

**MAST 219**  
Multivariate Calculus II  
*Winter 2017*

- Instructor:** Dr. Lakhdar Aggoun, Office: LB 915-7 (SGW), Phone: 848-2424, Ext. 8562  
Email: [lakhdar.aggoun@concordia.ca](mailto:lakhdar.aggoun@concordia.ca)
- Office hours:** Tuesdays, Thursdays, 10:30-12:15; Wednesday, 12:00-13:00.
- Prerequisites:** MATH 264/MAST 218.
- Text:** *Multivariable Calculus*, 8th Edition by J. Stewart, (Brooks/Cole, Belmont, CA, USA).
- Assignments:** Assignments are *very important* as they indicate the level of difficulty of the problems that students are expected to solve and understand. Therefore, every effort should be made to do and understand them *independently*. The assignments will be corrected and graded; they are worth 10% of the final grade. The assignments and solutions will be posted on my web page from week to week. Assignments are to be submitted on paper in class. Late assignments will not be accepted.
- Web Resources:** Many excellent animated illustrations to the text of the book are collected at the site [www.stewartcalculus.com](http://www.stewartcalculus.com), see TEC (Tools for Enriching Calculus) for the edition 8E. Regular use of this resource is much recommended.
- Use of Computer Algebra System:** It is optional but much recommended to install and use Maple. The computer tools can be used to verify and illustrate any analytical results you get while doing your assignment problems.
- Calculators:** Electronic communication devices (including cell phones) are not allowed in examination rooms. Only calculators approved by the Department (with a sticker attached as proof of approval) are permitted in the examination rooms during mid-term and final. The preferred calculators are the **Sharp EL 531** and the **Casio FX 300MS**, available at the Concordia Bookstore
- Tests:** One-hour midterm test covering the first six weeks will be given in week 7 (or later) weighing 30%. **There is no make up for a missed test.**
- Final Grade:** The higher of the following:
- 90% final exam, 10% assignments, or
  - 30% midterm, 10% assignments, and 60% final.

### Approximate Schedule of Sections and Topics

Week	Sections	Topics	Assignments
1	15.1	Double integrals over rectangles (Fubini's Theorem)	p.1039: 4, 10, 12, 22, 28, 42
2	15.2; 15.3	Double integrals over general regions; Double integrals in polar coordinates	p.1048: 8, 14, 18, 30, 48, 52
3	15.3; 15.4	Double integrals in polar coordinates (continuation) Applications of double integrals	p.1054: 6, 8, 16, 26, 32, 36 p.1065: 8, 16, 28
4	15.5; 15.6	Surface area Triple integrals	p.1068: 4, 6, 8 p.1077: 2, 6, 12, 20
5	15.7; 15.8	Triple integrals in cylindrical and spherical coordinates	p.1083: 8, 18, 20, 24 p.1089: 8, 10, 22, 36, 42
6	15.9	Change of variables in multiple integrals Review Chapter 15	none
7	16.1, 16.2	<b>Mid-term exam (Chapter 15)</b> Vector fields. Line integrals	p.1100: 8, 12, 24, 26 p.1113: 4, 6, 24, 34
8	16.2; 16.3	Line integrals (continuation) Fundamental theorem for line integrals	p.1124: 8, 14, 22, 40 p.1134: 2, 8, 16, 24
9	16.4; 16.5	Green's Theorem Curl and Divergence	p.1142: 6, 10, 18, 22, 24 p.1149: 6, 10, 18, 24
10	16.6	Parametric surface	p.1160: 4, 6, 14, 20, 24, 34, 42, 48
11	16.7	Surface integrals	p.1172: 4, 6, 10, 18, 22, 24, 26
12	16.8; 16.9	Stokes' Theorem Divergence Theorem	p.1179: 4, 8, 14, 16 p.1185: 4, 8, 10, 12, 24
13		Review	