

MATH 317: CALCULUS IV

UBC, Summer Term 2 (Jul 04, 2017 to Aug 11, 2017), Section: 951

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Lectures: Mon, Wed: 10:30-12:30; Tue, Thu: 10:30-14:00
Mathematics Annex 1100 (MATX 1100)

Office Hours: Mon, Wed: 13:00-14:00 in LSK 300

Course description:

- *Vector valued functions of one variable:*
parameterized curves, velocity, acceleration, arc length. Includes curvature, normal and binormal vectors, tangential and normal components of acceleration.
- *Vector valued functions of several variables:*
vector fields, line integrals, conservative fields, fundamental theorem of line integrals, Green's theorem, gradient, curl, divergence, parameterized surfaces, surface area, surface integrals, Stoke's theorem, divergence theorem.

Texts:

- *Whitman:* primarily chapters 13 and 16
- *Strang:* primarily chapters 12 and 15

In addition to these, any standard textbook in multivariable calculus will also serve as a reference for most of the topics in this course. This includes the textbook by *Stewart*.

Prerequisite:

Multivariable Calculus: Partial derivatives, Multiple Integrals...
One of MATH 200, MATH 226, MATH 253. (MATH 221 is recommended.)

Grading Scheme:

- **Final grade:** The higher of the two values:
 $\text{Homework} \times 20\% + \text{Midterms} \times 30\% + \text{Final Exam} \times 50\%$
 OR
 $\text{Final Exam} - 10$
 The second option is your *safety net*: even if you perform very badly on the midterms, you can still get a good grade by doing well on the final.
- **Homework:** Six homework sets, will be assigned each week (Tuesday) and will be due on (next) Monday.
 - Your homework should be written up neatly. If you use more than one piece of paper, they must be stapled together.
 - Homework assignments are to be handed in at the beginning of classes. Late homework will not be accepted .
 - At the end of the term, your lowest two homework grades will be dropped.
- **Midterms:** There will be two in-class midterms, tentatively scheduled for July 18th and August 1st.
- The **Final exam** is scheduled in August (TBA) and will cover the entire course.

Policies:

- Notes, calculators, cell phones and other electronic devices are not not allowed in the exams.
- A score of 0 will be given for the missed midterm/homework.

If you are unable to attend one of the midterms, you must notify with a legitimate reason or provide professional documentation of any medical emergency. In either of these two cases your other midterm and final exam grade will be scaled accordingly. Undocumented absences from midterms will result in a score of zero.

- **Regrading:** Please indicate which problems you would like to have regraded and why on a sticky note/stapled piece of paper attached to the homework or midterm in question.