PBH302 Environmental Health
2 Credits / Fall 2017
Thursdays 10:00 AM to 11:50 AM in Rankin Room 204B

Instructor:
Course Facilitator: Laila Azam, PhD, MBA
E-mail: lazam@carrollu.edu
Phone: 262-951-3111; Cell: 414-737-3114
Office hour: Monday and Wednesday 12-2 pm; By appointment

Course Description:
This course is designed to provide students with an introduction to and overview of the key areas of environmental health. Using the perspectives of the population and community, the course will cover factors associated with the development of environmental health problems. Students will gain an understanding of the interaction of individuals and communities with the environment, the potential impact on health of environmental agents, and specific applications of concepts of environmental health. The course will consist of a series of class discussions and activities which will cover principles derived from core environmental health disciplines.

Pre-Requisites
PBH 101 and PBH 102

Text:

Objectives:
• Explain the theoretical and fundamental concept of environmental health including components of its broad policies and practices, through written and oral assignments which demonstrate the students' understanding.
• Examine the effects of environmental pollution within varying populations comparing and contrasting the community health effects among those populations.
• Develop a fundamental knowledge of environmental management principles, regulatory policies/practices along with emergency response and the Incident Command System through viewing and evaluating the application of such principles, policies and practices.
• Compare and contrast various environmental health treatment and prevention strategies through the analysis of environmental health peer reviewed articles which discuss the application of such strategies. e. Identify how environmental health issues are relevant to our daily routines and the health effects which may be associated with those environmental issues.

Instructional Methods:
Information will be presented in the classroom through lectures and discussions, online videos and training modules. Students will be actively part of the instruction process through the development and delivery of presentations on key environmental topics.
Assessment:
A total of 1050 points will be available to be earned throughout the semester. Points by assessment are listed below.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Points</th>
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</thead>
<tbody>
<tr>
<td>Attendance</td>
<td>120</td>
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<tr>
<td>Final Exam</td>
<td>150</td>
</tr>
<tr>
<td>Chapter Leader and Paper</td>
<td>200</td>
</tr>
<tr>
<td>Zoonotic and Vectorborne Disease Fact Sheet</td>
<td>100</td>
</tr>
<tr>
<td>Environmental Case Study #1*</td>
<td>200</td>
</tr>
<tr>
<td>Environmental Case Study #2*</td>
<td>200</td>
</tr>
<tr>
<td>Injury Prevention Fact Sheet</td>
<td>80</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>1050</strong></td>
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</tbody>
</table>

* Represents group projects

Grading System:
Grading for the course is as follows:

- 93-100% A
- 88-92% A/B
- 83-87% B
- 78-82% B/C
- 70-77% C
- 60-69% D
- Below 59% F

The point totals for the class will be used for the grading of this course.

Attendance (10 points/ 120 Total)
A quiz will be circulated at the end of class to document attendance. This will be an open book/ lectures notes quiz. Each student can earn 10 points per class period for attendance. 10 points for showing up and staying the entire period. 5 points for attending part of the period (arriving late, leaving early) and 0 points for missing the entire class.

Exam (150 points)
The final exam (150 points) will be administered online. Lecture notes and the book may be used during the exam, however the exam will be timed so a basic understanding of the materials will be needed in order to finish the exam in the time allotted. The exam will consist of multiple choice, fill-in and/or short answer questions and will cover material from class lectures and online activities.

Chapter Leader and Paper (200 points- 100 points chapter and 100 points paper)
Each student group will select a chapter they would like to become an “expert” on. Each student group will also submit a 6-8 page paper based on the in-class presentation.

Chapter Leader:
The reason for this project is to involve the class in an activity to help teach the MAJOR concepts contained within the selected chapter. The activity that the person presents should be interactive (creative game, trivia contest, role plays, etc.) The activity should increase the other class member’s understanding of the topic being discussed. Students should avoid a presentation that utilizes lecture as its main delivery method, though some lecture should be used to TEACH the main concepts prior to playing a game as the activity. DO NOT READ FROM A POWERPOINT HANDOUT.
Each chapter leader SHOULD incorporate a supplemental reference list. This reference list should further explain the concepts contained within the chapter. The references should not be the focus of the presentation, but rather an item contained within the presentation to enhance the overall understanding of the chapter concepts and information. Each chapter leader presentation MUST include ONE major open ended question to conclude the presentation. This question should encompass the entire chapter and get the students to challenge their assumptions about the contents of the chapter.

Examples:
- Creative “engaging” Activity
- Handout (for each student and instructor)
- Supplemental reference list (3 references minimum)- put on handout
- Good, thought provoking open-ended questions to conclude the presentation
- Good teaching methods (eye contact, clear voice, stand/sit where appropriate, introduction, body, conclusion, meaningful content, etc.)
- Enough materials (presentation, activity, game, video) to fill 45-50 minutes

Vectorborne Disease Fact Sheet (100 points)
This is an individual project. Create a 1 page fact sheet on one of the three diseases assigned to team or possibly one that we can select together. The fact sheet can be no more than the front and back of 1 page and needs to cover the following:
- What causes the disease and how is it spread
- What is the major signs and symptoms
- What are the possible outcomes (morbidity and mortality)
- What is the test to determine if you have the disease
- What steps can be taken to prevent getting the disease and/or spreading the disease to others
- Where can additional information be obtained

Include at least one graphic. All text must be in at least an 11 point font. Wherever possible use plain language.

Case Study Presentation (200 points each/ 400 points total)
Each student will be required to participate on two case study discussion. Students will work in teams and sign up for two of the potential topics provided. Discussions should last a minimum of 10 minutes but not more than 20 minutes and cover the following:
- Describe what the events leading up to the environmental disaster (provide the context)
- Describe the agent that caused the event (what is it, why is there a concern)
- Who was impacted by the disaster and how
  - Describe the people, places and environment impacted
  - What were the health impacts of the events
  - What were the economic impacts of the events
- What caused the disaster to occur
- What lessons were learned from the disaster
- What policies and practices were changed because of the disaster (if any)
- What can be done to prevent the disaster from reoccurring

Use of audio and video clips is permitted, however, no more than half of the presentation may be third party media content. Groups are encouraged to engage the class in the presentation. Presentations will be at the beginning of the assigned class period.

Group members will be asked to evaluate each member of their team.
Injury Prevention Fact Sheet (80 points)
This is an individual project. Each student should create a fact sheet to educate the public about injury prevention. You are free to pick any type of injury (safe swimming, seat belt use, texting and driving etc.). The fact sheet can be no more than the front and back of 1 page and needs to cover the following:
- How often does this type of injury occur and who is at most risk
- What are the possible outcomes (morbidity, mortality)
- What can be done to prevent the injury
- Where can additional information be obtained

Include at least one graphic. All text must be in at least an 11 point font. Wherever possible use plain language.

Attendance:
Attendance is expected for all in person class sessions. The course will be interactive and the educational experience of everyone is greatly diminished when students are absent and not actively engaged in the learning process. Ten points will be awarded for each in-person class period. Use of cell phones, text messaging or other electronic devices during class time may impact the student’s final course grade.

Late assignments:
Activities in our course are due at the time stated on the course syllabus. Late work will receive a 50% deduction in total points earned in most cases.

Right to Modify Course Content
The instructor and the University reserve the right to modify, amend, or change the syllabus (course requirements, grading policy, etc.) as the curriculum and/or program require(s).

Academic Integrity
The Carroll University Academic Integrity Policy is located in your student handbook (http://www.carrollu.edu/campuslife/pdfs/handbook.pdf). I encourage you to familiarize yourself with it. If a student violates this policy in any way, I reserve the right to impose a sanction of failure on the assignment/assessment or failure in the course. If you have questions about appropriate citations, please ask.

Accommodations for Disability
Students with documented disabilities who may need accommodations, or any student considering obtaining documentation should make an appointment with Ms. Martha Bledsoe, Director of Services for Students with Disabilities, no later than the first week of class. She can be reached by calling 262-524-7335 or contacting her via email at mbledsoe@carrollu.edu.
Week 1: Introduction to Environmental Health & Environmental Epidemiology

Date: September 7th

Classroom Lecture: Course overview. Review of lecture framework, objectives, and assessments. Introduction: The Environment at Risk; environmental problems and issues. Environmental Epidemiology

Online Lecture: Review environmental goals and objectives in Healthy People 2020 - https://www.healthypeople.gov/2020/topics-objectives

Readings: None

Assignment: Presentations / team sign up

Week 2: Built Environment

Date: September 14th

Classroom Lecture: Built Environment and Impact on Health

Online Lecture: Review the Building Healthy Places Network website - http://www.buildhealthyplaces.org/

Readings: Chapter 1: The Environment at Risk
Chapter 2: Environmental Epidemiology

Assignment: Presentations / team sign up

Week 3: Health Policy / Zoonotic and Vectorborne Diseases

Date: September 21st

Classroom Lecture: Health Policy
Student Group 1: Zoonotic and Vectorborne Diseases (Alli and Raelee)

Online Lecture: None

Readings: Chapter 4: Environmental Policy and Regulation
Chapter 5: Zoonotic and Vectorborne Diseases

Assignment: Zoonotic and Vectorborne Disease Fact Sheet (due by 10/5)
Group Presentations: Zoonotic and Vectorborne Disease Presentation
# Week 4: Vectorborne Disease/Toxicology

<table>
<thead>
<tr>
<th>Date:</th>
<th>September 28&lt;sup&gt;th&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>Classroom Lecture:</td>
<td>Student 3: Toxicology (Assigned) Kaitlyn and Elizamar Zoonotic and Vectorborne Disease – Continued Fact Sheet Environmental Case Study Overview</td>
</tr>
<tr>
<td>Online Lecture:</td>
<td>None</td>
</tr>
<tr>
<td>Readings:</td>
<td>Chapter 3: Toxicology</td>
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<tr>
<td>Assignment:</td>
<td>Case Study Sign Up</td>
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# Week 5: Case Study Preparation

<table>
<thead>
<tr>
<th>Date:</th>
<th>October 5&lt;sup&gt;th&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>Classroom Lecture:</td>
<td>None, class time is being provided for teams to meet to work on their case studies.</td>
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<tr>
<td>Online Lecture:</td>
<td>None</td>
</tr>
<tr>
<td>Readings:</td>
<td>Specific to individual case study</td>
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<tr>
<td>Assignment:</td>
<td>Environmental Health Case Studies</td>
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# Week 6: Water Quality

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<thead>
<tr>
<th>Date:</th>
<th>October 12&lt;sup&gt;th&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Lecture:</td>
<td>Student Group 3: Water Quality</td>
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<tr>
<td>Online Lecture:</td>
<td>None</td>
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<tr>
<td>Assignment:</td>
<td>None</td>
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</tbody>
</table>
# Week 7: Toxic Metals, Pesticides, and Organic Chemicals

**Date:** October 19<sup>th</sup>  
**Classroom Lecture:**  
- Case Study #1: Lead in Water, The Story of Flint and Other US Cities  
- Case Study #2: Bhopal and Seveso  
- Case Study #3: Cryptosporidium: Milwaukee and Others  
- Case Study #4: Oil Everywhere: Exxon Valdiz and Deepwater Horizon  
**Online Lecture:**  
- View lecture 1 “The Past, Present, and Future of Childhood Lead Prevention” of the online course series Health Education Lead Poisoning (HELP) available at [http://www.feact.org/training/help.html](http://www.feact.org/training/help.html) (approximately 38 minutes)  
- Review the CDC Lead Prevention website at [http://www.cdc.gov/nceh/lead/default.htm](http://www.cdc.gov/nceh/lead/default.htm)  
**Readings:**  
- Chapter 6  
- Chapter 7  
**Assignment:** None

# Week 8: Ionizing and Non-Ionizing Radiation

**Date:** October 26th  
**Classroom Lecture:**  
- Case Study #5: Tokaimura, Fukushima, and Lucens  
- Case Study #6: Chernobyl, Three Mile Island and Mayak  
**Online Lecture:** None  
**Readings:**  
- Chapter 8: Ionizing and Nonionizing Radiation  
**Assignment:** None

# Week 9: Air Quality

**Date:** November 2<sup>nd</sup>  
**Classroom Lecture:**  
- Case Study #7: In the Mist: Great London Fog, Denora Smog and LA 1973  
- Case Study #8: Extreme Weather: Hurricanes Katrina and Rita and Superstorm Sandy  
**Online Lecture:** APHA 4 part webinar series on Climate and Health: [http://www.apha.org/events-and-meetings/webinars/climate-webinars/climate-changes-health](http://www.apha.org/events-and-meetings/webinars/climate-webinars/climate-changes-health)  
**Readings:**  
### Week 10: Food Safety – Part I

**Date:** November 9<sup>th</sup>  
**Classroom Lecture:** Case Study #9: Listeria: Cantaloupe from Jensen Farms and Cold Cuts from Maple Leaf Foods  
Case Study #10: E.coli: Jack in a Box, US, Dole Spinach, US and Fenugreek Sprouts, Germany  
**Online Lecture:** None  
**Readings:** Food Safety – Environmental and Epidemiologic Response  
**Assignment** Environmental Assessment of Foodborne Illness Outbreaks Certificate

### Week 11: Solid and Liquid Wastes

**Date:** November 16<sup>th</sup>  
**Classroom Lecture:** Case Study #11: Love Canal and Other Superfund Sites  
Case Study #12: Great Pacific and Great Atlantic Garbage Patches  
**Online Lecture:** View the 26 minute YouTube video "Wastewater Treatment Plant Tour - Flush To Finish" at [https://www.youtube.com/watch?v=pRaptzcp9G4](https://www.youtube.com/watch?v=pRaptzcp9G4)  
**Readings:** Chapter 12: Solid and Liquid Waste  
**Assignment** None

### Week 12: Thanksgiving

**Date:** November 23<sup>rd</sup>  
**Classroom Lecture:** None  
**Online Lecture:** None  
**Readings:** None  
**Assignment** None
### Week 13: Food Safety – Part II

<table>
<thead>
<tr>
<th>Date:</th>
<th>November 30th</th>
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</thead>
<tbody>
<tr>
<td>Classroom Lecture:</td>
<td>None</td>
</tr>
</tbody>
</table>
| Field Experience / Online Lecture: | Option 1 – Inspection Field Experience  
| Readings: | None |
| Assignment | Environmental Assessment of Foodborne Illness Outbreaks Certificate |

### Week 14: Occupational Health / Safety

<table>
<thead>
<tr>
<th>Date:</th>
<th>December 7th</th>
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</table>
| Classroom Lecture: | Case Study #13: Fires: Triangle Shirtwaist Company and the Dhaka Tasreen Fashion Fire  
Case Study #14: Mines - Hawks Nest/Gauley Bridge West Virginia, Monongah Mining Disaster, West Virginia and the Honkeiko Colliery Mining Disaster, Benxi China  
Case Study #15: Swimming Pool/Hot Tub Safety, include Virginia Graeme Baker  
Case Study #16: Auto safety: Seat Belts, Air Bags, and Child Safety Seats, include “Unsafe at Any Speed” |
| Online Lecture: | None |
| Readings: | Chapter 13 |
| Assignment | None |

### Week 15 Unintentional Injuries and Violence

<table>
<thead>
<tr>
<th>Date:</th>
<th>December 14th</th>
</tr>
</thead>
</table>
| Classroom Lecture: | Unintentional Injuries  
Violence as Public Health Issue  
Final Exam Review |
| Online Lecture: | None |
| Readings: | Chapter 14  
Public Health Approach to Violence Prevention available at [http://www.cdc.gov/ViolencePrevention/overview/publichealthapproach.html](http://www.cdc.gov/ViolencePrevention/overview/publichealthapproach.html) |
Assignment

Injury Prevention Fact Sheet

FINAL EXAM MONDAY DECEMBER 18TH AT 8:00 AM