

Course Syllabus

HECON 520: Economic Evaluation for Health Technology Assessment

Winter Quarter

Course 2 of 3 in the *Certificate in Health Economics, Health Technology Assessment, and Market Access*

Instructors:

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Course Description

(2025-2026 curriculum; subject to slight changes for 2026-2027)

This course is intended to introduce students to economic evaluation in healthcare—specifically cost-effectiveness analysis of pharmaceuticals, devices, and other healthcare interventions. It covers topics such as methods for economic evaluation in healthcare, decision modeling, preference measures, and the development of coverage and reimbursement policies using cost-effectiveness data. Instructors teach introductory spreadsheet modeling and use contemporary examples from the literature to illustrate key concepts.

Course Learning Outcomes

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

- Assess the strengths and weaknesses of the different methods for economic evaluation in health care.
- Evaluate approaches to preference-based measures of patient quality of life.
- Understand cost and outcomes modeling techniques for economic evaluation.
- Create an introductory decision analysis model using spreadsheet software.
- Critically evaluate cost-effectiveness studies.
- Develop effective presentations of economic evaluations.
- Understand the role of economic evaluation in healthcare decision-making and health policy.
- Understand the process of budget impact analysis.

Course Lessons

- Module 1: CONCEPTS—Foundations of Economic Evaluation in Health Care
 - Lesson 1: Overview of Economic Evaluation
 - 1-1. Introduction to economic evaluation in healthcare
 - 1-2. Foundations and interpretation of economic evaluations
 - 1-3. Second Panel on cost-effectiveness in health and medicine
 - Lesson 2: Types of Economic Evaluation in Healthcare
 - 2-1. Types of economic evaluation in healthcare
 - 2-2. Cost-effectiveness and cost-consequences analyses
 - 2-3. Cost-utility analysis
 - 2-4. Common errors and misconceptions about economic evaluation in healthcare
- Module 2: FRAMEWORK—Framing Economic Evaluations and Decision Modeling
 - Lesson 3: Framing Economic Evaluations and Decision Analysis
 - 3-1. Decision analysis: framing the study and building a decision tree
 - 3-2. Sensitivity analysis and model validation
 - Lesson 4: Introduction to Spreadsheet Modeling
 - 4-1. Spreadsheet model structure in Excel
 - 4-2. Using a spreadsheet model (part a) and demonstration (part b)
 - 4-3. One-way sensitivity analysis in Excel (part a) and demonstration (part b)
- Module 3: DATA—Evaluating Clinical Data, Costs, and Health State Preferences
 - Lesson 5: Assessing Clinical Data
 - 5-1. Quality measures for RCTs
 - 5-2. Confounding and bias in observational data
 - Lesson 6: Methods for Cost Evaluation
 - 6-1. Determining costs for economic evaluation in healthcare
 - Lesson 7: Health-Related Quality of Life and Preferences
 - 7-1. Measuring health-related quality of life
 - 7-2. Methods for eliciting preferences to calculate QALYs
- Module 4: APPLICATION—Advanced Topics in Economic Evaluation
 - Lesson 8: Presenting, Reporting, and Critiquing Economic Evaluations
 - 8-1. Presenting and evaluating economic evaluations
 - 8-2. Critiquing economic evaluations—CHEQUE tool Part 1 and Part 2
 - 8-3. Critiquing economic evaluations—CHEERS
 - Lesson 9: Economic Evaluation and Randomized Clinical Trials
 - 9-1. Design of trial-based economic evaluations
 - 9-2. Data collection and trial-based economic evaluations
 - Lesson 10: Advanced Modeling: Markov Models and Uncertainty Evaluation

- 10-1. Markov modeling
- 10-2. Probabilistic sensitivity analysis (part a) and demonstration (part b)
- 10-3. Value frameworks and elements of value
- Lesson 11: Budget Impact Analysis
 - 11-1. Estimating Budget Impact – Part 1
 - 11-2. Estimating Budget Impact – Part 2