



**ADS2036B 570
Predictive Analytics
Winter 2026**

Instructor: Dr. Lori Murray
Email: lsincla3@uwo.ca

Course Information

Mode of Instruction: In Person

Calendar Description:

Predictive analytics for business, accounting, and marketing with emphasis on multiple regression models, inference for regression parameters, categorical independent variables, model assumptions and diagnostics, goodness of fit and test of independence, analysis of variance for one factor and multiple factor designs, and model selection and validation.

Pre-requisite(s): Economics 2122A/B or Economics 2222A/B, or permission of the department.

Anti-requisite(s): Biology 2244A/B, Data Science 2000A/B, Geography 2210A/B, Health Sciences 3801A/B, MOS 2242A/B, Psychology 2811A/B or the former Psychology 2810, Psychology 2801F/G or the former Psychology 2820E, Psychology 2830A/B, Psychology 2850A/B, Psychology 2851A/B, Sociology 2205A/B, Statistical Sciences 2035, Statistical Sciences 2141A/B, Statistical Sciences 2143A/B, Statistical Sciences 2244A/B, Statistical Sciences 2858A/B.

Extra Information: 3 lecture hours, 2 laboratory hours.

Course Weight: 0.50

Breadth: CATEGORY A

Subject Code: ADS

Notice: Unless you have either the requisites for this course (fulfilment of pre-requisites, no anti-requisite conflicts), or special permission from your Dean to enrol 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.

KING'S UNIVERSITY COLLEGE
WESTERN UNIVERSITY
ADS 2036B (2025-26)
SECTIONS 570 & 571

Instructor: Dr. Lori Murray
Email: lori.murray@uwo.ca

Course Information

Course Description: Predictive analytics for business, accounting, and marketing with emphasis on multiple regression models, inference for regression parameters, categorical independent variables, model assumptions and diagnostics, goodness of fit and test of independence, analysis of variance for one factor and multiple factor designs, and model selection and validation. Applications will be implemented using MS Excel and will focus on areas of business including accounting, human resources, global commerce, and marketing.

Antirequisite(s) at King's: All other courses in Introductory Statistics (except [Statistical Sciences 1023A/B](#), [Data Science 1000A/B](#) or [Statistical Sciences 1024A/B](#)): [Biology 2244A/B](#), [Data Science 2000A/B](#), [Economics 2122A/B](#), [Economics 2222A/B](#), [Geography 2210A/B](#), [Health Sciences 3801A/B](#), [MOS 2242A/B](#), [Psychology 2811A/B](#) or the former Psychology 2810, [Psychology 2801F/G](#) or the former Psychology 2820E, [Psychology 2830A/B](#), [Psychology 2850A/B](#), [Psychology 2851A/B](#), [Sociology 2205A/B](#), [Statistical Sciences 2035](#), [Statistical Sciences 2141A/B](#), [Statistical Sciences 2143A/B](#), [Statistical Sciences 2244A/B](#), [Statistical Sciences 2858A/B](#).

Prerequisite(s): [Economics 2122A/B](#) or [Economics 2222A/B](#), or permission of the department.

Warning: 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. You can be deregistered at any time even after writing the final exam. This decision may not be appealed. You will receive no adjustment to your fees in the event you are dropped from a course for failing to have the necessary prerequisites.

Course Website

All course materials related to the course including this course outline can be found on the course website in OWL. All students are expected to be aware of information and make use of materials posted on the course web site. An approximate schedule of topics will be available in OWL.

Required Textbook and Course Materials

1. Required textbook: *Business Statistics and Analytics Practice*, Bowerman 9e. Cost of the textbook at Western's bookstore is \$69.00:
https://bookstore.uwo.ca/textbook-search?campus=KC&term=W2025B&courses%5B0%5D=570_KC/ADS2036B

Students need to purchase this edition. Second-hand or older editions will not be sufficient.

2. MS Excel software is required and available to students (for free) through your Western Office 365 accounts.

Course Objectives

This course is designed to provide students with essential predictive analytics tools, enabling them to effectively analyze data variability and derive meaningful conclusions. With a strong emphasis on practical application, the course is intended for students interested in MOS disciplines such as accounting, human resources, and global commerce, including marketing applications.

Learning Outcomes:

- Perform analysis of variance (ANOVA) and completely randomized designs.
- Conduct multiple comparison tests and draw conclusions.
- Perform chi square tests: goodness of fit and test of independence.
- Analyze relationships between variables.
- Perform simple linear regression analysis, model assumptions, diagnostics, and validation.
- Perform multiple regression models using numerical and indicator variables.
- Build and analyze inferential regression and predictive regression models.
- Construct and interpret confidence and prediction intervals for new observations.
- Use predictive analytics tools: logistic regression, discriminate analysis, and neural networks.
- Implement models using Excel software.
- Draw conclusions from population samples.

Student Expectations:

- Attend and engage in the course.
- Completion of all assigned work.
- Assumption of complete responsibility to follow-up regarding any assessments which are missed.
- Awareness of items and use of materials posted on the course OWL web site.
- It is up to the student to seek help when needed.

Assessments

1. Interactive Learning Labs (ILL)

There will be a combination of interactive hands-on assignments (Interactive Learning Labs (ILL)) (5) and tutorials (7) for additional practice problems. The ILL have been designed for individual and group learning based on predictive analytics with a focus on applications in accounting, human resources, global commerce, and marketing, using MS Excel software. Late submissions will receive a grade deduction of 10% per day. Labs submitted via email will not be marked.

The graded labs are scheduled as follows:

Graded Lab 1: Jan 14

Graded Lab 2: Jan 21

Graded Lab 3: Feb 4

Graded Lab 4: Feb 25

Graded Lab 5: Mar 18

The flexible grading using the best 4 of 5 graded lab assignments will be used in the calculation of your lab component. **Note, based on the flexible marking scheme, there are no make-ups.** If a student misses more than one graded lab assignment, a mark of 0 will be automatically applied to the second and any subsequent missed graded lab assignments.

2. In-Class Participation

The lectures will be interactive, and students are expected to attend and participate regularly. This grade component will be calculated using iClickers. iClickers is a tool for active learning and allows students to answer questions during lectures using their mobile device. iClickers provide students with instant feedback on their comprehension to help them monitor their understanding of the course content.

Instructions for creating an iClicker account and signing in will be posted on OWL. Students can use iClicker software free of charge through Western's license agreement. Each lecture will comprise of 2 to 6 iClicker questions.

The participation grade component will be calculated as follows:

- If a student participates in 80% or more of the clicker questions they will receive full marks.
- If a student answers less than 80% of all clicker questions, the clicker mark will decrease linearly using the formula:

$$\text{Clicker mark} = 12.5y,$$

where y is the proportion of all clicker questions answered.

For example, if you answer 70% of the clicker questions, you will receive $12.5 \times 0.70 = 8.75$ towards your participation / attendance grade component. For students with less than 40%, the above formula will not be used and a grade of 0 will be applied to the participation / attendance grade.

Students should use their mobile devices when participating (and not laptops, etc) as GPS settings will be used with the software. Students will be assigned a participation grade only and must attend class to receive the grade. Students who are participating with iClicker AND are not present in-class (i.e., falsifying attendance and participation) will automatically receive a grade of 0 for the in-class participation course grade component.

The grading formula above provides a "free" 20% marking in participation which covers unexpected life events such as illness, etc., including technical issues. Students are responsible for ensuring they have a reliable mobile device at each lecture.

There are no make-ups for missed participation / attendance for any reason. Clicker grade adjustments will not be made as it is already taken into consideration within the marking scheme.

3. Quizzes

There will be 5 in-class quizzes on the following days:

- Quiz 1 — Jan 19
- Quiz 2 — Jan 26
- Quiz 3 — Feb 9
- Quiz 4 — Mar 2
- Quiz 5 — Mar 23

The best 4 of 5 quizzes will be used in the calculation of your quiz grade component. **Note, based on the flexible marking scheme, there are no quiz make-ups.** If a student misses more than one quiz, a mark of 0 will be automatically applied to the second and any subsequent missed quizzes. Topics will be announced in class and on OWL prior to each quiz.

4. Midterm Test

There will be one in-class test:

- **Midterm: Monday, March 9, 2026**

Topics for the tests will be announced in advance in class and on OWL. The in-class test will be 2 hours in length and consist of multiple-choice questions, short answers, or a combination of both. Academic consideration for this midterm test requires submission of formal supporting documentation. Students must obtain academic accommodation approval to write the make-up midterm test on Friday, March 20, 2026. There are no additional midterm makeup opportunities for any reason.

Important Note: Students must write the midterm test to pass this course. If you do not write the midterm test, your maximum grade in this course will be 47% and you will not receive course credit.

5. Group Project

The final project will be a group project and will incorporate the tools learned in the course using MS Excel software with applications in business, accounting, human resources, or global commerce. Groups will be randomly assigned by the instructor using software. Instructions for the report and presentation will be available in OWL Brightspace. Groups will present their projects in class on March 30, 2026. The order of presentations will be determined using software. Group reports are due on March 30, 2026, at 6:00 pm but will be accepted until April 6, 2026, at 6:00 pm without penalty. Group projects submitted after 11:59 pm on April 6, 2026, will result in a grade deduction of 20% per day.

Note that instructors reserve the right to seek additional clarification about any submitted work (e.g. explain a solution) as part of any assessment. Students may be asked questions by the instructor regarding their reports.

Evaluation

Your course grade will be calculated as:

- In-class participation / Attendance (iClickers) = 10%
- Interactive Learning Labs (best 4 of 5) = 20%
- Quizzes (best 4 of 5) = 24%
- Midterm Test = 30%
- Group Project / Presentation = 16%

Technology Requirements:

- We will be using iClickers during lectures; students are required to bring their mobile device to class. **Mobile devices are to be used during lectures for the purpose of iClicker participation only.** Students who use their mobile device during lecture other than for iClicker participation will automatically receive a grade of 0 for that lecture's participation/attendance.
- Only non-programmable calculators will be allowed for the quizzes and the midterm test.
- Microsoft Excel will be used for data and statistical analysis in addition to calculator calculations (students may be tested on the functions and output of Excel covered in class but will not be required to use the software during tests/exams). Students will be required to use Microsoft Excel for the final project and write the results in a report.

Academic Integrity:

- It is expected that all work you submit will be your own.
- Academic integrity policies at Western require that instructors forward to their department chair or director any evidence of academic offenses.
- Cheating is taken seriously to protect the integrity of our measures of your learning.
- 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
- Tests, quizzes, and exams may be subject to similarity review (by hand or by software) to check for unusual coincidences in answer patterns that may indicate cheating.
- Instructors reserve the right to seek additional clarification about any submitted work (e.g. explain a solution) as part of any assessment.

King's is committed to fostering a culture of professionalism, honesty, and academic integrity, and all members of our community—faculty, staff, and students—have a role to play in promoting an ethical learning environment. Furthermore, through the work they submit for academic evaluation, students develop important habits of critical thinking, independent inquiry, and creativity. Thus, it is expected that students will submit work that is truly their own, completed without external assistance (human or artificial) except as explicitly permitted by the course instructor.

Within this course, use of artificial intelligence (AI) tools [such as Chat GPT] is prohibited in all assessments, including essays, tests, examinations and the final project. Unauthorized use of AI will be subject to academic discipline.

Attendance Policy

Attendance is required! Missing 25% of scheduled classes and interactive learning labs is considered to be too frequent. A warning email will be issued at the 20% point and if absences continue the instructor will implement the King's attendance policy below:

King's policy states that "*A student may be debarred from writing the final exam for failure to maintain satisfactory academic standing throughout the year. Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, will be reported to the Dean of the Faculty offering the course, after due warning has been given**. On the

recommendation of the department concerned, and with the permission of the Dean of that Faculty, the student will be debarred from taking the regular examination in the course.”

* implies that faculty must be tracking and have communicated attendance concerns to student

As the final summative assessment in this course is a final project rather than a final examination, students may be debarred from submitting the final project for failure to maintain satisfactory academic standing throughout the semester. **To maintain satisfactory academic standing throughout the semester, students must attend and engage in at least 75% of the lectures. Students who miss more than 25% of the lectures may be debarred from submitting their final project and presentation.**

Email Communication Policy

Students must use their UWO email address when emailing the instructor so it does not end up in spam and can be verified. Subject line must include “ADS2036”. MEM faculty will endeavor to respond to student emails within 2 business (working) days.

Email communication should be reserved only to provide information or ask a question that requires a very brief response; questions related to the course content (statistics questions) should be communicated during regular office hours or by appointment.

Intellectual Property Statement

Course content created by a faculty member is considered the faculty member’s intellectual property; it should not be distributed, shared in any public domain, or sold by a student or other third party without prior written consent of the faculty member. Sharing, posting, selling or using this material outside your personal use in this course is considered to be an infringement of intellectual property rights.

KING'S UNIVERSITY COLLEGE

GENERAL COURSE POLICIES

2025-2026

1. Academic Accommodations, Consideration for Absences

Academic Accommodation (Accessibility)

Accessibility Services works to ensure that academic programs are accessible to all students, and supports students who may have a condition related to, but not limited to, vision, hearing, mobility, different ways of learning, mental health, chronic illnesses, chronic pain, autism spectrum disorder, ADD/ADHD, and temporary conditions (beyond short-term academic consideration). Accessibility Services provides recommendations for accommodation based on medical documentation or psychological and cognitive assessment. The accommodation policy can be found here [Academic Accommodation for Students with Disabilities](#). Information on Accessibility Services at King's can be found [here](#).

Academic Consideration for Student Absence

If a student is unable to meet a course requirement due to substantial but temporary extenuating circumstances (medical or compassionate), they should follow the procedures below.

In some cases, where instructors have built flexibility into their assessments, this flexibility will already address consideration needs.

Requests for academic consideration should be directed to the Academic Advising Office of your faculty/college of registration. Requests must be made as soon as possible and no later than 48 hours after the missed assessment.

As a rule, documentation is required for academic consideration. For academic consideration requests on medical grounds, the Student Medical Certificate is available at https://www.kings.uwo.ca/kings/assets/File/currentStudents/courses_enrollment/exams_and_tests/SMC-Feb-2025.pdf.

Students are permitted one academic consideration request without supporting documentation per term per course.

Instructors may designate one assessment per half-course weight as requiring formal supporting documentation. Please refer to the course outline for each course.

For further information, please see:

https://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf

Absences from Final Examinations

If you miss the Final Exam, contact the Academic Advising Office of your faculty/college of registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (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” (e.g., more than 2 exams in 23-hour period, or more than 3 exams in a 47-hour period).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give notice in writing to the instructor and Academic Advising Office if a course requirement will be affected by a religious holiday/observance. Notice must be given as early as possible, and no later than two weeks prior to an examination, and one week prior to a midterm test date. It is the responsibility of such students to inform themselves concerning the work done in classes from which they are absent and to take appropriate action.

2. Support Services

Accessibility, Counselling and Student Development at King’s University College:

<https://www.kings.uwo.ca/current-students/student-services/>

Students experiencing emotional or mental health distress can access services at King’s University College: <http://www.kings.uwo.ca/current-students/campus-services/student-support-services/personal-counselling/>

Good2talk is a good online and phone 24/7 resource for students and is available in English, Mandarin, and French: <https://good2talk.ca>, 1-866-925-5454

MentalHealth@Western provides a complete list of options about how to obtain help:

https://www.uwo.ca/health/mental_wellbeing/

Academic Support Services at King’s University College:

<https://www.kings.uwo.ca/current-students/academic-resources/>

GBSV Support:

King’s is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at:

<https://www.kings.uwo.ca/about-kings/safe-campus/gender-and-sexual-violence/>

You can reach someone supports at Kings by emailing Care@kings.uwo.ca or calling 519-930-4640 to reach a social worker who can offer help.

You can also reach Western’s Gender-Based Violence & Survivor Support Case Manager by [email](#) or by calling 519-661-3568.

Further supports can be found on this website: <https://www.kings.uwo.ca/about-kings/safe-campus/gender-and-sexual-violence/>

See also https://www.uwo.ca/health/student_support/survivor_support/get-help.html

University Students' Council offers many valuable support services for students, including the health insurance plan: <http://westernusc.ca/services/>

3. Statement on Use of Electronic Devices

Use of Electronic Devices: Unless explicitly stated otherwise, you are not allowed to have a cell phone, or any other electronic device, with you during tests or examinations. Unauthorized possession of such a device during a test or examination constitutes an academic offence.

Use of Laptops, Tablets, and Smartphones in the Classroom: King's University College at Western University acknowledges the integration of new technologies and learning methods into the curriculum. The use of electronic devices such as laptop computers, tablets, or smartphones can contribute to student engagement and effective learning. At the same time, King's recognizes that instructors and students share jointly the responsibility to establish and maintain a respectful classroom environment conducive to learning.

The use of electronic devices by students during lectures, seminars, labs, etc., shall be for matters related to the course at hand only. Students found to be using electronic devices for purposes not directly related to the class may be subject to sanctions under the Student Code of Conduct; see <https://www.kings.uwo.ca/current-students/student-affairs/code-of-student-conduct1/>

Inappropriate use of electronics (e.g., laptops, tablets, smartphones) during lectures, seminars, labs, etc., creates a significant disruption. As a consequence, instructors may choose to limit the use of electronic devices in these settings. In addition, in order to provide a safe classroom environment, students attending in-person class sessions are strongly advised to operate laptops with batteries rather than power cords.

4. Statement on Academic Offences

King's is committed to academic integrity. Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, is posted at

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

It is expected that students will submit work that is truly their own, completed without external assistance (human or artificial) except as explicitly permitted by the course instructor. Check with your instructor on what tools, including generative AI (ChatGPT, translation tools, grammar-checking tools) are permitted in the course. Because a tool is permitted in one course, that does not mean it is permitted in other courses.

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; see <https://elearningtoolkit.uwo.ca/tools/Originality Reports - TurnItIn.html>.

Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

5. Copyright of Course Material

Lectures and course materials, including PowerPoint presentations, tests, outlines, and similar materials are protected by copyright. Faculty members are the exclusive owner of copyright in those materials they create. Students may take notes and make copies for their own use. Students may not allow others to reproduce or distribute lecture notes and course materials publicly (whether or not a fee is charged) without the express written consent of a faculty member. Unauthorized sharing of class content is subject to academic discipline.

Similarly, students own copyright in their own original papers and exam essays. If a faculty member wishes to post a student's answers or papers on the course website, they should ask for the student's written permission.

6. Use of Recordings

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation and/or the participant has the prior written permission of the instructor. Unauthorized recording and/or sharing of class content is subject to academic discipline.

7. Policy on Attendance

Any student who, in the opinion of the instructor, is absent too frequently from class or laboratory periods in any course, will be reported to the Dean of the Faculty offering the course, after due warning has been given. On the recommendation of the department concerned, and with the permission of the Dean of that Faculty, the student will be debarred from taking the regular examination in the course.