

PPOL 609 – Decision Analysis Course Outline

Course:	PPOL 609 Decision Analysis	Term:	Winter 2019
Time:	Wednesdays 17:00- 20:00	Section:	01 & 02
Instructor:	Dr. Kent Fellows	Place:	Nexen Technology and Conference Center, DTC (Downtown Campus)
Office:	DTC 550	Telephone:	403-210-9429
Office Hours:	By Appointment	E-mail:	gkfellow@ucalgary.ca

Required Textbooks:

- Quah, Euston, and Raymond Toh. *Cost-benefit analysis: Cases and materials*. Routledge, 2011.
- Dixit, Avinash K., and Barry Nalebuff. *The art of strategy: a game theorist's guide to success in business & life*. WW Norton & Company, 2008.

Other Readings:

The course will make significant use of supplementary readings from Academic journals and other sources. These readings will be made available either via the Desire 2 Learn platform or via the University of Calgary Library's Reserve desk as appropriate.

Desire2Learn:

Desire2Learn, a web-based course management tool, will be used in this course. Students registered in this course can log in at: <https://d2l.ucalgary.ca/>. Note that D2L features a class e-mail list that will be used. I will use this email list to communicate with you as required. It is your responsibility to ensure that D2L uses the e-mail address of your choice.

Required Software:

Students will be required to use Excel (preferably 2010 or newer) for the cost-benefit analysis portion of the course.

Course Description:

The central idea of decision analysis is the *formalization* and application of rules for decision-making. Successful development and use of these tools reduces reliance on intuition and overly simplified heuristics in favor of concrete logical models ascribing to the concept of evidence based decision-making. This in turn motivates improved decisions (and by extension, improved outcomes). Additionally, and perhaps more importantly, formal decision analysis affords practitioners a formalized explanation of the process that informed their decisions which can be directly communicated to others.

This course is designed to provide an overview of the theory and process of decision analysis through both an overview of the general concepts as well as an introduction to some of the more common specific tools and models. These tools include but are not limited to: benefit-cost analysis, Economic Impact Assessment models; game theory and models of strategic interaction; behavioral economics models; and risk assessment and management models.

The learning objectives of this course are:

- Understand basics about how policy and project decisions can and should be made via formal decision analysis
- Understand how decision models inform policy and project decisions across a wide range of applications
- Use core set of tools to analyze decisions
- Learn how to apply and develop a core set of decision analysis models
- Learn how to assess and critique the decision analysis models of others.

Grade Determination and Final Examination Details:

Tutorial Assignments	20%
Term Assignment	20%
Midterm Examination	25%
Final Examination	35% (Scheduled by the Registrar)

Further instruction on methods of submission and due dates will be provided in class and on D2L. Be sure to check on D2L each week for readings and assignments.

Grading*: Letter grades as described in the Faculty of Graduate Studies Calendar (see section E.1 of Calendar online) will be given for all elements of grade determination noted above. The course grade will be determined based on a weighted average of those grades according to the percentages shown above. In the event that elements are marked on a numerical (percentage) basis, they will be converted to letter grades. As a guide to determining standing, the following letter grade equivalences will generally apply:

A+	97-100	B	75-79	C-	60-62
A	90-96	B-	70-74	D+	55-59
A-	85-89	C+	67-69	D	50-54
B+	80-84	C	63-66	F	0-49

**Please note: information above as per the FGS Calendar.*

Major Topics (*Subject to change*)

1. Review and extension of topics from PPOL 605:
 - a. Valuation and cost (consumer valuation, sunk cost, opportunity cost)
2. Cost benefit analysis
 - a. Internal consistency in modelling outcomes and the “Counterfactual” concept
 - b. Time value of money / discounting
 - c. Valuation methodologies
3. Economic impact assessment
 - a. Input-Output vs CGE modelling
4. Decision making under uncertainty
 - a. Trade-Offs under rational behavior
 - b. Expected payoffs vs expected utility and rational risk aversion
 - c. Contingent preferences, contingent probabilities and contingent choice
 - d. Experimental evidence and observed paradoxes of choice under uncertainty
 - e. Decision making under deep uncertainty
5. Game theory and strategic interaction
 - a. Payoff interdependency and the concept of “best response”
 - b. Bargaining and commitment
 - c. Predictability of Strategies

Important Notes:

- The School of Public Policy expects the highest standards of professional conduct by students, faculty and staff. Abusive or disrespectful behavior will not be tolerated. This includes any expression of prejudice in any of its forms.
- It is the student’s responsibility to be fully aware of the academic regulations outlined in the University Of Calgary Faculty Of Graduate Studies Calendar. Provisions regarding Student Misconduct (plagiarism, cheating and other academic misconduct) will be strictly enforced. Please review the University of Calgary’s Regulations on Plagiarism, Cheating and Other Academic Misconduct, online:
<http://www.ucalgary.ca/pubs/calendar/current/k-2.html>
<http://www.ucalgary.ca/pubs/calendar/current/k-5.html>
- Students seeking reappraisal of a piece of graded term work (term paper, essay, etc.) must discuss their work with the Instructor *within fifteen days* of the work being returned to the class. If not satisfied the student shall immediately take the matter to the Director of the MPP program or the Academic Director of the School and ask for a ruling and written

reassessment. Should the student wish a further appeal it must be addressed to the Director and Palmer Chair of the School within 15 days of the ruling by the MPP Director or the Academic Director. For further information see the School of Public Policy Student Appeals Process at:

<http://www.policyschool.ca/wp-content/uploads/2017/06/Student-Academic-Appeals.pdf>

- Examinations will not be given prior to the scheduled date.
- Students seeking an accommodation based on disability or medical concerns should contact Student Accessibility Services; SAS will process the request and issue letters of accommodation to instructors. For additional information on support services and accommodations for students with disabilities, Visit www.ucalgary.ca/access/. Students who require an accommodation in relation to their coursework based on a protected ground other than disability should communicate this need in writing to their Instructor. The full policy on Student Accommodations is available at:
<http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>
- All material used in this course is for the sole use of the individual and should not be recopied in either print or digital format. For copyright guidelines, including those relating to photocopying and electronic copies, please refer to the Association of Universities and Colleges of Canada (AUCC) fair dealing guidelines.
<http://library.ucalgary.ca/copyright/fair-dealing>
- The University of Calgary complies with the requirements of the *Freedom of Information and Privacy Act*. The University's policy on the sharing of student information with third parties can be found here: <http://www.ucalgary.ca/legalservices/files/legalservices/pg-pi-of-students-to-3rd-parties.pdf>. The University's policy on the sharing of student information with the subject can be found here:
<http://www.ucalgary.ca/legalservices/files/legalservices/pg-pi-of-student-to-subject.pdf>
- A link for the Student Ombuds' Office is www.ucalgary.ca/ombuds/
- Links to campus mental health resources include: www.ucalgary.ca/wellnesscentre/ and www.ucalgary.ca/mentalhealth/.
- In the event of an emergency, students may be required to evacuate the building. If evacuation is ordered, follow these procedures:
 - Stay calm, do not rush, and do not panic.
 - Safely stop your work.
 - Gather your personal belongings if it is safe to do so. (keys, purses, jackets, cell phones, etc. It may be hours before you are allowed back in the building.)
 - If safe, close your office door and window, but do not lock them.
 - If directed by wardens, follow their instructions.
 - Use the closest emergency exit. Do not use the elevator.
 - Proceed to the designated Emergency Assembly point in front of the Holiday Inn on 8th avenue to the west of the Downtown Campus.
 - Do not re-enter the building or work area until you have been advised by emergency responders that it is safe to do so.

Graduate Students' Union Vice-President, Academic

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Emergency Assembly Point

Holiday Inn Lobby (weather permitting)

1020 8th Avenue SW

Calgary, Alberta T2P 1J2

Or remain at nearest exit point

Safewalk / Campus Security: 220-5333

A handwritten signature in blue ink, appearing to read "Kiri McQuillan".