



**ADS4293A 570**  
**Professional Analytics**  
**Fall 2025**

Instructor: Dr. Felipe Rodrigues  
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**Course Information**

**Mode of Instruction:** In Person

**Calendar Description:**

Practical analytics and software tools explored through case analyses. Linear programming, statistical analysis, decision analysis, game theory, inventory analysis, queuing theory, simulation, Markovian decision model, and forecasting will be applied in a variety of scenarios.

**Pre-requisite(s):** Analytics and Decision Sciences 2298A/B, 0.5 from Mathematics 1229A/B or Mathematics 1600A/B; 1.0 from Economics 2122A/B, Economics 2123A/B, Economics 2222A/B, Economics 2223A/B or Analytics and Decision Sciences 2036A/B, Statistical Sciences 2035, Statistical Sciences 2857A/B, Statistical Sciences 2858A/B.

**Extra Information:** 3 hours, 1 lab hour.

**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.



Department of Economics, Business & Mathematics

## ADS 4293F – Professional Analytics

### Fall 2025 Course Description

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#### Office Hours:

Section 570: Tue 1:00pm – 2:00pm EDT/EST

Or by appointment.

#### **COURSE DESCRIPTION**

The goal of ADS 4293 is to provide you with professional analytics methodologies and best practices and software tools explored through case analyses. Linear programming, statistical analysis, decision analysis, game theory, inventory analysis, queuing theory, simulation, Markovian decision models, forecasting, Machine Learning and Artificial Intelligence will be applied in various of scenarios. The class will be a combination of lectures, in-class problem review and experiential learning activities such as case studies, simulations and games, all to enhance your understanding of the material through application.

Antirequisite: None

Prerequisite: Mathematics 2293 or ADS 2298B, and 0.5 from Mathematics 1229A/B or 1600A/B, and 1.0 from Economics 2122A/B, 2123A/B, 2222A/B, 2223A/B, Statistics 2035, 2857A/B, 2858A/B. (To be updated)

#### **REQUIRED COURSE MATERIALS**

**Textbook: The textbook is required for this class, you will be using it frequently!**

**DO NOT BUY THE TEXTBOOK DIRECTLY FROM THE PUBLISHER. PLEASE USE THE UWO BOOKSTORE LINK THAT WILL BE PROVIDED ON THE FIRST DAY OF CLASS**

As such, I've picked one that is relatively inexpensive. You can order the hard copy (print + e-text) or online (e-text) versions.

Paper based or Digital copy of Business Analytics – Communicating with Numbers, 2<sup>nd</sup> edition, by Jaggia, Kelly,

Lertwachara & Chen. McGraw-Hill (2022).

- ADS4293F SEC570 <https://bookstore.uwo.ca/product/cebcodeid56272>

**All versions** of the textbook are accompanied by:

- “Connect” access code (for Cachon) which is the online learning system that includes the e-text and where I’ll post the assignments and class materials,

I have also ordered a copy to be put on reserve at the King’s library for you to use.

**Ivey Cases:** As you can see below, we will be using the following Ivey cases in the course. As the online format seems to be the preference of most students, please purchase the following cases directly from [www.iveycases.com](http://www.iveycases.com) or from the course owl page. Full list of cases will be finalized with feedback from students in the first day of class.

**General Software:** You are required to have access to a personal computer with internet access since we will use OWL for our class schedules and communication as well as McGraw-Hill’s Connect ® platform for assignments, quizzes and tests. Your computer should also have MS Excel ® software (with Solver engine installed), Analytic Solver for Excel and preferably running in MS Windows ®. The Excel add-ins as well as the discrete-event simulator (Simul8 ®) are known to either run only in Windows or be more stable in the Windows environment than in other systems, please be aware of that. Throughout the course we will have many opportunities to create analytics/optimization models in Excel. Examples include simple Linear Programming, Integer Programming, queuing, Monte Carlo and discrete-event simulation, statistical distributions, regressions and machine learning algorithms. Expert knowledge of Excel is a differentiator in the job market, so students will be encouraged to develop their own upgraded models for extra credits.

**Simul8®:** In the first day of class, you will receive a product key to download the student version of a discrete-event simulator (DES) software called Simul8®. You will also receive two tutorial guides: The first is called “An Introduction to simulation in the manufacturing industry using Simul8 ®” by Shalliker & Ricketts, and the second is called “An Introduction to simulation in the service industry using Simul8 ®” by Shalliker. The two versions have similar content but you may be more familiar with one of either industry, which may help you have a better understanding of the software and its applications. I recommend reading both as it would broaden students’ expertise, but for earlier simulations, pick one and carry on. We will use DES as an experiential learning tool to enrich our understanding, analysis and decision-making of processes and queuing systems in general. Again, expert knowledge of DES software is a differentiator in the job market, so students will be encouraged to develop their own upgraded models for extra credits.

**We will mostly use Microsoft Teams and McGraw-Hill’s Connect as our LMS.**

## METHODS OF EVALUATION

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Course component	Events	Site	Total
Online assignments “Smart Book”	Via Connect	Connect	5%
Online assignments “Homework”	Via Connect	Connect	15%
Participation	daily	In person	25%
Quizzes or case reports	4 quizzes or cases	Connect or in Person	25%
Group Case Project	4 events	MS Teams	30%
Total			100%

**Online Assignments (20%):** There will be around a series short assignments referring to each unit taught. They will be posted online and most (if not all) will be done through “Connect” website. Due dates posted in Teams/Connect, usually immediately before class.

**Quizzes or Case reports (25%):**

Students may be required to take up to 4 (four) individual open-book quizzes. This will be done online and will be proctored via Connect.

And/or: You will be tasked with creating groups of at most 4 members, to complete up to 4 (four) case assignments along with in-class discussion related to those cases.

- I expect that all participants contribute equally to the group work and that everyone will evaluate their teammates on participation. If most of your teammates state that you have not contributed at least equally to other members, you will get 0 (zero) on your case report participation component.
- Reports will also be evaluated regarding linkages to theory, readings, flow and thoroughness of recommendations.
- Clearly “patchy” reports (i.e. questions answered by individual participants and put together last minute) will be marked 0 (zero) as the intent of the group report is to generate an exchange of ideas and build knowledge through teamwork.
- **Any plagiarism will be treated as an academic offence and may result in failure of the course termination from the University. The use of Artificial Intelligence in any submission will be discussed in class, and rules about its potential use and permission will be highlighted on the first day of class.**

**In-class Participation (25%):** You will be evaluated daily regarding participation in class (and/or Forum), particularly during case discussions. **This is NOT attendance.** This is you stepping up and adding to the discussion. I understand that we can be shy and struggle with participation, but I can guarantee that all contributions are welcome. I’ll strive to provide an equitable learning environment from which we can all benefit. I’ll look for and guide toward insightful contributions that add to the analysis, problem-solving and decision-making aspects of the lectures, exercises, and cases.

**Participation is not just speaking in class; it is about meaningful contribution to class discussion. The instructor is the sole evaluator of what a meaningful contribution is. Monthly updates will be given as to participation marks. Participation marks are final and are not subject to discussion.**

**Group Case Project (30%):** Students will form in groups of 3-4 and submit a Business Case Exercise based in one of the topics covered in class. The project if preferably based in a real-life business problem and will be divided into 4 stages:

Module	Stage	Deliverable	Date	Weight
1	Project idea	1 page: Introduction to the Project and problem statement	2 weeks	4%
2	1 <sup>st</sup> draft Case	2-3 pages of Case description	TBD	5%
3	1 <sup>st</sup> draft Teaching note	2-3 pages of Teaching note description	TBD	5%
4	Final project	Complete Case and Teaching note	TBD	16%

Pending on the quality of the final project, we may submit it for evaluation and publication at Ivey Publishing. I hope you enjoy!

**A NOTE ON ABSENCES**

You will note that below I have outlined information on how I plan to deal with absences and grading for the various components of the course. You will find additional more general information relating to absences further down in the syllabus, under the section heading “Course Policies & Procedures”.

If you miss either the mid-term or the final exam for a medical reason, you will complete an alternate make-up exam instead. This exam will be scheduled at a mutually convenient future date, but not later than the King's make-up test day scheduled during the final exam period.

If you know that you have to miss a class, and it happens to be a day that we are doing a case, please let me know well ahead of time (consult the schedule early).

## **COURSE POLICIES AND PROCEDURES**

### ***Examinations and Projects Assigned for Grades***

Students who have any problems that may hinder their academic performance are encouraged to discuss these issues with the Professor or the appropriate College official *well before* exams and projects are due. It is much more difficult to justify giving special consideration after the fact.

Students are expected to complete all required evaluation components in order to receive a grade in this course. Students with course conflicts and approved inter-university athletic conflicts, or students unable to write an exam or test based on medical or compassionate grounds, may apply to be excused.

The use of personal computers during examinations will not be permitted unless told otherwise. This prohibition also applies to any programmable calculators that allow storage of programmed information. When in doubt, check with the professor well before the exam.

### ***Attendance***

This course will adhere to the following, as stated in the Academic Calendar: "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 (after due warning has been given). On the recommendation of the department concerned, and with the permission of the dean, the student will be debarred from taking the regular examination in the course".

\* Missing over one quarter of scheduled classes is considered to be too frequent → this means that you should not miss more than six classes!

### ***Punctuality***

Students whose schedules dictate arriving at class late or leaving early are asked to advise the professor of the situation, and to select a seat and a doorway that will minimize any disruption to the rest of the class.

Tardiness at exams, for classroom presentations or with project hand-ins is unacceptable for any reasons other than medical or compassionate grounds similar to those that excuse you from writing an exam. Students who are unacceptably late to an exam or test will not be given extra time beyond the scheduled conclusion time. **Late hand-ins will be penalized at a minimum of 5% of the possible grade.**

### ***Plagiarism and Cheating***

Plagiarism and cheating are serious scholastic offences.

All required papers (including your case presentations/reports!) 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>).

Full and proper citations are required in each and every case where you have utilized another person's work or ideas in your papers or projects. Citations for this course require the MLA style format, which is detailed in almost any grammar book, including books on reserve at the King's library.

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.

**My position on laptop use:** Personally, I prefer that you do not use laptops during class discussions. For class exercises where we work on excel files, laptops will be required. I will also make the In addition, during case discussions laptops are expected to be closed, unless explicitly stated otherwise.

**Use of electronic devices:** Cell phones (and other smartphones) are to be kept off during class. Likewise, texting is not permitted in class. If there is an important reason why you need your phone in one class, please let me know ahead of class and keep your phone on vibrate to minimize any disruption. You are not allowed to have a cell phone, or any other electronic device, with you during tests or examinations.

**Course Schedule:** The basic information for the course schedule is provided below. Any changes due to unforeseen difficulties or to accommodate learning will be posted in OWL. For the full details of the course schedule, please check OWL. **IMPORTANT:** it is up to students to familiarize with the class schedule and plan accordingly.

**TENTATIVE Course Schedule – Subject to Updating – Check OWL for Latest**

# 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](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](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/](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](mailto: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](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](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.