

Faculty of Science Course Syllabus**Department of Mathematics**

Math 2002

Intermediate Calculus II

Summer (B), 2018

Instructor(s): Tom Potter tom.potter@dal.ca Chase 327**Lectures:** 9:05 am – 11:55 am Studley LSC-PSYCHOLOGY P4263**Laboratories:** *None***Tutorials:** *None*

Course Description

Topics include multiple integrals and changes of variables, and vector calculus, with an emphasis on Green's and Stokes' theorems. The course also includes an introduction to second order ordinary differential equations.

Course Prerequisites

Math 2001, Intermediate Calculus I

Course Objectives/Learning Outcomes

To understand the concepts listed in the course description, and to demonstrate and apply that understanding by solving problems.

Course Materials

- *James Stewart, Multivariable Calculus, 8th edition.*
- *Course information available on <https://dal.brightspace.com>*

Course Assessment

Assessment will be made up of the WeBWork assignments, in class quizzes, a midterm, and a final exam. See below for details.

Component	Weight (% of final grade)	Date
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Tests/quizzes*Midterm, 15% (Wednesday, July 25, 9:05 am to 10:30 am).**In-Class Quizzes, 10%.****Final exam** 35% (Wednesday, August 15, 9:05 am to 11:55 am).****Assignments** Will be on WeBWork. Worth 40%.*

Conversion of numerical grades to Final Letter Grades follows the Dalhousie Common Grade Scale

A+ (90-100)	B+ (77-79)	C+ (65-69)	D (50-54)
A (85-89)	B (73-76)	C (60-64)	F (<50)
A- (80-84)	B- (70-72)	C- (55-59)	

Course Policies

Missed quizzes will not be excused without a valid reason. Make-ups will be at the instructor's discretion. Missed midterm will result in the value of the midterm being allotted to the final exam.

Collaboration on the homework assignments is permitted, but it is recommended that you try all the problems on their own, first.

You may use software to verify your homework answers, but make sure that you know how to work out the solution without software, and that you understand each of the steps. Software is not permitted on the quizzes or exams.

Office Hours: 9am—11am, every Friday until the Final Exam, in the Learning Center of the Chase Building (main floor), or by appointment.

Course Content

Lecture 1, Wednesday, July 4: Course Policies and Information; §§15.1—15.3; 15.5 Review of double integrals, Introduction to Triple Integrals

Lecture 2, Monday, July 9: §§15.5—15.7 Surface Area; Introduction to Triple Integrals; Introduction to Triple Integrals in Cylindrical Coordinates

Lecture 3, Wednesday, July 11: §§15.7—15.9 Triple integrals in Cylindrical and Spherical Coordinates, Introduction to Change of Variables

Lecture 4, Monday, July 16: §§15.9—16.2 Change of Variables in Multiple Integrals; Vector Fields; Introduction to Line Integrals

Lecture 5, Wednesday, July 18: §§16.2—16.4 Line Integrals; The Fundamental Theorem for Line Integrals; Introduction to Green's Theorem

Lecture 6, Monday, July 23: §§16.4—16.5 Green's Theorem; Introduction to Curl and Divergence

Wednesday, July 25

Part 1: **Midterm, 9:05am—10:30am** (covers Lectures 1 through 5);

Part 2: Lecture 7, 10:45am—11:55am §16.5 Curl and Divergence

Lecture 8, Monday, July 30: §§16.6—16.7 Parametric Surfaces and Their Areas; Introduction to Surface Integrals



Lecture 9, Wednesday, August 1: §§16.7—16.9 Surface Integrals; Stokes' Theorem; The Divergence Theorem

Monday, August 6, 2018: Natal Day—University Closed

Lecture 10, Wednesday, August 8: §§16.10—17.2 Summary of Higher-Dimensional versions of the Fundamental Theorem of Calculus; Introduction to Second-Order Linear Equations; (If time permits,) Introduction to the Method of Undetermined Coefficients

Lecture 11, Monday, August 13: §§17.2—17.3 Nonhomogeneous Linear Equations—Method of Undetermined Coefficients; Applications of Second-Order Differential Equations

Final Exam: Wednesday, August 15, 9:05 am to 11:55 am (covers Lectures 1 through 10).