

Mathematics 3012

Vector Analysis, Fall 2022

Instructor: Dr. Luis Santiago

Email: lsantiag@lakeheadu.ca

Lectures:

Section FA: Tuesdays and Thursdays from 8:30 AM to 10:00 AM, UC0050

Section FB: Mondays and Wednesdays from 4:00 PM to 5:30 PM, BB1021

Labs: Fridays from 4:30 PM to 5:30 AM, RB1042

Office hours: Tuesdays from 11:30 AM to 1:00 PM, RB3008

Textbooks: *Calculus: Early transcendental functions*, by Larson and Edwards, Brooks/Cole. *Calculus* or *Multivariable Calculus* by James Stewart, Books/Cole.

Course Content: The course will cover the following topics: vectors and operations on vectors, space coordinates, lines, planes, surfaces, vector-valued functions and their differentiation and integration, tangent and normal vectors, functions of several variables, limits, continuity, partial derivatives of functions of several variables, tangent planes and normal lines, iterated integrals, double integrals, triple integrals, volume and surface areas, Jacobians, line integrals, Green's Theorem, surface integrals, Divergence Theorem, and Stokes' Theorem.

Labs: The lab will reinforce concepts through explanations and examples, as well as provide students with the opportunity to ask questions about the content given in class or assignment problems. Though the lab is not mandatory, it is beneficial to attend.

Grading Scheme:

Assignments	10 %
Midterm (Friday October 21 from 4:30 PM to 5:30 PM)	30 %
Final Examination:	60 %

Assignments: Assignments will be collected and graded online using the free online homework system WebWork. A link to WebWork is provided in the d2l webpage of the course.

Accommodations: Lakehead University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you think you may need accommodations, you are strongly encouraged to contact Student Accessibility Services (SAS) and register as early as possible. For more information, please visit:

<http://studentaccessibility.lakeheadu.ca>

Important Dates: Please note the following important dates:

Tuesday September 6, 2022:	First day of classes
Tuesday December 6, 2022:	Final day of classes
Friday November 4, 2022:	Final date to withdraw
Friday October 21, 2022:	Midterm
Thursday December 8 to Sunday December 18:	Examination Period
Monday December 19, 2022:	Exam Contingency Date
Monday October 11 to Friday October 15:	Study Week