

Decision Analysis

AP/ADMS 3300 Section A (ONLINE) Summer (SU) 2025

Course Information

Course Instructor: S. Abdullah
E-mail: sabdulla@yorku.ca
Office Hours & Location: See below

Course Time & Days: Asynchronous
Class Location: ONLINE
Course eClass site:
<https://eclass.yorku.ca/>

Prerequisite

AP/ADMS 2320 3.0 (or AK/ADMS 3320 3.0 prior to Summer 2005)

Course Website

<https://eClass.yorku.ca/>

Tutorials

Tutorial video sessions will be posted on the course eClass site. Further information will be posted on the course eClass site.

Land Acknowledgment

York University recognizes that many Indigenous Nations have longstanding relationships with the territories upon which York University campuses are located that precede the establishment of York University. York University acknowledges its presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, and the Huron-Wendat. It is now home to many First Nation, Inuit, and Métis communities. We acknowledge the current treaty holders, the Mississaugas of the Credit First Nation. This territory is subject of the Dish with One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region ([LA&PS Land Acknowledgement](#)).

Course Overview

Course Description

An introduction to decision analysis under conditions of certainty, uncertainty, risk, and competition. Both single and multiple objective decision-making tools are covered. Problems from many areas of managerial decision making are considered.

Course Learning Objectives

By the end of this course, students will be able to:

- Decision Analysis theory, tools, and techniques in real world scenarios
- Structure the problem, model the decisions, develop both influence diagrams and decision trees as graphical modeling tools for representing the structure of decisions.
- Analyze and model single and multiple objective decisions situations.
- How to use sensitivity-analysis tools in concert with EMV calculations in the iterative decision-structuring and analysis process.
- model uncertainty through the use of probability
- Gain an in-depth understanding of risk and utility theory.
- model preferences in situations in which the decision maker has multiple and conflicting objectives.

Course Format and Organization

This course is delivered asynchronously. Pre-recorded PowerPoints will be made available that will cover the material much like the in-class environment. Students are expected to review lecture material each week and practice questions from the textbook. There will be NO synchronous ZOOM classes except the professor might schedule office hours before the Term Tests and the Final Exam.

Technical Requirements

Students who are enrolled in this course must have access to internet, a laptop or desktop computer with a camera and microphone, and/or a smart device with these features. Students who are enrolled in this course will be expected to use ZOOM software to attend occasional meeting/s, if any announced.

Students must have a stable Internet connection, or they will be facing significant challenges throughout the course.

During test/exam students may be asked to turn on camera for confirmation of identity. Here are some useful links for student computing information, resources, and help:

Several platforms will be used in this course (e.g., eClass, Zoom, etc.) through which students will interact with the course materials, the course director/TA, as well as with one another.

It is your decision to enrol in this online section. If you believe that it is highly likely that you might face one or more of the following: internet connection problem(s); laptop/computer crashing/freezing issues; fire alarm going off while you are taking a test; power outages happening in your residence; health issues or any other related problem(s), then it might be best for you to enrol in an in-class section.

For online courses we apply the following policy strictly: Once you click on the "**Attempt the Testing Component**" link, then it means that you are signed-in and whatever work you provide will be marked. Even if you just click and quickly log out, you are still considered as you wrote that testing component. We do not accept any requests of asking us to assume that you have not attempted that testing component.

Using Zoom

Students shall note the following:

- Zoom is hosted on servers in the United States and Canada. Recordings done since May 1, 2022, are stored in Canada. For more information, please refer to the notes on [Zoom Privacy and Security](#) provided by Information Security at York.
- If you have privacy concerns about your data, provide only your first name or a nickname when you join a session.
- The system is configured in a way that all participants are automatically notified when a session is being recorded. In other words, a session cannot be recorded without you knowing about it.

Here are some useful links for student computing information, resources, and help:

- [Student Guide to eClass](#)
- [Zoom@YorkU Best Practices](#)
- [Zoom@YorkU User Reference Guide](#)
- [University Information Technology \(UIT\) Student Services](#)
- [Student Guide to eLearning at York University](#)

To determine Internet connection and speed, there are online tests, such as [Speedtest](#), that can be run. If you need technical assistance, please consult the [University Information Technology \(UIT\) Student Services](#) web page. For more specific assistance, please write to askit@yorku.ca.

Course Communication Plan and Office Hours

Communication in the course will occur through announcements and postings on the course website.

1. Please ensure you read all documentation on the course website.
2. It will be your responsibility to regularly check online posts and your email.

Office Hours

Please send your questions via email. All questions will be answered within 24 to 72 hours' time with the exception of weekends. A one-on-one Zoom meeting may be set up depending on the nature of the question. Please note that emails from public email providers such as Gmail and Hotmail might be caught in spam. It is best to use your York email account for this course.

There are no live/scheduled Zoom classes for this course. All material will be made available so you can view them at the most convenient time for your schedule.

Course Evaluation

Assessment	Due Date	Weight %	Course Learning Outcome
Term Test 1 - ONLINE	See Course Schedule	30%	Assessment of knowledge pertaining to specific lectures.
Term Test 2 - ONLINE	See Course Schedule	30%	Assessment of knowledge pertaining to specific lectures.
Final Exam - ONLINE	See Course Schedule	40%	Assessment of knowledge pertaining to specific lectures.
		100%	

General Course Policy

1. **WARNING: Distribution or uploading of course content is STRICTLY PROHIBITIVE. All material is copyright protected.**
2. Concerns regarding marks [will not be entertained after a week](#) from the release of the marks/result.
3. Students will not be allowed to write the term tests, or the final Exam, unless they are enrolled in the course and have access to the eClass.
4. Please ensure you read all documentation on the course eClass site.
5. It is your responsibility to visit course eClass site on a regular basis.
6. If you have a query about the questions solved in any tutorial session, communicate directly with the tutor, if you are not satisfied with the reply of your tutor, then contact your professor.
7. Due to high volume of emails during remote learning, it might be possible that replies to your email queries might take longer than usual. Please expect no (or limited) response to your e-mails during the weekends.
8. Please note that this is an online course. The entire course, including the lectures, participation/discussion, and test/exam-taking, will take place on the course website on eClass.
 - the recordings should be used for educational purposes only and as a means for enhancing accessibility.
 - students **do not** have permission to duplicate, copy and/or distribute the recordings outside of the class (these acts can violate not only copyright laws but also [FIPPA](#)).
 - Recordings will not be available after the end of classes.
9. For some common language about academic integrity, and the online tools used to promote it, please read the section below.

Assessment Descriptions

1. The two Term Tests and the Final Examination will be held online at the same time for all students. Both Term Tests and the Final Examination are to be finished by students individually. Students may not receive assistance or coaching from other individuals or AI (Artificial Intelligence) tools while writing any test or the Exam. Students found engaging in these practices will be subject to an academic dishonesty case.

2. Information concerning the Term Tests and Final Exams will be posted on course eClass site. It is your responsibility to understand the protocols of the testing components and if having questions ask prior to the Test or Exam.
3. Both term tests and the final examination consist of multiple-choice questions and worded questions.
4. Each of the two Term Tests is worth 30% of your overall grade.
5. If you miss a term test, the weight of one and only one missed test (30%) will be automatically (no documents such as doctor notes needed) transferred to the final examination. If you miss both term tests, your final examination will only weigh 70%.
6. The final examination will be comprehensive if you miss one or both term tests. If you miss one term test or both, you will be writing a final exam that includes material from the entire semester. The duration of the Comprehensive Final Exam might differ from that of the Regular Final Exam.
7. A Cumulative Formula Sheet will be posted on your course's eClass website. You can use this formula sheet for all of your tests/Exams.
8. **There are no alternative exam dates and times for the Term Tests.**
9. If students miss the Final Examination and have to defer the Exam, the deferred Exam will be a **comprehensive** examination.
10. Due to concerns regarding copyright issues, online tests (Term Tests/Final Exam) are treated as purely **assessment tools**. If you do not miss a regularly scheduled test, you will not be tested on the material covered in that test again. Hence, the feedback regarding tests will be given to students, as explained in the following two points.
11. Online tests will be marked online, and the results will be posted on your course's eClass site. If you need to get markers' feedback, you must submit a request by emailing your professor **within five days of the marks being posted**. Any query after five days will not be entertained. It is your responsibility to visit the eClass regularly.
12. After getting the markers' feedback, you can request your professor to re-appraise the test if you are still unsatisfied. However, note that the whole test, not the part you like, will be re-assessed. Three possible outcomes: your marks might stay the same, increase, or decrease.
13. The solutions to problems other than MCQs must be handwritten and solved on paper. Then, take the picture/s and upload the file/s. Make sure that the uploaded

- file/s is/are viewable. It cannot be marked if it is not viewable; hence, no marks will be awarded. (Typed work is unacceptable; thus, it will not be marked).
14. You cannot use **ANY** software to solve and/or type your answers in your Tests/Exam. If used, that will not be considered part of your Test/Exam and will not be marked. You are also not allowed to use any gadget (electronic pencil) / or software to solve the Exam. Any part/s of the problem-solving question/s in the Exam completed electronically, for example, by electronic pencil, even though handwritten, will not be accepted as part of the test and hence will not be marked.
 15. Once you start any Testing Component (Tests or Exams), you are digitally signed for that testing component. If you quit yourselves or quit for any reason after starting a test, then whatever you attempted will be marked, and your records will be updated accordingly.
 16. If you need religious accommodations, please follow the York University policy/procedure, and once approved, update your professor **at least** 96 hours before the start of the testing component.
 17. Tests and Final Exam will all be online. For the Tests and Final Exam, you must upload a scan or photo of your work as required for each question on the eClass site. (Note: When the allotted time ends, eClass will automatically submit whatever work/files you have **uploaded**. *Note that the files must have already been uploaded, though, and this needs to be done before the last minute (literally) of the given time.* You do not have to send an email to your professor asking to check whether or not your work/files have been uploaded. You are responsible for ensuring they are correctly uploaded within the time provided and the files are executable. Such email inquiries will not be answered.)
 18. Due to strict copyright rules, MCQs cannot be reviewed online. If you want to, you can apply for re-appraisal, and your professor will re-appraise it and update you on the outcome.
 19. The problem-solving questions will be sequentially provided while taking your Tests/Final Exam. You will be asked to answer a question, submit your answer, and then move on to the next question. After you submit your answer to a question, there will be no further access to that question in the test. If this protocol changes for any testing components, it will be updated in the Tests/Exam Information announcements.

Missed Tests and Exams

Read point number 5 under "Assessment Description."

Grading

The grading scheme for this course conforms to the 9-point system used in undergraduate programs at York University. For a complete description of the York grading system, visit the York University [Academic Calendar](#).

Course Schedule: Weekly Readings and Activities

Required Course Materials

Clemen, R. and T. Reilly, Making Hard Decisions with Decision Tools, Duxbury, 3rd Edition, 2014.

The cost of the textbook is \$235.95, there are option available to get access to the online version of the textbook at lower price. Library personals usually post a link. You may use the used textbook of same edition. No software required.

Optional Materials

Supporting/Additional material (if any) will be posted on the course website.

Course Schedule

**Virtual day is for your planning purposes only. You can view the digital (Audio recorded) lectures at ANY time during the week as your schedule permits.*

Session	Date	Topic	Chapters
1	May 7	Introduction; Elements of Decision Problems	Chapter 1 Chapter 2
2	May 14	Structuring Decision Problems Decision Trees and Influence Diagrams	Chapter 3
3	May 21	Making Choices	Chapter 4
4	May 28	Model Building and Sensitivity Analysis	Chapter 5
	June 1 SUNDAY	Term Test I at 6:00 pm Location: ONLINE on eClass Details: TBA	Chapters 1,2,3, and 4
5	June 4	Uncertainty and Preference Modeling Subjective Probability	Chapter 8
6	June 11	Probability Basics and Bayesian Statistics Value of Information	Chapter 7 Chapter 12
	June 18	No Class – Summer Break	
7	June 25	Value of Information	Chapter 12
8	July 2	Utility Theory Risk Attitudes, Utility Axioms and Paradoxes	Chapter 14 Chapter 15
	July 6 SUNDAY	Term Test II at 3:00 pm Location: ONLINE on eClass Details: TBA	Chapters 5, 7, 8 and 12
9	July 9	Dealing with Conflicting Objectives-I	Chapter 16
10	July 16	Dealing with Conflicting Objectives- I [Continued...]	Chapter 16
11	July 23	Dealing with Conflicting Objectives II	Chapter 17

Common Final Examination

(August 7-14) (Date and time to be announced on registrar's/university website)

If the student wrote both term tests, Coverage will be Chapters 14, 15, 16 and 17. If a student misses a term test (or both term tests), his/her final exam will be a more balanced comprehensive exam that covers all chapters.

** Term Tests scheduled on Sundays are counted as Lecture 12

Latest Academic Conduct Policy and Procedures

<https://www.yorku.ca/secretariat/policies/policies/academic-conduct-policy-and-procedures/>

Course Policies

All students are expected to familiarize themselves with the following information:

- [Common University and Course Policies](#) (deferred exams, 20% rule, etc)
- [Student Rights & Responsibilities](#)
- [Academic Accommodation for Students with Disabilities](#)
- [University and School Policies](#)

Please also review the following course policies:

Academic Integrity

As a student at York University, you have a responsibility to both understand and uphold the integrity of the academic experience. The Faculty of Liberal Arts & Professional Studies supports the International Center for Academic Integrity's [definition of academic integrity](#). That is, you will be committed to acting in all academic matters, even in the face of adversity, with honesty, trust, fairness, courage, respect and responsibility. Here is how you can demonstrate academic integrity in the completion of this course:

- **Respect the ideas of others:** Your course work should represent your own knowledge and ideas. [You should not falsely claim credit for ideas that are not your own, by presenting another's work as yours](#). If you are quoting, paraphrasing, or summarizing another person's work in order to support your own ideas, identify the work and the author through proper citation practices. For more information about how to cite properly, use the [Student Papers and Academic Research Kit](#) (SPARK). You can improve your writing, research, and personal learning abilities through the [Learning Commons](#), or by visiting the [Writing Centre](#) or [ESL Open Learning Centre](#).
- **Respect your peers:** [Know when you are allowed to collaborate](#). Ask your instructor about what group work entails when it comes to the [sharing of work](#). In test situations and assignments, don't steal or give answers to your peers, whether in-person or online (e.g., in group chats and/or on [third-party content-sharing websites](#), such as Chegg, Course Hero, etc.). Both cheating and aiding in a breach of academic honesty are violations of York University's academic honesty policy.

- **Respect your course instructor(s):** Understand what your instructors are asking of you in class, as well as on assignments, tests and/or exams. If you are unsure, ask your professor or teaching assistant. They are committed to making you feel supported and want to assess you fairly and with integrity. Please do not submit the same piece of work for more than one course without your instructor's permission. That can be considered an act of cheating.
- **Respect yourself:** When you act with integrity, you know that your work is yours and yours alone. You do not allow others to take tests for you. [You do not buy or otherwise obtain term papers or assignments.](#) You do the work. As a result, you know that you *earned* the grades that you receive, so you can be proud of your York degree. By acting with integrity in your course work, you are also practising a valuable professional skill that is important in all workplaces.
- **Take responsibility:** If you have acted in an academically dishonest way, you can demonstrate courage and take responsibility for your mistake. You can admit your mistake to your course instructor as soon as possible.

Students who engage in academic dishonesty can be subject to disciplinary action under the [Senate Policy on Academic Honesty](#). Your lack of familiarity with the Senate Policy does not constitute a defense against its application. Some academic offences can also constitute offences under the [Criminal Code of Canada](#), which means that you may also be subject to criminal charges.

In this course, we strive to maintain academic honesty to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing [SPARK's Academic Integrity module](#) at the beginning of the course. Breaches of academic honesty range from cheating to plagiarism (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.). All instances of academic dishonesty in this course will be reported to the appropriate University authorities and can be punishable according to the [Senate Policy on Academic Honesty](#).

Generative Artificial Intelligence Usage Policy

Students are not permitted to use generative artificial intelligence (AI) in this course. Submitting any work created through the use of generative AI tools will be considered a violation of York University's [Senate Policy on Academic Honesty](#). If you do not know whether an online resource or tool can be used in this course, please contact your instructor for guidance. For more information, please review [AI Technology & Academic Integrity: Information for Students](#).

Deferred Standing

Deferred standing may be granted to students who are unable to write their FINAL examination at the scheduled time (due to illness or other extenuating circumstances) or who are unable to submit their outstanding course work by the end of the term.

Deferred standing requests for ADMS and DEMS courses should follow the **procedure and registration** outlined on the School's online registration system. The system will issue a ticket number.

Requests should be emailed to the main office of the School of Administrative Studies (apsas@yorku.ca) no later than seven (7) days from date of the final Exam (or from the last date to submit term course work, for any request to defer a component other than the final Exam). Requests should include your **ticket number** as issued by the online registration system, a completed **Deferred Standing Agreement form** (DSA) and relevant supporting documentation. *Note: As communicated on March 13, 2020, Senate Executive has waived until further notice the requirement for students to submit an Attending Physician's Statement in support of a request for deferred standing or petitions.*

Requests will be considered on their merit, and decisions will be made on a case-by-case basis. Decisions will be made available on the online portal. No individualized communication will be sent by the school to students (no letter or e-mails).

NOTE: The deferred examination will be cumulative/comprehensive and cover all material for the semester. This applies to all students writing a deferred Final Exam, including those who wrote both Test 1 and Test 2.

To be clear, deferred exams in this course will be cumulative exams.

Academic Integrity

In this course, we strive to maintain academic honesty to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing **SPARK's Academic Integrity module** at the beginning of the course. Breaches of academic honesty range from cheating to plagiarism (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.). All instances of academic dishonesty in this course will be reported to the appropriate University authorities and can be punishable according to the **Senate Policy on Academic Honesty**.

Accessibility

While all individuals are expected to satisfy the requirements of their program of study and to aspire to achieve excellence, the University recognizes that persons with disabilities may require reasonable accommodation to enable them to perform at their best. The University encourages students with disabilities to register with [Student Accessibility Services](#) to discuss their accommodation needs as early as possible in the term to establish the recommended academic accommodations that will be communicated to Course Directors through their Letter of Accommodation (LOA).

Please let your instructor know as early as possible in the term if you anticipate requiring academic accommodation so that we can discuss how to consider your accommodation needs within the context of this course. Sufficient notice is needed so that reasonable steps for accommodation can be discussed. Accommodations for tests/exams normally require three (3) weeks (or 21 days) before the scheduled test/exam to arrange.

Religious Observance Accommodation

York University is committed to respecting the religious beliefs and practices of all members of the community, and making reasonable and appropriate [accommodations to adherents for observances of special significance](#). Should any of the dates specified in this syllabus for course examinations, tests, or deadlines conflict with a date of religious significance, please contact the instructor within the first three (3) weeks of class. If the date falls within the formal examination periods, you must complete and submit a [Religious Accommodation for Examination Form](#) at least three (3) weeks before the start of the exam period.

Intellectual Property

Course materials are designed for use as part of this particular course at York University and are the intellectual property of the instructor unless otherwise stated. Third-party copyrighted materials (such as book chapters, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian copyright law. Students may not publish, post on an Internet site, sell, or otherwise distribute any course materials or work without the instructor's express permission. Course materials should only be used by students enrolled in this course.

Copying this material for distribution (e.g., uploading material to a commercial third-party website) may lead to a charge of misconduct according to York's [Code of Student Rights and Responsibilities](#), the [Senate Policy on Academic Honesty](#), and/or legal consequences for copyright violations.

Student Conduct in the Learning Environment

York University is committed to fostering teaching and learning environments that are free of disruptive and/or harassing behaviour, are physically safe, and conducive to effective teaching and learning. Students and instructors are expected to maintain a professional relationship characterized by courtesy, civility, and mutual respect and to refrain from actions disruptive to such a relationship. Individuals who fail to adhere to such standards and who violate University or public law may be subject to disciplinary action by the University.

For more information, see the policies on [Disruptive and/or Harassing Behaviour in Academic Situations](#), the [Student Conduct and Responsibilities](#), and the [Code of Student Rights & Responsibilities](#).

Netiquette for eClass and Online Learning

Students and instructors have a joint responsibility to create and maintain a welcoming and inclusive learning environment. All students are expected to conduct themselves in accordance with the [Code of Student Rights and Responsibilities](#). Please review and familiarize yourself with behaviours that support "netiquette" in virtual classrooms by consulting the [Guide to Netiquette](#) and [Student Guide to eLearning](#).

Student Notice of Recording for Online Teaching and Learning

Activities for this course involve recording, in partial fulfillment of the course learning outcomes. Images, audio, text/chat messaging that have been recorded may be used and/or made available by the University to students enrolled in the course and those supporting the course for the purpose of materials review, for assessment, etc. Recordings will be managed according to the University's Common Record Schedule and will be securely destroyed when no longer needed by the University. Your personal information is protected in accordance with York University's [Guidelines on Access of Information and Protection of Privacy](#) and the [Freedom of Information and Protection of Privacy Act](#). Access to online materials, including recordings or live meetings, is subject to York University's [Senate Policy on Computing and Information Technology Facilities](#).

The University will use reasonable means to protect the security and confidentiality of the recorded information, but cannot provide a guarantee of such due to factors beyond the University's control, such as recordings being forwarded, copied, intercepted, circulated, disclosed, or stored without the University's knowledge or permission, or the introduction of malware into computer system which could potentially damage or disrupt the computer, networks, and security settings. The

University is not responsible for connectivity/technical difficulties or loss of data associated with your hardware, software, or Internet connection.

By engaging in course activities that involve recording, you are consenting to the use of your appearance, image, text/chat messaging, and voice and/or likeness in the manner and under the conditions specified herein. In the case of a live stream recording, if you choose not to have your image or audio recorded, you may disable the audio and video functionality. If you choose to participate using a pseudonym instead of your real name, you must disclose the pseudonym to your instructor in advance to facilitate class participation.

You are not permitted to disclose the link to/URL of an event or an event session recording or copies of recording to anyone, for any reason. Recordings are available only to authorized individuals who have been directly provided the above instructions/link for their use. Recordings for personal use, required to facilitate your learning and preparation of personal course/lecture notes, may not be shared with others without the permission of the instructor or event coordinator, and may not be published, posted, linked to, or otherwise made available online, including on social media feeds, even if those feeds are private.

Health and Safety

All York students and instructors share responsibility for the safety and well-being of the community while on York's campuses. Please continue to check [YUBetter Together](#) for the latest information on health and safety.

Student Support and Resources

To help you succeed academically, York University offers a wide range of resources and services. Everything from writing workshops and peer mentorship to wellness support and career guidance is available to fulfill our LA&PS students' needs. Explore the links below to access these on-campus resources:

- [Academic Advising](#) is available to provide students support and guidance in making academic decisions and goals.
- [Student Accessibility Services](#) are available for support and accessibility accommodation when required.
- [Student Counselling, Health & Wellbeing](#) offers workshops, resources, and counselling to support your academic success.
- [Peer-Assisted Study Sessions \(PASS\) Program](#) provides student study sessions for students to collaborate and enhance their understanding of course content in certain courses.

- [Student Numeracy Assistance Centre at Keele \(SNACK\)](#) supports students in courses involving math, stats, and Excel.
- [The Writing Centre](#) provides multiple avenues of writing-based support including drop-in sessions, one-to-one appointments, a Multilingual Studio, and an Accessibility Specialist.
- [ESL Open Learning Centre \(OLC\)](#) supports students with building proficiency in reading, writing, and speaking English.
- [Learning Skills Services](#) provides tips for time management, effective study and learning habits, keeping up with coursework, and other learning-related supports.
- [Learning Commons](#) provides links to supports for time management, writing, study skills, preparing for exams, and other learning-related resources.
- [Roadmap to Student Success](#) provides students with timely and targeted resources to help them achieve academic, personal, and professional success.
- [Office of Student Community Relations \(OSCR\)](#) is responsible for administering the [Code of Student Rights & Responsibilities](#) and provides critical incident support.
- [goSAFE](#) is staffed by York students and can accompany York community members to and from any on-campus location, such as the Village Shuttle pick-up hub, parking lots, bus stops, or residences.

For a full list of academic, wellness, and campus resources visit [Student Support & Resources](#).