



**Faculty of Science and General Studies
Department of Mathematics**

Course Title: Differential Equations
Course Number: 201-HTL-05
Section: 00001
Semester: Winter 2019

Teacher: I.T. Ivanov
Office: D 264
Phone: 514-744-7500 ext. 7737
Email: ivanovi@vaniercollege.qc.ca
Webpage: euclid.vaniercollege.qc.ca/~iti

Course Description: This course is an introduction to the study and to the applications of Differential Equations. Particular emphasis will be placed throughout the course on using differential equations to model a wide variety of real-world problems involving dynamic systems, that is, systems which change and evolve with time. Dynamical systems modeling is used in physics and chemistry, in engineering design studies, in bioengineering, in ecological management, in urban planning, and in finance, to name just a few fields of application.

Ponderation: Theory 3 hours per week, Lab 2 hours per week, Homework 3 hours per week

Prerequisites: For a list of prerequisites, please consult the course listing on the master course schedule, <http://www.vaniercollege.qc.ca/online-schedule>.

Teaching Methods: A combination of lectures, class and lab exercises, along with homework and classwork will prepare the students for two tests. The programming language Python will be introduced and used in the course. Student projects will illustrate the use of differential equations modeling in areas of science and engineering of interest to the students.

Recommended Textbook: *Elementary Differential Equations*, 10th Edition by W.E. Boyce and R.C. DiPrima, Publisher John Wiley and Sons, ISBN: 9781118567029.

Additional Expenses: None anticipated.

Office Hours: Mon. 1 - 2.30 pm; Wed. 12 – 1.30pm.

Competencies to be achieved: For the course objectives and the expected learning outcomes please consult the [course content document](#).

Important Dates: A midterm will be given during the 7th week of classes. A final exam will be held during the final exam period. Class exercises and homework will be due every week.

Evaluation Procedures and Breakdown of Marks:

- Homework, Class and Lab exercises - 25%
- ESP Project - 20%
- Midterm - 20%
- Final Exam - 35%

Academic Resources:

The Tutoring & Academic Success Centre (TASC) provides free peer tutoring every workday in E 300. See www.vaniercollege.qc.ca/tlc/home for further details.

Course Policies: You are responsible for all work, even if you are absent. If you miss a test, you must provide a doctor's note. All electronic devices such as cell phones, tablets etc. must be turned off and out of sight upon entering class.

Unless explicitly allowed by the instructor, all electronic devices including but not restricted to smart phones, smart watches, Fit Bits - all models, cameras, laser devices, MP3 players, recording and/or playback devices in any form, ear buds, any Bluetooth device are prohibited during in class examinations. A simple possession of such devices is considered cheating and will be treated as such.

General Academic Policies: It is the student's responsibility to be familiar with and adhere to all Vanier College Policies. A summary of the course-level policies that apply in this and all other Vanier courses can be found under "Course-Level Policies" in Important Vanier Links on Omnivox, or by following this link: <http://www.vaniercollege.qc.ca/psi/course-level-policies/>. Complete policies can be found on the Vanier College website, under [Policies](#).