BME for Global Health (BME 5301/BME 6301)

Fall 2018

Course Information: Credit Hours: 3 hrs Class time: TR 10:30-11:50pm  Classroom:
Scale-up room, CCBS G.0706A

Instructor: Thomas Boland, Ph.D. Department of Metallurgical and Materials and
Biomedical Engineering Office: BE202 Phone: (915) 747-7992 FAX: (915) 747-8036 Email: tboland@utep.edu

Textbook: Biomedical Engineering for Global Health, Rebecca Richards-Kortum

Office Hours: by appointment

Course Goals: This course provides an overview of the role of engineering
technological advances to improve human health. The following points will be
emphasized throughout the semester, What are the challenges in healthcare delivery in
resource rich countries, remote locations or resource poor countries? How are we
paying for healthcare delivery? What is the role of engineering to solve healthcare
problems; and how do new healthcare technologies move from the lab to the bedside.

Student Learning Objectives: By the end of this course the student will: 1) We will
be able to compare and contrast these items between high and low resource settings;
2). will be able to enumerate legal and ethical issues associated with developing new
medical technologies.
**Grading:**
- Weekly homework 10%
- Midterm exam 30%
- Term Paper 10%
- Oral Presentation 20%
- Final Exam 30%
  
  Attendance will be factored into borderline grades.

**Term Paper and Oral Presentation:** One 5-7 page (12pt, double-space, 1” margin) term paper is due in the last week of class. Each student team must select a topic of disease and a health technology and turn in the written outline of the paper (due three weeks before paper due date). Students are encouraged to consult the instructor for topic selection and guidance for the paper. Each student will give a 10-minute oral presentation in class during the last week of classes. Other students are required to evaluate the peer and submit the evaluation forms, and thus, attendance for all presentations is mandatory.

**Final Exam:** A comprehensive final exam (Open books, open laptop, No internet) will be given.

**Grading Policy:** Final (midterm) grades will be determined based on the following.
- A: 90.00-100
- B: 80.00-89.99
- C: 70-79.99
- D: 60-69.99
- F: 0-59.99

**Drop and Withdrawal:** Please notify the instructor either by verbally or email of your intention of dropping the course

**Topics Covered for Fall 2018, Subject to changes**

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic covered</th>
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<tbody>
<tr>
<td>1</td>
<td>Emerging Medical Technologies, Technology Assessment, Basic Health &amp; Economic Data;</td>
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<tr>
<td>2</td>
<td>Health problems in developed and developing world</td>
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<td>3</td>
<td>Health Systems: A global comparisons</td>
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<td>4</td>
<td>Evolution of Technology: Scientific Method, Engineering Design &amp; Translational Research</td>
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<td>5</td>
<td>Prevention of Infectious Disease</td>
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<td>6</td>
<td>Ethics of Clinical Research</td>
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<td>7</td>
<td>Technologies for Early Detection of Cancer</td>
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<td>8</td>
<td>Cost-effectiveness of Cancer Screening</td>
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<td>9</td>
<td>Devices for Treatment of Heart Disease</td>
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<td>10</td>
<td>Clinical trials, Sample size calculation</td>
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<tr>
<td>11</td>
<td>FALL BREAK</td>
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<tr>
<td>12</td>
<td>Regulation of Healthcare Technologies</td>
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Disability
If you have or suspect a disability and need accommodations, you should contact The Disabled Student Services Office (DSSO) at 747-5148. You can also email the office at dss@utep.edu or go by the Union Building East, Room 106. For additional information, visit the DSSO website at www.utep.edu/dsso/.

Academic Integrity
I expect a commitment to truthfulness, honor and responsibility, without which you cannot earn the trust and respect of others. Therefore, I will not tolerate plagiarism, lying, cheating, or stealing in any form.

Honor Code: “I, _________________________, hereby pledge that I have read and understood the entire syllabus for the course, BME 5301/6301 BME for Global Health, and I will abide by the policies described above.

______________________________ date