MATH 217 (Fall 2020), Honors Advanced Calculus, I
MWF 10:00–10:50 and R 17:00-17:50, delivered remotely via zoom

Instructor
Volker Runde

Office hours
By appointment (E-mail: vrunde@ualberta.ca). Please, e-mail me, and we will set up a meeting via Google meet.

Course content
1. the real number system and finite dimensional Euclidean space (axiomatic introduction of the real numbers, the Euclidean space \( \mathbb{R}^N \), topology in \( \mathbb{R}^N \));
2. limits and continuity (sequences, limits, continuity, global properties of continuous functions, uniform continuity);
3. differentiation of functions of several variables (partial derivatives, the directional derivative and the differential, partial derivatives of higher order, classification of stationary points, vector fields);
4. Riemann integration (Riemann integral in \( \mathbb{R}^N \), Fubini’s Theorem, integration in polar, spherical, and cylindrical coordinates).

Texts
There is no required text, but
3. James S. Muldowney, Advanced Calculus Lectures Notes for MATH 217–317, Part I,
are recommended.

The course will be based on the first four chapters of

Those of you who have not taken MATH 117/118 at the U of A may find
http://www.math.ualberta.ca/~bowman/m117/m117.pdf
helpful.
Grading

The mark will be based on (approximately) weekly homework assignments (30%), an midterm on October 16 (20%), and a final (50%). A total mark of 50% will yield a letter grade of D or better, and a total mark of 90% will yield a grade of A (or better). Submission and marking of the homework will be handled through Assign2, which will replace Crowdmark. Prior to both the midterm and the final, a practice midterm/final will be made available. If the midterm is missed for a valid reason according to the calendar, its weight will be transferred to the final; if the final is missed for a valid reason according to the calendar, a deferred exam will be given at a time and place to be announced. The homework assignments, solutions to them and to the (practice) exams will be made available through e-class and the course webpage at http://sites.ualberta.ca/~vrunde/math217/.

The midterms and the final will be administered as follows: at midnight prior to the announced exam dates, the exam questions will be made available through e-class and the course webpage. The answers have to be submitted via Assign2 within the next 24 hours. You are allowed to use the posted course notes.

Statements required by calendar

• Policy about course outlines can be found in §23.4(2) of the University Calendar.

• The University of Alberta is committed to the highest standards of academic integrity and honesty. Students are expected to be familiar with these standards regarding academic honesty and to uphold the policies of the University in this respect. Students are particularly urged to familiarize themselves with the provisions of the Code of Student Behaviour (online at www.governance.ualberta.ca) and avoid any behaviour which could potentially result in suspicions of cheating, plagiarism, misrepresentation of facts and/or participation in an offence. Academic dishonesty is a serious offence and can result in suspension or expulsion from the University.

• Audio or video recording of lectures, labs, seminars or any other teaching environment by students is allowed only with the prior written consent of the instructor or as a part of an approved accommodation plan. Recorded material is to be used solely for personal study, and is not to be used or distributed for any other purpose without prior written consent from the instructor.

Particular issues arising through remote delivery of instruction

It should be clear that the stands regarding academic honesty are not invalidated by the fact that we are in the midst of a global pandemic. I do not consider networking on the homework as cheating—in fact, I encourage it. However, I expect you to do the exams on your own at the times announced. You are required to be alone in your room and not to interact with anybody else during the examination periods. You are allowed to use the online course notes, but you are not allowed to access the internet during those examinations (Please!!!, stay away from the website chegg.com: it got a lot of students into trouble last winter, and they are also—to put it politely—incompetent.)
All forms of dishonesty are unacceptable at the University. Any offence will be reported to the Associate Dean of Science who will determine the disciplinary action to be taken. Cheating, plagiarism and misrepresentation of facts are serious offences. Anyone who engages in these practices will receive at minimum a grade of zero for the exam or paper in question and no opportunity will be given to replace the grade or redistribute the weights. 10As well, in the Faculty of Science, the sanction for cheating on any examination will include a disciplinary failing grade (no exceptions!!), and senior students should expect a period of suspension or expulsion from the University of Alberta.