

**M19-540 Decision Analysis for Clinical Investigation and Economic Evaluation**  
**Washington University School of Medicine**  
**Friday 9:00 am – 12:00 pm**  
**Fall 2015**  
**Taylor Avenue Building (TAB) Richmond Room 2132**

**INSTRUCTORS**

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**COURSE OVERVIEW:**

This 3-credit course covers the methods and applications of decision analysis and cost-effectiveness analysis in health care strategy assessment, medical decision making, and health resource allocation. At the conclusion of the class, the student will have an understanding of the theoretical basis for economic evaluation and decision analysis, its application, and hands-on experience in the application of the methods. Among the topics covered are development of a research topic and research questions, development of a decision analytic model, estimation of costs and effectiveness, use of preference based measures, addressing uncertainty and preparation of a manuscript presenting a decision analytic study. Students are required to complete a group project to apply methods and techniques they learn in class and prepare a research manuscript as the final project report. Course materials will be tailored to meet the needs of individual projects.

**REQUIRED READING:**

**Decision Making in Health and Medicine: Integrating evidence and values** (2001)  
Mayriam Hunink, Paul Glasziou et al. Cambridge, UK: Cambridge University Press.  
(Reserved in Becker library)

**OTHER RECOMMENDED READING:**

**Methods for the Economic Evaluation of Health Care Programmes** (3<sup>rd</sup> Edition) (2005) M Drummond, G Stoddart, and G. Torrance. Oxford: Oxford University Press.

## **REQUIRED SOFTWARE:**

We will be using TreeAge Pro software to demonstrate how to conduct decision analysis and economic evaluation. You are highly recommended to obtain a copy of TreeAge Pro for your own computer to 1) practice the methods and the examples we discuss in class; and 2) include these methods in your term project. You can get a trial version for free, but the trial only lasts three weeks and cannot be used for any coursework or class participation. For class use and your project, you can obtain a student or a student research version of TreeAge Pro Suite depending on the complexity of your project. The student version costs \$45 and the student research version costs \$250. You can purchase by visiting the following link:

<http://www.treeage.com/shop/>

Note: This product is well supported for PC users. The MAC version was released recently but students were challenged to make it work.

## **COURSE REQUIREMENTS:**

The objective of this course is to guide you through the steps of decision modeling and cost-effectiveness analysis. You will be asked to form into three groups to work on a project of your own choice. You will be evaluated based on but not limited to the following components:

- 1) Project proposal
  - Choose one research topic and propose a set of research questions and aims.
  - Come up with a feasible research plan by identifying i) the outcome measure(s) to be analyzed; ii) potential strategies or treatments; iii) data that could be used.
  - The format of the proposal should be the same as the NIH Specific Aim page (one page limit).
  - A brief presentation (20 minutes for each team) is expected on the day of proposal submission.
  
- 2) Referee report
  - Papers will be assigned to each student to read.
  - Write critiques on i) use of data; ii) choice of method and modeling.
  - Suggest improvements.
  - 1.5 page limit.
  
- 3) Project presentation
  - Using the methods taught in class, you are required to complete your analysis of the research project.
  - Discussants will be assigned for each project.
  - Each team needs to prepare a 30-minute in-class presentation with 20-minute Q&A in the last sessions of the class.

- Email the slides to ALL class instructors, teaching fellows, and the assigned discussants 24 hours before your presentation.

4) Project report

- Each team is required to hand out one project report (first draft is due on the day of your presentation; final draft is due a week after the last class.).
- The format of the project report is the same as the manuscript requirements for JAMA. (See JAMA Instructions for Authors <http://jama.jamanetwork.com/public/instructionsForAuthors.aspx>)
- Incorporate suggestions from the presentation and the discussion in your final report.
- Email the report to ALL class instructors by the due date.

**GRADE DISTRIBUTION:**

Class participation	10%
Project proposal	20%
Referee report	20%
Oral Presentation	20%
Final report	30%

**CLASS EXPECTATIONS:**

The instructors will prepare and deliver course materials, be available to students by appointment, and provide timely feedback on student performance. Students are expected to attend each class on time, participate in class discussions, seek any necessary clarification regarding course expectations, and fulfill course requirements in a timely manner. Any issues with attendance, meeting deadlines, or completing assignments should be discussed promptly with the instructors. Email is the best way to contact the instructors.

Attendance: **All classes and at least two Epidemiology and Clinical Outcomes Research Seminars** (see course schedule) are required. As a courtesy to other students, you are expected to arrive on time. **More than one unexcused absence from class may result in a lowered grade.** Do not enroll if you have absences already planned.

Blackboard: Please check the site regularly for class announcements and readings. Blackboard will be the primary vehicle for course communication.

Course assignments: Assignments include project proposals, referee reports, presentation slides, and final reports. All written assignments should be delivered **before** class on the day of the deadline via email unless otherwise specified. Do not use Blackboard for submitting course assignments. Late submission will not be accepted for credit unless prior approval is obtained from the instructors or a compelling situation prevents prior approval. The instructors will allow for documented family emergencies. Health issues must be documented by a physician.

Mobile phones/social networking: Phone ringers should be silenced during class. Utilization of social network sites is not allowed during class.

Academic Honesty: Students are expected to complete course assignments in accordance with Washington University's academic rules and regulations regarding honesty and integrity. Any evidence of academic misconduct, including cheating, failure to cite sources, and plagiarism will result in appropriate action as dictated by Washington University. Violations of academic honesty will result in notification to the Associate Dean of Academic Affairs at the Washington University School of Medicine, as well as to the MPHS Director and Program Committee. Any hint of violation will result in no grade. For more information, see visit University's Student Academic Integrity Policy: [www.wustl.edu/policies/undergraduateAcademicIntegrity.html](http://www.wustl.edu/policies/undergraduateAcademicIntegrity.html).

Special Needs: Per University policy, students with learning, sensory, or physical disability or other impairment should contact the Washington University Center for Advanced Learning Disability Resources (DR) at (314) 935-4062 or visit <http://disability.wustl.edu/DisabilityResources.aspx>. The DR office is located in Cornerstone on the Danforth Campus. Students whose second language is English and/or those in need of assistance in lectures, reading, or writing assignments may contact the University Writing Center at (314) 935-4981 or visit <http://artsci.wustl.edu/~writng/home.html>.

### **TEACHING FELLOWS:**

The teaching fellows are a critical resource for all of you. They will hold office hours and will answer brief clarification questions immediately before and after class; will collect and maintain a record of all assignments turned in; and will be responsible for the management of the class website. If you have a question about course content, please be sure to email all of the teaching fellows.

**Name**

Jennifer Yu

**Email**

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## **TENTATIVE COURSE SCHEDULE:**

Session 1: Course Introduction and Overview	08/28/2015
Session 2: Statistical Overview	09/04/2015
Session 3: Optimal Decision	09/11/2015
Epidemiology and Clinical Outcomes Research Seminar	09/17/2015 4:30-5:30 pm
Session 4: Introduction of TreeAge Pro	09/18/2015
Session 5: Valuing Outcomes	09/25/2015
Session 6: Proposal Presentation (Project proposal due)	10/02/2015
Session 7: Deciding when to test + Multiple test results	10/09/2015
Session 8: Finding and Summarizing Evidence	10/16/2015
Session 9: Cost-Effectiveness Analysis I (Referee report due)	10/23/2015
Session 10: TreeAge Pro – CEAI	10/30/2015
Session 11: Cost-Effectiveness Analysis II	11/06/2015
Epidemiology and Clinical Outcomes Research Seminar	11/12/2015 4:30-5:30 pm
Session 12: TreeAge Pro – CEAI	11/13/2015
Session 13: TreeAge Pro – CEAI + Q & A Session	11/20/2015
No Class – Thanksgiving	11/27/2015
Session 14: Project Presentations (First draft of project report due)	12/04/2015
Session 15: Project Evaluation and Discussion	12/11/2015
Final draft of the project report due	12/18/2015