

## Course outline: MATH 4151, WINTER 2009

**Instructor:** Dr. Razvan Anisca, RB 2049, email: ranisca@lakeheadu.ca

**Office hours:** Monday, Wednesday 10:00-11:00 or email for an appointment

**Textbook:** Volker Runde, "*Advanced Honors Calculus*", available for downloading at:

<http://www.math.ualberta.ca/~runde/files/math217-notes.pdf>  
(we will only use the first 135 pages of these notes)

**Syllabus:** Topology of  $\mathbf{R}^n$ . Continuity and differentiability of functions from  $\mathbf{R}^n$  to  $\mathbf{R}^m$ . Taylor's Theorem for functions of  $n$  variables. Maxima and minima. The Inverse Function Theorem and the Implicit Function Theorem. Integration in  $\mathbf{R}^n$  and Fubini's Theorem. Change of variables in multiple integrals.

**Exam:** The final exam will be a "take home" exam

**Homework:** There will be approximately 4 homework assignments during the term.

**Grade:** The final grade will consist of three parts: homework (50%), one or two individual presentations (20%) and final exam (30%).