



Statistical & Actuarial Sciences Course Outline

SS4844B/9544B Statistical Consulting & MDA9144B Data Consulting Winter 2021



Although this academic year might be different, Western University is committed to a **thriving campus**. We encourage you to check out the [Digital Student Experience](#) website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: <https://www.uwo.ca/health/>.

Technical Requirements and Important Dates:



Stable internet connection



Laptop or computer



Working microphone



Working webcam



Classes Start	Reading Week	Classes End	Study day(s)	Exam Period
January 11	February 15 - 19	April 12	April 13	April 14 - 30

*March 15, 2021: Last day to drop a second-term half course or a second-term full course without penalty

1. Course Information

Lectures and Readings

Online asynchronous lectures along with suggested readings will be posted on OWL. Students are expected to regularly engage with this material. Engagement is assessed through weekly forums/discussion activities.

These resources will be posted weekly by 4:30 pm on Mondays.

The official lecture times of Mondays from 2:30 - 4:30 pm and Wednesdays from 3:30 - 4:30 pm are reserved for individual, group and/or team meetings in the event that an alternative, mutually agreeable time cannot be identified.

All times listed are local to London, Ontario, Canada.

Labs and Tutorials

There are no labs or tutorials.

Prerequisites

Students should have a background in statistical modelling and inference including working knowledge of linear regression techniques and should have, or be taking, a course in generalized linear models. The ability to carry out analyses in R is essential. Knowledge of experimental design, survey sampling issues and other data modelling methods (either model-based or algorithmic-based) is useful, but not required. Additional course-specific prerequisites are as follows:

SS4844B: SS3859A/B with at least 60%, and registration in the fourth year of the Honors Specialization in Data Science module or the Honors Specialization in Statistics module.

SS9544B: Enrollment in a graduate program offered by the Department of Statistical and Actuarial Sciences.

Course-Level Learning Outcomes

On successful completion of this course, students shall have:

Gained first-hand experience in data consulting for a client.

A working understanding of the data consulting process.

The ability to ask appropriate questions to identify and characterize the data analytics problem based on a general description of the problem provided by an end-user/collaborating partner and then recommend analytics methods to approach a data modelling solution to the problem.

The ability to prepare and present reports and presentations to communicate the information gained through the analysis of data in both technical and non-technical language.

The ability to work productively in team settings using data analytics to solve a problem or investigate a hypothesis.

A working knowledge of ethics in the context of data analytics, including the following:

- A familiarity with the Statistical Society statistics;
- A familiarity with the concept of data governance;
- An understanding of the need to practice ethical data analyses;
- The ability to recognize situations where ethical data analysis practices were not followed;

An understanding of the components to conduct a robust data analysis and the ability to document an analysis so that it is reproducible.

An introduction to other professional skills that are desirable traits of a successful data analytics professional, such as project management, effectively participating in meetings in a variety of in-person and electronic settings, non-verbal communication, compensation and negotiation.

Online Participation and Engagement



- This is a fully remote class being delivered online.
- You are expected to participate and engage with content as much as possible.
- Your active and interactive attendance and input online is a course requirement: complete all assigned tasks and readings and participate in online discussions.

For this component you are to complete the online tutorial TCPS 2: CORE, print your certificate of completion as a pdf, and submit that through OWL as proof of completion.
Due February 1, 2021

Mock Consulting Situation (10%)

You will be put in a mock consulting situation and play the role of the consultant.
To be held from March 15 – April 1, 2021.
Individual meeting times will be arranged with the instructor/TA.

Writing Services Consult (10%)

Writing is a key course outcome. Every student at Western has access to writing support through its Writing Support Centre (<http://writing.uwo.ca/>).
For this assessment, you will submit a draft of your Virtual Field Trip Reflection (as described below) to the Writing Support Centre portal. Once you have engaged in this

- Attend an ARES Seminar (the virtual Field Trip) no later than March 15.
- No accommodations for this component will be granted. If on the date of the seminar you registered for you find yourself in the situation where you are unable to attend it, due to approved accommodation or otherwise, you should register for another seminar in the future and attend that one instead.
- Final Report is due April 30, 2021. No extensions beyond this due date will be granted.

Style Guide

A style guide (or manual) is a set of standards for the design and writing of documents that establishes a consistent style that aids in reading comprehension, provides clarity of communication, and reduces bias in language. One commonly used example is the APA style guide. This is the style guide we will be using in this course. Unless otherwise specified by the instructor, students **are required to employ the APA style guide** in all written assignments. Failure to do so may result in a loss of grades.

Accommodated Evaluations

Please see the description of the CANSSI Ontario Data Science ARES virtual field trip above for specific instructions regarding accommodation for that specific assessment. Note that no extensions beyond the due date or accommodations for this will be granted because there are multiple seminars throughout the term to choose from. Failure to complete this assessment will result in a grade of 0 for that component.

Late Submissions by Graduate Students

Assessments that are submitted late will be subject to a 20% penalty per day or portion thereof, including weekends and holidays.

Assessments that are submitted 5 or more days late will not be graded.

Late Submissions by Undergraduate Students

Late assessments without illness self-reports will be subject to a late penalty of 20% per day or portion thereof, and assessments that are submitted 5 or more days late will not be graded.

Late assessments with illness self-reports should be submitted within 24 hours of submission of the last illness self-report, after which they will be subject to a late penalty of 20% per day or portion thereof, and assessments that are submitted 5 or more days late will not be graded.

All Students:

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.

- For undergraduate students, approval can be granted either through a self-unit of your Home Faculty. If you are a Science undergraduate student, the Academic Counselling Office of the Faculty of Science is located in NCB 280, and can be contacted at scibmsac@uwo.ca.
- Graduate students seeking approval should seek approval for academic accommodation by discussing their situation with the course instructor and/or the Director or Graduate Chair of their graduate program.

A mark of 0 will be assigned to any missed assessments unless requests for academic accommodation has been approved.

The weight of any assessments that are missed due to approved accommodation will be reassigned within that given method of evaluation. If there are no other components within that method of evaluation, either a make-up assessment will be offered or the weight will be shifted to another grade component or components; the decision on how to proceed in such a situation is at the discretion of the instructor. If a make-up assessment is missed, the student will receive an INC and complete the task the next time the course is offered.

Rounding of Marks Statement

Across the Sciences Undergraduate Education programs, we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. **Final grades** on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be bumped to the next grade or GPA, e.g. a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved, and the mark assigned; requests for mark

6. Accommodation and Accessibility

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf

Academic Consideration for Student Absence

Undergraduate students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the semester, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for

are expected to contact their instructors within 24 r

If the conditions for a Self-Reported Absence are *not* met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs, see:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf
and for the Student Medical Certificate (SMC), see:

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

Scholastic offences

