

**PhD C781
Advanced Topics in Economic Evaluation in Health Care
Fall 2026 Course Outline**

**Health Policy and Management Area
DeGroote School of Business
McMaster University**

COURSE OBJECTIVE

The goal of doctoral seminar course is to provide students with an advanced understanding of topics, in this instance related to economic evaluation, in health care. The intent is to discuss current topics in economic evaluation and their practical relevance for health care managers/policy makers. The small group seminar format will assist in developing a deep theoretical understanding of the frameworks for analysis used in the economic evaluation field, with each student taking turns on leading a portion of the seminar. It will require that each student produces a conference abstract, and a journal article on one of several selected topics which will be targeted to specific journals.

INSTRUCTOR AND CONTACT INFORMATION

**Section 1:
Jacob Smith**
Instructor

smitj99@mcmaster.ca

Office: ONLINE

Office Hours: TBD

Class Time: Wednesday 6:00 to 9:00 pm

COURSE ELEMENTS

Credit Value:	3	Leadership:	Yes	IT skills:	Yes	Global view:	Yes
Avenue:	Yes	Ethics:	Yes	Numeracy:	Yes	Written skills:	Yes
Participation:	Yes	Innovation:	Yes	Group work:	Yes	Oral skills:	Yes
Evidence-based:	Yes	Experiential:	Yes	Final Exam:	No	Guest speaker(s):	No

COURSE DESCRIPTION

This seminar format course is designed to provide an advanced understanding of economic evaluation in healthcare to help prepare doctoral students for careers in management roles. The course examines the field of health related economics with emphasis on government (public), administrative and pharmaceutical industry related issues. Both theoretical and practical concepts will be covered. The overarching perspective will be that of the decision maker, including some of the challenges associated with putting these economic analyses to work in the decision making process. In addition, recent and controversial methods will be examined that can be used when undertaking or reviewing economic evaluations. Specific evaluation topics and applications will include a brief review of basic concepts in economic evaluation in health care, and an in depth examination of: utility measures, discrete choice experiments, productivity losses, maximizing health, determining cost-effectiveness thresholds, handling of uncertainty, probabilistic analyses and their collective impact on decision making in government and the private sector.

LEARNING OUTCOMES

Upon completion of this course, students will be able to complete the following key tasks:

- Demonstrate an advanced understanding of the fundamental concepts and methods for economic evaluation in healthcare;
- Identify key barriers that affect economic evaluation uptake in decision making
- Explain why adoption of economic evaluations are not always considered or assist decision making;
- Communicate effectively in the economic evaluation environment (for health);
- Draft a critical review of an article related to economic evaluation.
- Draft a conference abstract;
- Draft and potentially submit a journal article to a peer reviewed journal.

REQUIRED COURSE MATERIALS AND READINGS

Avenue registration for course content, readings and case materials

➤ <http://avenue.mcmaster.ca>

\$ FREE

Recommended Textbooks (required purchase, new and used copies available):

Eldin, R., McCabe, C., Hulme, C., Hall, P., and Wright, J (2015)

Cost Effectiveness Modelling for Health Technology Assessment: A Practical Course (\$124 new, Amazon Chapter Indigo, etc). PDF available through McMaster Library Website.

Drummond, M.F., Sculpher, M.J., Claxton, K., Stoddard G.L., and Torrance, G.W. (2015)

Methods for the economic evaluation of health care programmes. 4th Edition. Oxford University Press. (\$76 new, \$50-\$55 used, Amazon, Chapters Indigo, etc)

Felder, S., Mayrhofer, T. (2022) Medical Decision Making: A Health Economic Primer Third Edition. Springer (\$ 91.61 Amazon, Chapters Indigo).

EVALUATION

Learning in this course comes from readings, lectures, in-class discussion, small group work and participation, preparation of assignments, and out-of-class analysis. All work will be evaluated on an individual basis except where group work is expected. In these cases group members will share the same grade, unless all group members agree to an adjustment. Participation grades may be redistributed to “leading sessions” and “article commentaries” at the discretion of the student no later than one week before the end of the term.

Components and Weights

Leading Sessions	Effectiveness in presenting discussion questions to guide discussion of weekly readings (1 x 15%)	20%
Class Participation	Class discussion and discussion board participation and preparedness	15%
Article Commentary/ Letter to Editor	1000-1500 word critique of a recent article in Pharmacoeconomics or Value in Health	20%
Final Econ Analysis	Conference Abstract (Final Project Outline) - (10%) Presentation (15%), & manuscript (25%)	50%
Total		100%

Grade Conversion

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme:

LETTER GRADE	PERCENT	POINTS
A+	90-100	12
A	85-89	11
A-	80-84	10
B+	75-79	9
B	70-74	8
B-	60-69	7
F	00-59	0

Communication and Feedback

Students that are uncomfortable in directly approaching an instructor regarding a course concern may send a confidential and anonymous email to the respective Area Chair or Associate Dean:

<http://mbastudent.degroote.mcmaster.ca/contact/anonymous/>

Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course issues should NOT be sent to the Administrative Assistant. **Please include the course number ‘C781’ in all emails to facilitate timely responses.**

Instructors are encouraged to conduct an informal course review with students by Week #4 to allow time for modifications in curriculum delivery. Instructors should provide evaluation feedback for at least 10% of the final grade to students prior to Week #8 in the term.

Component #1 – Leading Sessions

Each student in this class will be assigned a paper from the comprehensive exam reading list to present. We will not cover all of these papers however it is hoped that by doing it this way you get some coverage of the “required readings” in depth.

Component #2 – Class Participation

You are expected to show up to each class, be present for each session and engage thoughtfully. This is a qualitative mark with the main criteria of being present in class. You are permitted miss one class with prior permission. Emergencies and religious exemptions are to be considered under standard university protocol. ***This is a small class so every student matters!***

Component #3 – Article Commentary/Letter to the Editor

You will be asked to choose a article from the most recent issue of Value in Health or Pharmacoeconomics and will write a thoughtful critique of the article following journal standards. I will encourage each of you to work on this to the point where you feel comfortable submitting to the journal directly (though this is not a requirement). This will help develop your profile as doctoral students who are able to engage this literature thoughtfully. Please keep this assignment between 1000-1500 word with a maximum of 1 figure/table.

Component #4 – Economic Evaluation

You will be asked to conduct your own economic evaluation. You can do this on your own or in pairs (I recommend pairs). I would review clinical trial data clinicaltrials.gov (Filtering by reported results) to get a sense of the clinical pathway which a new novel treatment would be used and identify cost and utility based data from the Tufts Utility database and CIHI Patient Cost Calculator Respectively. Your economic analysis should include baseline ICERs, Deterministic and Probabilistic Sensitivity Analysis and Noted Limitations of your work.

ACADEMIC DISHONESTY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: “Grade of F assigned for academic dishonesty”), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at:

www.mcmaster.ca/academicintegrity

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations

ONLY IF APPLICABLE

In this course we will be using a web-based service (Turnitin.com) to reveal plagiarism. Students will be expected to submit their work electronically to Turnitin.com and in hard copy so that it can be checked for academic dishonesty. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to;

<http://www.mcmaster.ca/academicintegrity/turnitin/students/>

Language for Use in Courses with an On-Line Element

In this course we will be using Avenue to Learn. Students should be aware that when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure.

If you have any questions or concerns about such disclosure, please discuss this with the course instructor.

MISSED ACADEMIC WORK

Missed Mid-Term Examinations / Tests / Class Participation

Where students miss a regularly scheduled mid-term or class participation for legitimate reasons as determined by the Student Experience – Academic (MBA) office, the weight for that test/participation will be distributed across other evaluative components of the course at the discretion of the instructor. Documentation explaining such an absence must be provided to the Student Experience – Academic (MBA) office within five (5) working days upon returning to school.

To document absences for health related reasons, please provide to Student Experience – Academic (MBA) office the Petition for Relief for MBA Missed Term Work and the McMaster University Student Health Certificate which can be found on the DeGroote website at <http://mbastudent.degroote.mcmaster.ca/forms-and-applications/>. Please do not use the online McMaster Student Absence Form as this is for Undergraduate students only. University policy states that a student may submit a maximum of three (3) medical certificates per year after which the student must meet with the Director of the program.

To document absences for reasons other than health related, please provide Student Experience – Academic (MBA) office the Petition for Relief for MBA Missed Term Work and documentation supporting the reason for the absence.

Students unable to write a mid-term at the posted exam time due to the following reasons: religious; work-related (for part-time students only); representing university at an academic or varsity athletic event; conflicts between two overlapping scheduled mid-term exams; or other extenuating circumstances, have the option of applying for special exam arrangements. Such requests must be made to the Student Experience – Academic (MBA) office at least ten (10) working days before the scheduled exam along with acceptable documentation. Instructors cannot themselves allow students to unofficially write make-up exams/tests. Adjudication of the request must be handled by Student Experience – Academic (MBA).

If a mid-term exam is missed without a valid reason, students will receive a grade of zero (0) for that component.

Missed Final Examinations

A student who misses a final examination without good reason will receive a mark of 0 on the examination.

All applications for deferred and special examination arrangements must be made to the Student Experience – Academic (MBA) office. Failure to meet the stated deadlines may result in the denial of these arrangements. Deferred examination privileges, if granted,

must be satisfied during the examination period at the end of the following term. There will be one common sitting for all deferred exams.

Failure to write an approved deferred examination at the pre-scheduled time will result in a failure for that examination, except in the case of exceptional circumstances where documentation has been provided and approved. Upon approval, no credit will be given for the course, and the notation N.C. (no credit) will be placed on the student's transcript. Students receiving no credit for a required course must repeat the course. Optional or elective courses for which no credit is given may be repeated or replaced with another course of equal credit value.

Requests for a second deferral or rescheduling of a deferred examination will not be considered.

Any student who is unable to write a final examination because of illness is required to submit the Application for Deferred MBA Final Examination and a statement from a doctor certifying illness on the date of the examination. The Application for Deferred MBA Final Examination and the McMaster University Student Health Certificate can be found on the DeGroote website at <http://mbastudent.degroote.mcmaster.ca/forms-and-applications/>. Please do not use the online McMaster Student Absence Form as this is for Undergraduate students only. Students who write examinations while ill will not be given special consideration after the fact.

In such cases, the request for a deferred examination privilege must be made in writing to the Student Experience – Academic (MBA) office within five business days of the missed examination.

Special examination arrangements may be made for students unable to write at the posted exam time due to compelling reasons (for example religious, or for part-time students only, work-related reasons):

- Students who have religious obligations which make it impossible to write examinations at the times posted are required to produce a letter from their religious leader stating that they are unable to be present owing to a religious obligation.
- Part-time students who have business commitments which make it impossible to write examinations at the times posted are required to produce a letter on company letterhead from the student's immediate supervisor stating that they are unable to be present owing to a specific job commitment.

In such cases, applications must be made in writing to the Student Experience – Academic (MBA) office at least ten business days before the scheduled examination date and acceptable documentation must be supplied.

If a student is representing the University at an academic or athletic event and is available at an overlapping scheduled time of the test/examination, the student may write the

test/examination at an approved location with an approved invigilator, as determined by the Student Experience – Academic (MBA) office.

In such cases, the request for a deferred examination privilege must be made in writing to the Student Experience – Academic (MBA) office within ten business days of the end of the examination period.

Note: A fee of \$50 will be charged for a deferred exam written on campus and a fee of \$100 for deferred exams written elsewhere. In cases where the student's standing is in doubt, the Graduate Admissions and Study Committee may require that the student with one or more deferred examination privileges refrain from re-registering until the examination(s) have been cleared.

STUDENT ACCESSIBILITY SERVICES

Student Accessibility Services (SAS) offers various support services for students with disabilities. Students are required to inform SAS of accommodation needs for course work at the outset of term. Students must forward a copy of such SAS accommodation to the instructor normally, within the first three (3) weeks of classes by setting up an appointment with the instructor. If a student with a disability chooses NOT to take advantage of an SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. The SAS website is:

<http://sas.mcmaster.ca>

POTENTIAL MODIFICATION TO THE COURSE

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

ACKNOWLEDGEMENT OF COURSE POLICIES

Your registration and continuous participation (e.g. on A2L, in the classroom, etc.) to the various learning activities of MBA C711 (if needed) will be considered to be an implicit acknowledgement of the course policies outlined above, or of any other that may be announced during lecture and/or on A2L. **It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly.**

Lack of awareness of the course policies **cannot be invoked** at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

COURSE SCHEDULE

C781 Advanced Topics in Economic Evaluation in health: Fall 2026 Schedule

WEEK	DATE	TOPIC	READINGS AND PRESENTATION
1	September 9	Economic Evaluation, Cost Effectiveness Analysis and Health Care Resource Allocation	Cost Effectiveness Modelling for Health Technology Assessment Ch 1. Lead: Instructor
2	September 16	Searching the Literature; Measuring Costs; Measuring Effects.	Cost Effectiveness Modelling for Health Technology Assessment Ch 2. Lead: Instructor
3	September 23	Decision Tree Models	Cost Effectiveness Modelling for Health Technology Assessment Ch 3. Paper Presentation
4	September 30	Markov Models	Cost Effectiveness Modelling for Health Technology Assessment Ch 5. Paper Presentation
5	October 7	Deterministic Sensitivity Analysis; One way and Two-way Sensitivity Analysis	Cost Effectiveness Modelling for Health Technology Assessment Ch 4. Paper Presentation Critical Review of Article DUE @11:59 PM
	October 14	Reading Week	

6	October 21	Probabilistic Sensitivity Analysis	Cost Effectiveness Modelling for Health Technology Assessment Ch 4, Ch 5, Ch 6. Paper Presentation Econ Evaluation Proposal Due @11:59 PM
7	October 28	Value of Information Analysis	Cost Effectiveness Modelling for Health Technology Assessment Ch 12
8	November 4	Budget Impact Analysis	Selected Readings (Possible Guest Speaker)
9	November 11	Funding Prioritization and League Tables	Selected Readings
10	November 18	Multiple Criteria Decision Analysis	Selected Readings
11	November 25	Paper Presentations	Selected Readings
12	December 2	No Class, Final Drafts of Econ Analysis Due	None

Reading List:

NOTE: this reading list will be updated.

Week #1:

1. Cost Effectiveness Modelling for Health Technology Assessment Ch 1
2. Methods for the Economic Evaluation of health Care Programmes Chapter 1-2

Week #2:

1. Cost Effectiveness Modelling for Health Technology Assessment Ch 2
2. Methods for the Economic Evaluation of health Care Programmes Chapter 3-4, 8
3. [LINK] Tufts CEA Registry <https://cear.tuftsmedicalcenter.org/>
4. [LINK] CIHI Patient Cost Estimator <https://www.cihi.ca/en/patient-cost-estimator>
5. [LINK] ClinicalTrials.gov <https://clinicaltrials.gov/>

Week #3:

1. Cost Effectiveness Modelling for Health Technology Assessment Ch 3.
2. Methods for the Economic Evaluation of health Care Programmes Chapter 9.
3. Hancock-Howard, Rebecca L., et al. "Cost effectiveness of transcatheter aortic valve replacement compared to medical management in inoperable patients with severe aortic stenosis: Canadian analysis based on the PARTNER Trial Cohort B findings." *Journal of Medical Economics* 16.4 (2013): 566-574.

Student Presentation: Bansback, N., Brazier, J., Tsuchiya, A., Anis, A. (2012) Using a discrete choice experiment to estimate health state utility values. *J Health Econ*, 31, 306-318.

Week #4:

1. Cost Effectiveness Modelling for Health Technology Assessment Ch 5.
2. Azizam, Nor Azmaniza, et al. "Cost-effectiveness analysis of biologic sequential treatments for moderate-to-severe psoriasis: A Malaysian healthcare system perspective." *Plos one* 19.9 (2024): e0307234.

Student Presentation: Robberstad, B. (2005). QALYs vs DALYs vs Lys gained: What are the differences, and what difference do they make for health care priority setting? *Norsk Epidemiologi*, 15(2), 183–191.

Week #5:

1. Cost Effectiveness Modelling for Health Technology Assessment Ch 4.

Lecture Notes*

Student Presentation: Newman, P.J., Cohen, J.T., Weinstein, M.C. (2014) Updating cost-effectiveness – The curious resilience of the \$50,000-per-QALY threshold. *NEJM*, 371(5), 796-797

READING WEEK

Week #6:

1. Cost Effectiveness Modelling for Health Technology Assessment Ch 4, Ch 5, Ch 6.

Student Presentation: Claxton K. (2008) Exploring uncertainty in cost-effectiveness analysis. *Pharmacoeconomics*, 26(9), 781-798

Week #7:

1. Cost Effectiveness Modelling for Health Technology Assessment Ch 12
2. Medical Decision Making: A Health Economic Primer Chapter 4-5.
3. Wilson, Edward CF. "A practical guide to value of information analysis." *Pharmacoeconomics* 33.2 (2015): 105-121.

Week #8:

1. Sullivan, Sean D., et al. "Budget impact analysis—principles of good practice: report of the ISPOR 2012 Budget Impact Analysis Good Practice II Task Force." *Value in health* 17.1 (2014): 5-14.

Week #9:

1. Mason, J., Drummond, M., & Torrance, G. (1993). Some guidelines on the use of cost effectiveness league tables. *British Medical Journal*, 306(6877), 570-572

Week #10:

1. Thokala, P., Devlin, N., Marsh, K., Baltussen, R., Boysen, M., Kalo, Z., Longrenn, T., Mussen, F., Peacock, S., Watkins, J., Ijzerman, M. (2016) Multiple criteria decision analysis for health care decision making – An introduction: Report 1 of the ISPOR MCDA emerging good practices task force. Value in Health, 19, 1.-13