

Mathematics 3012 SA/SDE

Vector Analysis, Spring 2022

Instructor: Dr. Luis Santiago

Email: lsantiag@lakeheadu.ca

Lectures/Labs:

SA: Monday to Friday from 11:30 AM to 2:30 PM in room AT 1010.

SDE: Monday to Friday from 11:30 AM to 2:30 PM by Zoom.

Office hours: By appointment.

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.

Lectures/Labs: Lectures and labs will be delivered in person and at the same time through Zoom. 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	30 %
Midterm (Wednesday May 11 from 1:00 PM to 2:30 PM)	30 %
Final Examination (Saturday May 21)	40 %

Exams and Assignments: Exams and 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:

Monday May 2, 2022:	First day of classes
Friday May 20, 2022:	Final day of classes
Wednesday May 4, 2022 :	Final date to register
Thursday May 12, 2022:	Final date to withdraw
Wednesday May 11, 2022:	Midterm
Saturday May 21, 2022:	Examination Period
Sunday May 22, 2022:	Exam Contingency Date