

## MATH 3142-001 — Advanced Calculus of Several Variables — Spring 2016

### Instructor Information:

Name:	Dr. Steven Clontz
Office:	Fretwell 380G
Office Hours:	TR 1300-1500
Office Phone:	(704) 687-0620
Email:	sclontz5@uncc.edu

### Course Information:

Room:	Fretwell 306
Lecture Times:	TR 1230-1345
Final Exam Date/Time:	Thu 2016/05/12 1100-1330
Credits:	3
Text:	Advanced Calculus (Fitzpatrick)

### Course Description:

Multivariable analysis, including (but not limited to) some subset of the following topics: Continuity and differentiability of functions of several variables, inverse and implicit function theorems, integration, Fubini's theorem, change of variables, the classical integral theorems of Gauss, Green and Stokes and their generalizations.

### Grading:

During the semester, you will be assessed based on note checks  $N$ , presentations  $P$ , and a midterm  $M$ , and your semester grade is calculated as  $S = \frac{N+P+M}{3}$ .

A final exam  $X$  will be administered, and your overall grade reported to the university is calculated as  $G = \max(\{\frac{2S+X}{3}, \frac{S+2X}{3}\})$ .

Letter Grade	Percentage
A	90% - 100%
B	80% - 89%
C	70% - 79%
D	65% - 69%
F	0% - 64%

### Makeup Policy:

If the midterm is missed for an excused reason, it will be replaced with the grade on the final. If the final is missed for an excused reason, a makeup will be scheduled as early as possible. Arrangements should be made with the professor if the note check or presentation grades are affected for an excused reason. As a rule, only written documentation from a medical professional will be accepted as an excuse without at least two weeks' advance notice.

### Accommodations:

UNC Charlotte is committed to access to education. Students in this course seeking accommodations for disabilities must first consult with the Office of Disability Services and follow the instructions of that office to obtain accommodations.

### Academic Honesty:

All portions of University Policy 407, The Code of Student Academic Integrity

<http://legal.uncc.edu/policies/up-407>

will apply to this class. All academic honesty violations will be reported to the Dean of Students Office.

**Photo ID may be required at examinations.**

**Contingency Plan:**

If normal class is disrupted due to unanticipated circumstances, the syllabus and other course plans and assignments may be modified. If this occurs, an addendum to your syllabus and/or course assignments will be provided by the instructor.

**Class structure:**

This is an upper level mathematics course. As such, it's important for all students to be engaged in the writing and presentation of the material. As such, lectures by the professor will be augmented with many student presentations. Bringing a laptop to lecture is recommended as notes must be typeset in L<sup>A</sup>T<sub>E</sub>X for submission.

**Presentations:**

The professor will provide an outline of the definitions, theorems, and problems (called a “theorem sequence”) which will be updated throughout the course. Students are expected to read ahead in the textbook on these. The professor will lecture on some topics himself, and assign some topics as homework (to be included in each students’ notes), but other topics will be presented by students in the class. Depending on the topic (usually asking for the proof of a theorem), the professor may ask for a volunteer, choose a specific student, or call on a student randomly. Students may use any notes they wish while presenting, except for the textbook (to prevent blindly rewriting the given proof).

When called, the student may choose to not present if they are not prepared (or absent) at most twice during the semester without being assigned a 0 for the presentation. Otherwise, a grade from the set  $\{100, 70, 20\}$  is assigned for each presentation. The professor may drop some individual presentation grades for students who present more often. Each students’ overall presentation grade is an average of all individual presentation grades earned.

**Note checks:**

The theorem sequence will be provided with its L<sup>A</sup>T<sub>E</sub>X source. Students must create a free account on Overleaf.com to typeset their own solutions and proofs to the problems and theorems covered in the sequence, and provide the professor with a link to this Overleaf project.

The professor will regularly announce note checks. A grade will be assigned at the professor’s discretion based upon factors such as overall completion or correctness of specific proofs/solutions. The professor may or may not inform the class which proofs or solutions will be graded before the note check occurs. Each students’ overall note check grade is an average of all individual note check grades earned.

IMPORTANT: plagiarism is a violation of academic honesty and will be reported; do NOT blindly copy solutions, e.g. from the book, online, another student. You are allowed (actually, encouraged) to work with your colleagues on these problems, but all typed notes and solutions must be your original writing.

**Midterm and Final:**

The midterm and final are both in the same format, except that the final exam is longer. These exams are comprehensive over material covered up to that point in class. A short multiple choice portion will be given first, primarily testing knowledge about definitions and theorems. Following this, an open-note and open-book portion will be given which asks for solutions/proofs to several problems/theorems.

**Attendance:**

Attendance is necessary due to required presentations.

If you need to miss class for a reasonable conflict (athletics, etc.) you are encouraged to have the absence excused by providing documentation to the professor at least two weeks in advance. If you miss class due to illness, you should check with the professor on your first day back to clear any possible missed presentations. If any other assessments are missed due to illness, you must email the professor as soon as possible and provide written documentation from a medical professional within one week of the assessment for it to be considered excused.

**Office Hours:**

Students are encouraged to meet with the professor during office hours for help on assigned homework and other feedback on class material. Office hours are not available the day of an exam.

**Calculators:**

Calculators are not necessary and not allowed on any exam.

**Moodle:**

Many materials materials will be posted online to Moodle.

Last updated on January 12, 2016