Item #6602	**Multivariable Calculus**	**Item #6604**
10 – 10:50am	**Math 254**	**11 – 11:50am**
17-102	**Spring 2014**	**17-102**

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Course Description: (5 credits) Multivariable calculus. Topics include partial derivatives, multiple integrals, cylindrical and spherical coordinates, line and surface integrals, Green's Theorem, Stokes' Theorem, and the Divergence Theorem.

Course Objectives: *The student will be able to ...*

- Calculate partial derivatives

- Calculate the gradient and directional derivatives

- Evaluate line and surface integrals

- Apply Green's Theorem, Stokes' Theorem, and the Divergence Theorem

- Evaluate multiple integrals in rectangular, polar, cylindrical, and spherical coordinate systems

Text: *Calculus, Early Transcendentals* (7**th ed**.), by James Stewart.

Prerequisite: Math 153 with a minimum grade of 2.0.

Schedule: We will cover three chapters in this course group quizzes midway through each chapter an exam around the end of each topic. Most sections in chapters 14 and 15 will be covered in 1 class day with two class days allotted to sections in chapter 16. To maintain this clip, you will need to read the beginning of each section carefully and skim it in its entirety. I will provide reading guides for many sections.

Calculators: A graphing calculator is required for this course.
i. The TI-83/4 is recommended. The use of symbolic calculators such as the TI-89 or *n*Spire CAS will not be allowed during exams. Furthermore, the use of all calculators may be prohibited during some exams (forewarning will be given).
ii. Very limited class time will be spent explaining the use of calculators.
iii. Calculators may be rented from the math department on a first come first serve basis.

Reading Assignments: There are recommended readings for this class.
i. This class moves quickly. Most students will benefit by reading the text ahead of the lectures.
ii. To help with the readings, I will supply guides to direct you to relevant and understandable parts of the text.
iii. These are not graded, but I believe will help you get the most from the course (in terms of both understanding and enjoyment).

Intro Assignment: The first section in each chapter is introductory. I will supply a reading guide and assign homework exercises, but will not lecture on sections 14.1, 15.1, and 16.1.

Online Homework: The format and grading criteria for the online homework is as follows.
i. **Enhanced Web Assign:** Graded homework will be administered online thru EWA. The website is: https://www.webassign.net/login.html
    EWA Class Key: highline.cc.wa 4520 0981 (You can try it out for two weeks).
ii. **Many submissions:** You may make up to five submissions on most problems.

Group Quizzes: See the schedule for the tentative dates and times.
i.   There are no make-up quizzes.
ii. If you miss a quiz, 80% of your next quiz will be used in its place (you must remind me).
iii. If you miss a second quiz, a score of 0% will be assigned.
iv. You must be on time for quizzes. You will be penalized if late.

Tests: There will be three tests given during the quarter.
v.   The exams will be cumulative, but will emphasize the material covered since the last test.
vi. If you miss a test, a score of 0% will be assigned. All tests must be taken during the scheduled class time. *No make-up tests*.
vii. Spoken and written communication as well as sharing of calculators during exams is prohibited.

Final Exam: A comprehensive final exam will be held in the regular class meeting room. The date and time of the final are listed in the quarterly. The final exam is mandatory and a grade of 0.0 may be assigned at the instructor's discretion to those who fail to take the final exam.

Grading: Homework: 10%, Quizzes: 10%, Exams: 50%, and Final Exam: 30%. GPA's will be given according to:

95-100%	4.0	%%%	GPA	%%%	GPA	%%%	GPA	%%%	GPA
93-4%	3.9	81%	3.1	73%	2.3	65%	1.5	57%	0.7
91-2%	3.8	80%	3.0	72%	2.2	64%	1.4	0-56%	0.0
89-90%	3.7	79%	2.9	71%	2.1	63%	1.3		
87-8%	3.6	78%	2.8	70%	2.0	62%	1.2		
85-6%	3.5	77%	2.7	69%	1.9	61%	1.1		
84%	3.4	76%	2.6	68%	1.8	60%	1.0		
83%	3.3	75%	2.5	67%	1.7	59%	0.9		
82%	3.2	74%	2.4	66%	1.6	58%	0.8		

Policies and Notes:

i. **Attendance**: You are responsible for all material covered in class including all announced changes to the schedule and assigned course work. (If you miss class, *you* are still responsible for everything in class).

ii. **Cell Phones**: The use of cell phones, pagers, and palm pilots in class is strictly prohibited. Failure to comply may result in your removal from the classroom.

iii. **Math Resource Center**: Cost-free individual and group mathematics tutoring is available at the *Tutoring Center*. The *Tutor Center* is located in building 26, room 319. Their hours may be found at: http://flightline.highline.edu/tutoring/

iv. **Academic Dishonesty**: Cheating, plagiarism, and other forms of academic dishonesty are unacceptable at Highline Community College and may result in lower grades and/or disciplinary action. It is both your right and responsibility to be familiar with the document entitled: Student Rights and Responsibilities code WAC 132I-1210 adopted by the Board of Trustees of Community College District 9 on December 13, 2007. This is available in the counseling center.

v. **Faculty Advising**: Highline Community College instructors are a wonderful resource for students at any stage of the academic process. Many HCC instructors have career experience, are knowledgeable about campus resources, and can assist students in reaching their educational goals through degree planning. If you have an advising question, feel free to approach your instructor. If your instructor cannot answer your question, s/he will help you find someone who can.

vi. **Special Concerns**: If you have any special concerns about this class, please talk to me personally in my office. The more I know about you individually, the more I can help you be successful in this course. If you need course adaptations or accommodations because of dis-Ability; if you have emergency medical information to share with me; or if you need special arrangements in case the building must be evacuated, please provide me with the Letter of Accommodation you have received from the Office of Access Services. Access Services is located in Building 6 in the Student Development Center.

vii. **Important Dates**: The last day to drop without incurring a "W" and the last day to officially withdraw with a "W" are listed in the quarterly.