Syllabus

ENVR 230: Issues in Environmental Health
Time of Class: 9:30 to 10:45 am Tues-Thur
Dr. L. M. Ball - lmball@unc.edu
Office Hours: 2:30 to 3:30 pm Mon, 11 to 12 Thur, or by appointment

Course Information

Learning Objectives

This course will contribute to development of the following ASPPH competencies:

I. Discipline-specific Competencies: Environmental Health Sciences
1. Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents
2. Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.
3. Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues
4. Specify current environmental risk assessment methods.
5. Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety.
6. Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures.
7. Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity.
8. Develop a testable model of environmental insult.

II. Interdisciplinary/Cross-cutting Competencies: Public Health Biology
1. Specify the role of the immune system in population health.
2. Describe how behavior alters human biology.
3. Identify the ethical, social and legal issues implied by public health biology.
4. Explain the biological and molecular basis of public health.
5. Explain the role of biology in the ecological model of population-based health.
6. Explain how genetics and genomics affect disease processes and public health policy and practice.
7. Articulate how biological, chemical and physical agents affect human health.
8. Apply biological principles to development and implementation of disease prevention, control, or management programs.
9. Apply evidence-based biological and molecular concepts to inform public health laws, policies, and regulations.
10. Integrate general biological and molecular concepts into public health.

III. And the Environmental Sciences and Engineering Major-Specific Competencies
1. Identify the key environmental factors that affect human health.
2. Understand the mechanistic basis for human health effects.
3. Evaluate the potential impact of emerging environmental threats, and formulate appropriate control measures.

Course Identifiers
Course Number: ENVR230
Section number: 001
Credit Hours: 3
Department: Environmental Sciences and Engineering (ENVR)
Term: Fall 2016
Times at which the class meets: 9:30 – 10:45 am Tuesday and Thursday

Instructor Identifiers
Instructor’s name: L.M. Ball
Instructor’s Office Location: Rosenau Hall 158, First Floor, South Corridor.
Office Hours: 2 to 3 pm Mon, 11 to 12 Thur, or by appointment
Phone number: 966-7306
Email: lmball@unc.edu
Web address: http://www.unc.edu/~lmball/

Target Audience
Undergraduate ENHS Majors. This course provides an introduction to the field of Environmental Health Science and to the ENHS program

Course Prerequisites
Completion of/enrollment in ENHS Science requirements:
BIOL 101/L, BIOL 201, BIOL202.
CHEM 101/L, 102/L, 261

Student Learning Outcomes or Competencies Addressed:
- Describe the relationship between public health and environmental sciences and engineering.
- Identify major issues in environmental sciences and engineering.
- Demonstrate broad knowledge in the core fields of public health.
- Demonstrate written and oral communication skills related to environmental sciences and engineering issues within a public health context.

Course Goals
The overall goal is to familiarize students with the major environmental health problems past and present, the remedies that have been developed to mitigate environmental health problems, and the principal agencies involved (at the global, national and local levels). Building on their preparation in fundamental chemistry and biology, students will be able to describe the major environmental agents that impact human health and analyze the measures in place to protect the population against adverse health effects. This course serves as preparation for ENVR430, Health Effects of Environmental Agents, in which students will gain understanding of the
mechanisms of interactions between environmental agents and living systems that will enable students to apply information derived from fundamental microbiology and toxicology studies to assessment of the health hazards associated with exposure to environmental agents, and to predicting the adverse health effects of novel or emerging agents.

**Course Requirements**
Students are required to attend and participate in classes.

**Dates**
- First day of class: Tuesday August 23rd
- In-class tests: Tuesday Oct 18th, Covering Aug 23rd to Oct 13th
  - Thursday Nov 17th, Covering Oct 25 to Nov 15
- Last day of class: Tuesday Dec 6th
- Final examination: Tuesday Dec 13th, 8 am

**Grades**
There will be 6 Grading Opportunities:
- 2 In-class Tests @ 20% covering defined material
- 1 Presentation @ 15%
- 1 Essay based on presentation @ 10%
- 1 Final Examination @ 30% - cumulative
- Attendance and Participation @ 5%

**Evaluation criteria for oral presentations.**
1. CONTENT (50%)  
   - Significance of issue is clear  
   - Assertions are backed by supporting data  
   - Complexity of subject matter is handled appropriately  
   - Sources are credited appropriately
2. PRESENTATION (35%)  
   - Structure of presentation is developed appropriately and smoothly  
   - The main points stand out  
   - Attention “hooks” are not excessively cheesy  
   - Graphics are clearly legible  
   - Video is not used excessively
3. DELIVERY (15%)  
   - Presenter makes eye contact with audience  
   - Pace and volume of presentation are appropriate  
   - Cues (flash cards, cheat sheets) are used discretely  
   - Interaction with audience (eg answering questions) is confident

**Grading scheme:**
The following grading scheme is used:
<table>
<thead>
<tr>
<th>%</th>
<th>Descriptor</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>95 - 100</td>
<td>Outstanding</td>
<td>A</td>
</tr>
<tr>
<td>90 - 94.9</td>
<td>Clearly excellent</td>
<td>A-</td>
</tr>
<tr>
<td>85 - 89.9</td>
<td>Very good</td>
<td>B+</td>
</tr>
<tr>
<td>80 - 84.9</td>
<td>Good</td>
<td>B</td>
</tr>
<tr>
<td>75 - 79.9</td>
<td>Satisfactory</td>
<td>B-</td>
</tr>
<tr>
<td>70 - 74.9</td>
<td>Adequate</td>
<td>C+</td>
</tr>
<tr>
<td>65 - 69.9</td>
<td>Marginally adequate</td>
<td>C</td>
</tr>
<tr>
<td>60 - 64.9</td>
<td>Weak</td>
<td>D</td>
</tr>
<tr>
<td>0 – 59.9</td>
<td>Insufficient</td>
<td>F</td>
</tr>
</tbody>
</table>

**Course Policies**

**Course Resources:**

**Textbook:** None. Material will be available on the Sakai website or through links to publicly-accessible websites.

**Honor Code:**
The Honor Code is in effect at all times. While students are encouraged to study together, and work together on their presentations, each grading opportunity is an individual

**Time Table** – see Class Schedule below.

**Syllabus Changes**
The management reserves the right to modify or rearrange course content in response to current events or emergencies. Any changes will be communicated to students by email and on the course Sakai site.

**Textbooks**
The reading material for this course consists mainly of journal articles and other materials available through on-line links. There is no assigned textbook.

**Attendance**
This class meets in person 9:30 to 10:45 am Tues-Thur. Attendance will not be formally tracked, although in such a relatively small class prolonged absence will be noticeable. I expect students to be responsible for anticipating predictable absences and making appropriate arrangements to cover course material and assignments.

See separate listing “Class Schedule” for class schedule, description of content, and reference material.