

MAT237Y1 – LEC5201
Multivariable Calculus

WELCOME BACK TO MAT237!



UNIVERSITY OF
TORONTO

January 7th, 2020

We keep the same room, the same schedule... ...and I am still me

Jean-Baptiste (JB) Campesato



campesat@math.toronto.edu



Please start the subject with “MAT237:”

Lectures schedule:



- Tuesday, 6pm to 7pm – Room SS2117



- Thursday, 6pm to 8pm – Room SS2117

Office hours:



- Tuesday, 7pm to 8pm – Room PG003



- Thursday, 3pm to 4pm – Room PG003


Website for this section:




<http://uoft.me/MAT237-5201>

Resources:


MAT237 website:

 <http://uoft.me/MAT237-2019>

Lecture notes:

 <http://uoft.me/MAT237-notes>

Website for this section with my notes:

 <http://uoft.me/MAT237-5201>

Administrative questions:

 admin237@math.toronto.edu

The IFT: where I=Implicit or Inverse

Week 1 The Implicit Function Theorem

Week 2 The Inverse Function Theorem

Integration: \int

Week 3 Darboux's construction of Riemann's integral in one variable

Week 4 Generalization to several variables

Week 5 Iterated integrals

Week 6 The change of variables formula

Week 7 Further aspects of integration

Vector Calculus: $\nabla f, \nabla \cdot \mathbf{f}, \nabla \times \mathbf{f}$

Week 8 Line integrals

Week 9 Green's theorem and surface integrals

Week 10 Differential operators (grad, div, curl)
and the divergence theorem

Week 11 Stoke's theorem and more on vector fields

Week 12 Reviews

Homework

We will cover the section Darboux's construction of Riemann's integral in one variable faster than usual since you already know its material from MAT137.

It will be easier if you review it **before** the lectures.

You can have a look at the reviews from my MAT137 section last year:

- sup/LUB and inf/GLB:

<http://www.math.toronto.edu/campesat/ens/1819/lec26-notes.pdf>

- Reviews of the construction:

<http://www.math.toronto.edu/campesat/ens/1819/darboux.pdf>

- A few proofs (including the ε -criterion of integrability):

<http://www.math.toronto.edu/campesat/ens/1819/lec27-notes.pdf>