BMI 538/638: Medical Decision Making

3.0 credit hours
Winter 2018 Online Course
via Sakai (https://sakai.ohsu.edu/xsl-portal)

PREREQUISITES:
No required courses. Algebra and basic knowledge of probability are required for completing 2x2 tables.

COURSE DESCRIPTION:
This course introduces the student to decision analysis (modeling of decisions), which is used to form health care policy and to make medical decisions. Given uncertain information and limited resources, students will use software to learn to build models that include all possible health outcomes of various medical decisions. The course will cover quantitative, analytics, qualitative and shared approaches to decision making, quality-of-life decision aids (for patients), decision support (for providers) and costs related to health outcomes. Students will apply decision analysis techniques in addressing real world problems.

INSTRUCTOR:
Course Instructor: Karen Eden, Ph.D.
Office: BICC 507; Phone: 503-494-2456; edenk@ohsu.edu

Jemal Ebrahim, jmlebrahim@gmail.com, will serve as the course TA.

REQUIRED TEXTBOOK AND SOFTWARE:

Software: Student version of TreeAge Pro Suite (www.treeage.com/shop) which will cost $45 to download and is good for 6 months for use with student activities.

RELEVANT LITERATURE AND RESOURCES:
Additional references distributed during class. There will be 3-4 supplemental papers distributed for online discussion. Each small group will discuss 3 of these papers during 3 different weeks. See syllabus for dates of discussion.

COURSE COORDINATION:
This will be a distance course taught via Sakai. Lectures, reading materials and assignments will be uploaded by 12 PM PST Wednesday afternoons, and homework assignments will be due before noon (PST) on Wednesday of the following week. The two quizzes, the expected value lab, and the TreeAge tutorial will also be due before Wednesday noon on the date designated. With the exception of the final exam, everything is due by noon (not midnight) on Wednesdays.

For any technical questions or if you need help logging in, please contact the Sakai Help Desk.

Hours: Sakai Help Desk is available Mon – Fri, 8 am – 10 pm Pacific and weekends and holidays 12 pm – 5 pm Pacific.
Contact Information:
(Toll-free) 877-972-5249
(Web) http://atech.ohsu.edu/help
(Email) sakai@ohsu.edu

All course work and communication will be via Sakai and email. Karen has dedicated “office hours” on Mondays, Wednesdays and Thursdays – meaning she will check the Sakai discussion boards on these days. Jemal will check on Wednesdays, Fridays and weekends. If you pose questions on the discussion boards specifically for the instructors, responses will likely be made on these days.

EVALUATION:
Grades are based on: 2 quizzes, a final exam, 1 lab report, 1 software tutorial, a critique paper, and online discussion.

Distance Learning Activities:

All materials will be available via Sakai, this includes:

- Weekly audio/visual or text seminars.
- Small group discussion (via Sakai discussion board) of current decision analysis literature.
- Small group discussion (via Sakai discussion board) of decision analysis projects.
- Email support of student homework.

GRADING SCALE:
Grades are assigned based on the following criteria:

- **A** 92-100
- **A-** 90-91.99
- **B+** 88-89.99
- **B** 82-87.99
- **B-** 80-81.99
- **C+** 78-79.99
- **C** 72-77.99
- **C-** 70-71.99
- **F** <70

35% Quiz 1 (10%); Quiz 2 (10%) TreeAge Tutorial (5%) and Expected Value Lab (10%)
35% Final
20% Journal Article Critique
10% Online Discussion

The details of each of these tasks are explained:

**Quizzes and Final Exam**
There will be 2 quizzes and one final exam given online. (Hint: Questions on the quizzes and final exam will be very similar to homework problems and online discussion of published decision analyses.) The quizzes and final exam are open-book. Students will have a few days to complete and submit the quiz which will involve 2x2 tables, creating basic decision models, computing answers and providing interpretation, understanding various decision making approaches. The final is designed to take less than 2 hours for students who have successfully completed all homework assignments and quizzes.

The final exam will be posted by 8 AM (US, PST) on March 15th and is multiple-choice. Once students have signed onto the exam, they will have 2 hours to complete it. The Sakai helpdesk will be available should questions arise related to Sakai. Karen and Jemal will also be available by email if clarification is needed on questions. The final exam must be completed by 5 PM (US, PST) on Saturday, March 17th when the Sakai help desk closes.

**Lab report, Software tutorial and Weekly Assignments**
There will be one lab report submitted this term. This is a decision analysis project (Expected value lab). There will also be one submission with figures that are created once the software tutorial (for TreeAge) is completed.

Weekly homework is not graded but **STRONGLY** recommended to be successful. The quizzes and final exam are very similar to assigned homework. We have set up a homework forum that Karen and Jemal will moderate. It is likely that a peer will respond with a suggestion before we can. We encourage this dialog around homework. Jemal is also available to review submitted homework and give specific feedback when asked,
via email. Submit your homework named as follows: 
**LastName.WeekXAssignment.doc.** For students who submit the homework on time, the answer key will be emailed after the due date.

**Journal Article Critique**
Each student will select one journal article (from a list available online via Sakai) with a decision analysis focus. More than one student will likely have the same article. Each discussant will submit to his/her small group a one-page, single-spaced summary/critique (including potential biases) of the article and post two questions (on Sakai discussion board) for classmates to respond to. The discussants of a paper should take the lead on responding to classmates' comments and additional questions. At the end of the week’s discussion, the discussant should post a 1-2 paragraph summary of the group discussion that all small groups can view. Grading will based on the critique, participation in small group discussions (of all 3 articles) and posted summary for own critique.

**Online Discussion**
Each student will have multiple opportunities to participate in online discussion. Grading will be based on participation (thoughtful questions and comments, frequency of postings) throughout the term. Participation online is extremely important to the value everyone derives from this class.

**DMICE Grading Policy:**
A grade of B (3.0) or better is mandatory in all Required courses in each domain. A grade of C (2.0) or better is mandatory in all Individual Competency courses in each domain. Students receiving grades lower than a B (3.0) in a Required course will be required to retake the course for a higher grade. If a student receives a deficient grade in an Individual Competency course, they have the option to retake the course for a higher grade, or complete an additional class from the Individual Competency courses offered in that particular domain.

A grade point average of 3.0 must be maintained. A student whose cumulative grade point average falls below 3.0 will immediately be placed on academic probation. Academic probation is intended to provide a student whose performance is less than satisfactory, a period of time to correct the deficiency. A student placed on academic probation because of grades must obtain a cumulative grade point average of at least 3.0 within one term. If a student on academic probation does not achieve a cumulative grade point average of 3.0 within the next term, the department may petition the Graduate Council for one term extension. Up to three consecutive extensions may be requested for a student on academic probation. Probationary students who fail to achieve a cumulative grade point average of 3.0 within the next term, and who do not receive an extension, will be dismissed from the graduate program for inadequate scholarship. A student will be removed from probation as soon as his/her cumulative grade point average is raised to 3.0 or above.
The grade “I” (incomplete) may be entered on the student’s record if a minor portion of the required work in a course is not completed in the allotted time. The grade of “I” should be used only when a student’s work during a term cannot be completed because of illness, accident or other circumstances beyond the student’s control. Conversion of the “I” to a letter grade may be made if the student completes the work within a period specified by the instructor of the course, but not to exceed one term. Students who receive a mark of “I” must complete the required work within the next term and the instructor must file and amended term grade report for the course, otherwise the Registrar shall convert the grade to an F.

Graduate Studies in the OHSU School of Medicine is committed to providing grades to students in a timely manner. Course instructors will provide students with information in writing at the beginning of each course that describes the grading policies and procedures including but not limited to evaluation criteria, expected time needed to grade individual student examinations and type of feedback they will provide. Class grades are due to the Registrar by the Friday following the week of finals. However, on those occasions when a grade has not been submitted by the deadline, the following procedure shall be followed:

1) The Department\(^1\)/Program Coordinator\(^2\) will immediately contact the Instructor requesting the missing grade, with a copy to the Program Director and Registrar.
2) If the grade is still overdue by the end of next week, the Department\(^1\) /Program Coordinator\(^2\) will email the Department Chair directly, with a copy to the Instructor and Program Director requesting resolution of the missing grade.
3) If, after an additional week the grade is still outstanding, the student or Department\(^1\) /Program Coordinator\(^2\) may petition the Office of Graduate students for final resolution.

\(^1\) For courses that are run by a specific department.
\(^2\) For the conjoined courses (course number is preceded by CON_ that are run by Graduate Studies.

**COURSE OBJECTIVES:**

- To gain an understanding of decision analyses in the biomedical literature and be able to critique it and understand the applicability of the findings to other situations.
- To become proficient in building basic decision analysis models through an understanding of the concepts which underlie these models.
- To develop some proficiency will decision analysis software.
- To understand various decision making approaches.

**SYLLABUS CHANGES AND RETENTION**

This syllabus is not to be considered a contract between the student and the School of Medicine. It is recognized that changes may be made as the need arises. Students are responsible for keeping a copy of the course syllabus for their records.

**COURSE OUTLINE:**
<table>
<thead>
<tr>
<th>Week</th>
<th>Dated*</th>
<th>Topics</th>
<th>Chapter in Hunink</th>
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<tbody>
<tr>
<td>1</td>
<td>January 10th</td>
<td>Introduction to Decision Analysis and Probability Pick Discussant Paper</td>
<td>1,2</td>
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<td>2</td>
<td>January 17th</td>
<td>2x2 Tables, Interpreting Diagnostic Information,</td>
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<td>3</td>
<td>January 24th</td>
<td>Introduction to TreeAge software (TreeAge Tutorial due January 31st)</td>
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<td>4</td>
<td>January 31st</td>
<td>Outcome Analysis/Utility Assessment/Attitude Towards Risk. Choosing the best treatment, Quiz 1 (due February 7th)</td>
<td>4</td>
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<td>5</td>
<td>February 7th</td>
<td>Expected Value Decision Making Deciding to test, Expected Value lab (due Feb 22st)</td>
<td>6</td>
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<td>6</td>
<td>February 14th</td>
<td>Markov Models Dual Processes Mankuta Article Discussion</td>
<td>10</td>
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<td>7</td>
<td>February 21st</td>
<td>Comparative and Cost Effectiveness Ross Article Discussion Quiz 2 (due February 28th)</td>
<td>9</td>
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<tr>
<td>8</td>
<td>February 28th</td>
<td>Comparison of decision methods Shared decision making, Decision aids. Jagsi/Yao Article Discussion.</td>
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<tr>
<td>9</td>
<td>March 7th</td>
<td>Decision support Review lecture and review problems</td>
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<tr>
<td>10</td>
<td>March 14th</td>
<td>Final distributed at 8 AM Thursday, March 15th. <strong>Exams must be completed by Saturday, March 17th, 5 PM (US, PST).</strong></td>
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<tr>
<td>11</td>
<td>March 21st</td>
<td>Guest lecture applying decision analysis to Psychiatry, by Laura Fochtmann, Course evaluation due. Discussion on which decision approach to take.</td>
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*Most weeks the course materials will be available on Monday but always will be posted by noon on Wednesday (please note exception, week 10).

**ACADEMIC HONESTY**
Course participants are expected to maintain academic honesty in their course work. Participants should refrain from seeking past published solutions to any assignments. Literature and resources (including Internet resources) employed in fulfilling assignments must be cited. See [http://www.ohsu.edu/xd/education/library/research-assistance/plagiarism.cfm?WT_rank=1#](http://www.ohsu.edu/xd/education/library/research-assistance/plagiarism.cfm?WT_rank=1#) for information on code of conduct for OHSU and [http://www.ohsu.edu/xd/education/teaching-and-learning-center/for-students/index.cfm](http://www.ohsu.edu/xd/education/teaching-and-learning-center/for-students/index.cfm) for more information on citing sources and recognizing plagiarism.
In an effort to uphold the principles and practice of academic honesty, faculty members at OHSU may use originality checking systems such as Turnitin to compare a student’s submitted work against multiple sources.

To protect student privacy in this process, it will be necessary to remove all personal information, i.e. student name, email address, student u-number, or any other personal information, from documents BEFORE submission.

STUDENT ACCESS
OHSU is committed to providing equal access to qualified students with disabilities. Student Access determines and facilitates reasonable accommodations, including academic adjustments and auxiliary aids, for students with documented disabilities. A qualified student with a disability is a person who meets the academic and technical standards requisite to admission or participation in a particular program of study. As defined by the Americans with Disability Act (ADA), a person with a disability has a physical or mental impairment that substantially limits one or more major life activities of the individual. This may include, but is not limited to, physical conditions, chronic health issues, sensory impairments, mental health conditions, learning disabilities and ADHD. Student Access works with students with disabilities from all of OHSU’s educational programs and at each campus.

Each school has an assigned Program Accommodation Liaison (PAL), who acts as an “in-house” resource for students and faculty concerning access issues for students with disabilities. The PAL works in collaboration with Student Access to implement recommended accommodations for students with disabilities.

It is recommended that you contact Student Access to consult about possible accommodations if you a) received disability accommodations in the past, b) begin experiencing academic difficulties, and/or c) are given a new diagnosis from your healthcare provider.

Learn more about Student Access:
Phone: 503 494-0082
Email: studentaccess@ohsu.edu
Website: www.ohsu.edu/student-access

COPYRIGHT INFORMATION
Every reasonable effort has been made to protect the copyright requirements of materials used in this course. Class participants are warned not to copy, audio, or videotape in violation of copyright laws. Journal articles will be kept on reserve at the library or online for student access. Copyright law does allow for making one personal copy of each article from the original article. This limit also applies to electronic sources.

To comply with the fair use doctrine of the US copyright law, Sakai course sites close three weeks after grades are posted with the Registrar. Please be sure to
download all course material you wish to keep before this time as you will have no further access to your courses.

**NOTE:** This syllabus and class schedule is subject to changes by the instructor. Changes will be made with as much advance notice as possible.

**DMICE COMMUNICATION POLICY**

1. If the syllabus directs the student to contact the TA before contacting the instructor, the student should do so. Otherwise, the student should contact the instructor and allow 2 business days (not including weekends) for a response.
2. If the student does not receive a response from the instructor within 2 business days, s/he should contact the TA (if there is one). When contacting the TA s/he should cc the instructor and Diane Doctor at doctord@ohsu.edu.
3. If a student does not receive a response from the TA within 1 business day (not including weekends), s/he should contact Diane Doctor at doctord@ohsu.edu and cc the instructor and the TA.
4. If Diane does not reply within 1 business day (not including weekends), the student should contact Andrea Ilg at ilgan@ohsu.edu.
5. Students having difficulties with Sakai should contact the Sakai Help Desk at sakai@ohsu.edu or at (877) 972-5249. Sakai help is available M-F from 8am to 10-pm and weekends from Noon to 5pm. Do not contact the instructor.

**COMMITMENT TO EQUITY AND INCLUSION**

Oregon Health & Science University is committed to creating and fostering a learning and working environment based on open communication and mutual respect. If you encounter sexual harassment, sexual misconduct, sexual assault, or discrimination based on race, color, religion, age, national origin or ancestry, veteran or military status, sex, marital status, pregnancy or parenting status, sexual orientation, gender identity, disability or any other protected status please contact the Affirmative Action and Equal Opportunity Department at 503-494-5148 or aaeo@ohsu.edu. Inquiries about Title IX compliance or sex/gender discrimination and harassment may be directed to the OHSU Title IX Coordinator at 503-494-0258 or titleix@ohsu.edu