

# 1. General Course Information

## Course Information

INTRODUCTION TO DATA SCIENCE I

CS4414A/CS9637A/CS9114A

Fall 2019

<https://owl.uwo.ca/x/WbA1Ya>

Lecture: Tuesday 2:30pm to 4:30pm, Thursday 2:30pm to 3:30pm

Tutorial hour: Thursday 3:30pm to 4:30pm

Place: SEB-1200 (lecture and tutorial)

## List of Prerequisites

**Antirequisite(s):** [Computer Science 4437A/B/Y](#) if taken during Fall/Winter 2015 or 2016.

**Prerequisite(s):** 0.5 course from Biology 2244A/B, Statistical Sciences 2035, Statistical Sciences 2141A/B, Statistical Sciences 2143A/B, Statistical Sciences 2244A/B or Statistical Sciences 2858A/B; 1.0 course from Computer Science 1025A/B, Computer Science 1026A/B, Computer Science 1027A/B, Computer Science 1037A/B, Computer Science 2120A/B, Computer Science 2121A/B, Digital Humanities 2220A/B, Digital Humanities 2221A/B, Engineering Science 1036A/B; and 0.5 course from Mathematics 1229A/B, Mathematics 1600A/B, Applied Mathematics 1411A/B; or permission of the Department.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

# 2. Instructor Information

Dan Lizotte, Assistant Professor

Middlesex College MC363 | Kresge Building K3D

*Students must make contact by OWL message. In the case of a general question, students should check the OWL forum first for an answer and then post the question to the OWL forum.*

# 3. Course Description/Syllabus

Introduces machine learning and statistical methods for data analysis through applied examples. Particular emphasis is placed on how to rigorously evaluate an analysis of data. Students will develop a data science analysis project using the methods covered in class. Also suitable for non-Computer Science students.

## 4. Course Materials

### Lecture Slides

Lecture slides will be available on OWL.

### Recommended Texts

**HTF:** *The Elements of Statistical Learning* by Hastie, Tibshirani and Friedman. [**Free online**]

**MLPP:** *Machine Learning: a Probabilistic Perspective* by Kevin P. Murphy [**Free online**]

Students must check OWL (<http://owl.uwo.ca>) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

## 5. Methods of Evaluation

The overall course grade will be calculated as listed below:

### Graduate

- Weekly Assignments - 50%
- Midterm - 20%
- Data Science Project - 30%

### Undergraduate

- Weekly Assignments - 50%
- Midterm - 25%
- Final Exam - 25%

For Undergraduates and Graduates:

### Assignment Due Dates:

Assignments will be released after each Tuesday lecture, with due dates of the following Monday at 5pm, unless otherwise specified.

### Midterm Exam Date:

The midterm exam will be held on Thursday 17 October from 2:30pm to 4:30pm in SEB-1200.

The midterm will cover concepts up to and including those covered by end of Tuesday, 14 October.

The midterm will be a practical examination; each student will need a laptop to complete the midterm.

A grade of 50% or higher on the midterm is required to write the final examination (undergraduates) or to submit the final project (graduates).

For Undergraduates:

The final exam will be scheduled by the Registrar. The final exam will cover concepts from the entire course. A grade of 50% or higher on the final examination is required to pass the course. The midterm will be a practical examination; each student will need a laptop to complete the midterm.

For Graduates:

The final project is due at 5pm on 6 December and must be submitted via OWL.

## 6. Accommodation and Accessibility

Note that if documentation (medical or otherwise) is required, it can only be collected by the student's Dean's Office/Academic Counselling unit.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a self-reporting of absence or via the Dean's Office/Academic Counselling unit of your Home Faculty. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in NCB 280, and can be contacted at [scibmsac@uwo.ca](mailto:scibmsac@uwo.ca).

For further information, please consult the university's policy on academic consideration for student absences:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic\\_Consideration\\_for\\_absences.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf)

If a student has received academic accommodation, missed components are excused so that the course is reweighted.

For accommodation for work worth 10% or less of the final grade, the student is referred to the student's Dean's Office/Academic Counselling unit.

If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see [http://www.registrar.uwo.ca/examinations/exam\\_schedule.html](http://www.registrar.uwo.ca/examinations/exam_schedule.html)).

## 7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html> the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

On the midterm and exam, students are allowed to use any document and source on their computer and look up documents on the internet. *However they are not allowed to share documents, or communicate in any other way with people inside or outside the class room during the test.*

Scholastic offences are taken seriously, and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:  
[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_undergrad.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf).

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

## **8. Support Services**

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations.

The policy on Accommodation for Students with Disabilities can be found here:  
[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/Academic%20Accommodation\\_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf)

The policy on Accommodation for Religious Holidays can be found here:  
[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_religious.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf)

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Students who are in emotional/mental distress should refer to Mental Health@Western ([http://www.health.uwo.ca/mental\\_health](http://www.health.uwo.ca/mental_health)) for a complete list of options about how to obtain help.

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.