

# Welcome to Math 1LT3

Calculus for Life Sciences II

# Math 1LT3

instructor: Erin Clements

email: [clemene@math.mcmaster.ca](mailto:clemene@math.mcmaster.ca)

office: HH/425

office hours: Thursdays, 2pm – 4pm or by appointment

# Math 1LT3

## Lectures:

Mondays, 7pm – 10pm in JHE 376

## Tutorial:

Thursdays, 1:30pm – 2:20pm in BSB 147

(Tutorials start the week of January 9th)

# Math 1LT3

**Webpage:**

<http://ms.mcmaster.ca/~clemene/math1LT3.html>

**Facebook group:**

search “Math 1LT3”

# Course Content

- ❖ analyzing and solving differential equations
- ❖ calculus on functions of several variables
- ❖ probability and statistics
- ❖ various applications to life sciences

# What questions can 1LT3 help us answer ?

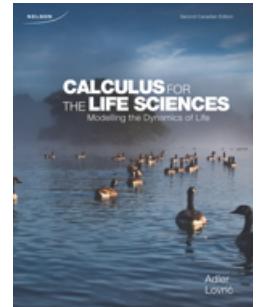
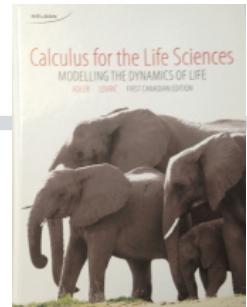
- \* How can math help us understand the behaviour of two species sharing the same ecosystem (such as bacteria and amoeba, or foxes and rabbits)?
- \* How does a pollutant (in the air, or in a lake) spread from its source?
- \* A person tests positive for a certain medical condition (such as flu, cancer, or HIV). How likely is it that he/she actually has it?

# What questions can 1LT3 help us answer ?

- \* The average efficacy of an oral contraceptive is 97.5% per year. What is the probability that a sexually active woman who takes birth control pills will get pregnant at least once in a 5-year period?
- \* On average, there are 17.6 cases of bacterial meningitis per year in Hamilton. In February 2011, eight cases were diagnosed. How likely is that this occurred by chance? Or, is it a sign of an emerging epidemic?

# Resources

- ❖ math 1LS3 textbook (required, 1<sup>st</sup> or 2<sup>nd</sup> edition)
- ❖ probability and statistics module (required)
- ❖ functions of several variables module (required)
- ❖ student's solution manual (optional)



# Work Involved

- ❖ Lecture notes
- ❖ 3 Tests (60%)
- ❖ Assignments
- ❖ Final exam (40%)
- ❖ Practice questions