30.