Learning Objectives
The goal of this course is to teach the basic skills of applying evidence-based medicine (EBM). By the end of this course, students should be able to:

- For all students:
  - Phrase a clinical question in a way that allows seeking and application of evidence
  - Find the best evidence for a given clinical question
  - Critically appraise the evidence for the major types of clinical questions
  - Describe the limitations of EBM

- For clinicians:
  - Use the tools of EBM to improve clinical care
  - Teach others these tools

- For students whose focus is not clinical:
  - Support the EBM approach with informatics tools
  - Communicate effectively with clinicians about EBM

Activities
The course content will be posted starting August 15, 2012. The course consists of 10 units, listed in the syllabus below, that will all be posted when the course opens. The activities for each unit of the course consist of:

- Reading assignment from textbook
- Short on-line lecture
- Critical appraisal of a study (a total of 7) using a template, submitted via Sakai

The process of the critical appraisals will be as follows. After class registration is complete, each student will be assigned to one or two units (Units 2-5 and 7-9). The student(s) assigned to a unit will select a published article from the literature of clinical medicine, with the article falling into the category of that unit (e.g., Unit 2 diagnostic tests, Unit 3 clinical prediction guides, etc.). If more than one student is assigned to a unit, the students will work together to agree on a clinical question and select an article. Articles should be selected from a list available in the Unit 1 material.

* Please include “EBM” in the subject of all emails. Emails without this flag may be overlooked for several weeks.
Articles must be submitted to the Course Director by Friday of the week before the unit goes on-line. To make sure that the article illustrates the type of clinical question relevant to the unit the Course Director must approve the article before it is distributed to the class.

Once the article is approved, it will be available on-line by Wednesday, along with the other on-line material for that unit. **All students** (not just the students assigned to the unit) will read the article, along with the assigned textbook chapters, and they will review the on-line learning materials for the unit. Then, they will prepare their critical appraisal of the article using the templates available on-line. Critiques are due by the following Wednesday.

The instructor will provide feedback on all assignments as they are submitted, and assignments that are incorrect (e.g., wrong information entered on to template, etc.) may need to go through one or more cycles of “revise and resubmit.” Ultimately, all appraisals must be done correctly. All appraisals must be finalized by October 15, 2012, to pass the course.

**Discussion with others is a vital part of learning evidence-based medicine.** These discussions foster the central skill behind evidence-based medicine – critical thinking. Recognizing the challenges of discussion in the context of distance learning, the class offers four mechanisms for discussion:

1. The Sakai forum function will be enabled, allowing students to discuss the articles on-line. Participation in these forum discussions is encouraged and will be considered in class grades.

2. Students are encouraged to form “study groups” to meet regularly by phone (or in person) to discuss the article assigned for the week.

3. The class will meet on-campus at OHSU September 19-21. In early September, students will sign up for presentations at the on-campus session, which all students are expected to attend. These sessions will be highly interactive, giving students an opportunity to refine their critical appraisal skills and to learn an approach to teaching evidence-based medicine to others.

4. Students are welcome to contact the instructor by email for questions (lowero@ohsu.edu). Because I receive large numbers of emails and prioritize reading and responding to them, please be sure to include the phrase “EBM” in the subject line of your email. Otherwise, it may take several weeks before you receive a reply.

Although discussion is encouraged, it is expected that the written assignments will be the work of the individual student.

**Textbook**
Support
Technical support is provided by the Sakai Help Desk.
Hours: Sakai Help Desk is available Mon – Fri, 8 am – 10 pm and weekends and holidays 12 pm – 5 pm
Contact Information:
(Local) 503-494-7074 (4-7074 on campus)
(Toll-free) 877-972-5249
(Web) http://atech.ohsu.edu/help
(Email) sakai@ohsu.edu

Students also have access to all of the on-line resources of the OHSU Library.

Evaluation
Student grades will consist of critical appraisals (75%) and participation in the on-campus discussions and forum discussions (25%).

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 Department¹ /Program Coordinator² 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 Department¹ /Program Coordinator² 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 Department¹ /Program Coordinator² 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.

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# for information on code of conduct for OHSU and
http://www.ohsu.edu/xd/education/teaching-and-learning-center/for-students/index.cfm for more information on citing sources and recognizing plagiarism.

Student Access
Our program is committed to all students achieving their potential. If you have a disability or think you may have a disability (physical, learning, hearing, vision, psychological) which may need a reasonable accommodation please contact Student Access at (503) 494-0082 or e-mail at orchards@ohsu.edu to discuss your needs. You can also find more information at http://www.ohsu.edu/student-access. Because accommodations can take time to implement, it is important to have this discussion as soon as possible. All information regarding a student’s disability is kept in accordance with relevant state and federal laws.

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.

Course Schedule
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<table>
<thead>
<tr>
<th>Unit</th>
<th>Topic</th>
<th>Reading</th>
<th>Students submit article to Course Director</th>
<th>Unit materials available on-line</th>
<th>Critical appraisal due</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction</td>
<td>Chapters 1-3</td>
<td>n/a</td>
<td>8/15</td>
<td>8/22</td>
</tr>
<tr>
<td>2</td>
<td>Intervention - single studies</td>
<td>Chapter 4 (67-97)</td>
<td>8/17</td>
<td>8/22</td>
<td>8/29</td>
</tr>
<tr>
<td>3</td>
<td>Intervention - systematic reviews</td>
<td>Chapter 4 (98-110)</td>
<td>8/24</td>
<td>8/29</td>
<td>9/5</td>
</tr>
<tr>
<td>4</td>
<td>Intervention - qualitative studies, clinical decision analyses, economic analyses, practice guidelines</td>
<td>Chapter 4 (110-136)</td>
<td>8/31</td>
<td>9/5</td>
<td>9/12</td>
</tr>
<tr>
<td>5</td>
<td>Diagnosis - diagnostic tests</td>
<td>Chapter 5 (pages 137-158)</td>
<td>9/7</td>
<td>9/12</td>
<td>9/19</td>
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<tr>
<td>6</td>
<td>Teaching EBM</td>
<td>Chapter 9</td>
<td>No written assignment; for discussion on site</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Diagnosis - clinical prediction guides, screening</td>
<td>Chapter 5 (158-167)</td>
<td>9/14</td>
<td>9/19</td>
<td>9/26</td>
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<tr>
<td>8</td>
<td>Prognosis</td>
<td>Chapter 6</td>
<td>9/21</td>
<td>9/26</td>
<td>10/3</td>
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<tr>
<td>9</td>
<td>Harm</td>
<td>Chapter 7</td>
<td>9/28</td>
<td>10/3</td>
<td>10/10</td>
</tr>
<tr>
<td>10</td>
<td>Evaluation and limitations</td>
<td>Chapter 8</td>
<td>n/a</td>
<td>10/3</td>
<td>10/15</td>
</tr>
</tbody>
</table>

Last day to submit revised version of critical appraisals (if recommended by Course Director) 10/15