

Course outline: MATH 4151, WINTER 2025

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

Class times: Monday/Wednesday 1-2:30pm

Office hours: Tuesday 10-11am or email for an appointment

Textbook: Volker Runde, "*Advanced Honors Calculus*", available on my-courselink (we will only use the first 150 pages of these notes)

Note: There is no cost associated to the textbook.

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 3 homework assignments during the term.

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