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PUBH 3136A - Principles of Environmental Health

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GEORGIA SOUTHERN UNIVERSITY
JIANN-PING HSU COLLEGE OF PUBLIC HEALTH

PUBH 3136A – PRINCIPLES OF ENVIRONMENTAL HEALTH
SPRING 2018

<u>INSTRUCTOR:</u>	EVANS AFRIYIE-GYAWU, PHD., MPH.
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<u>OFFICE HOURS:</u>	WEDNESDAY 11:00 AM - 4:00 PM ALSO BY APPOINTMENT
<u>CLASS MEETING:</u>	TUESDAYS & THURSDAYS 9:30 AM – 10:45 AM INFORMATION TECHNOLOGY BLDG., ROOM 1005

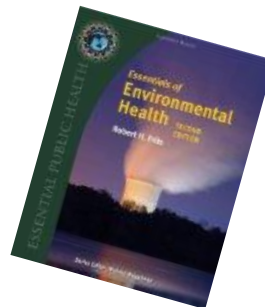
Course schedules can be found at: <http://students.georgiasouthern.edu/registrar/>

Catalog Description: This course examines health issues, scientific understanding of causes, and possible future approaches to control the major environmental health problems in industrialized and developing countries. Topics include how the body reacts to environmental pollutants; physical, chemical, and biological agents of environmental contamination; vectors for dissemination (air, water, soil); solid and hazardous waste; susceptible populations; biomarkers and risk analysis; the scientific basis for policy decisions; and emerging global environmental health problems.

Required Textbook: Friis, Robert H. (2012). *Essentials of Environmental Health – 2nd Edition*. Sudbury, MA: Jones and Bartlett Publishers.

ISBN-13: 978-1284-02633-7

ISBN-10: 0-7637-7890-7



BSPH Core Student Learning Outcomes (CORE):

1. Demonstrate proficiency and effectiveness in the communication of core public health principles and practices, both oral and written.
2. Demonstrate proficiency in the integration of the core public health disciplines (Biostatistics, Epidemiology, Environmental Health, Health Policy/Management, and Social/Behavioral Science) in practice and research.
3. Demonstrate proficiency in problem solving, critical thinking, and public health leadership.

BSPH Competencies:

1. Identify and assess public health problems to develop appropriate public health education programs based on sound theoretical foundations of health behavior.
2. Design and implement and evaluate public health educational programs for identified health problems for at-risk populations and communities.
3. Demonstrate argumentation, analysis, and synthesis skills writing through the development of comprehensive health promotion program plans and materials.
4. Communicate and advocate for health and health education.

PUBH 3136 Performance-Based Learning Objectives Linked to Course Activities (Note: Activities Described in Next Section):

1. Students will demonstrate competence by describing and applying the basic terminology and definitions of environmental health (*Activity 1*).
2. Students will defend or support an argument made by a researcher on select environmental health topics (*Activity 2*).
3. Students will demonstrate competence by explaining the fundamental concepts of environmental health including environmental epidemiology and environmental toxicology, and their broad policies, practices, and application (*Activities 1, 2 & 3*).
4. Students will demonstrate competence by examining the effects of environmental pollution affecting different populations, comparing and contrasting environmental health treatment and prevention strategies and community health outcomes (*Activity 2, 3 & 5*).
5. Students will demonstrate the ability to communicate environmental health concepts and associated issues through writing for lay and professional audiences (*Activities 4 & 5*).
6. Students will demonstrate the ability to communicate environmental health concepts and associated issues through presentations to lay and professional audiences (*Activity 6*).

Assessment of Student Learning

Activity 1: Use course lectures and class discussions to explain the basic terminology and definitions of environmental health, including but not limited to environmental epidemiology, environmental toxicology, health hazard, dose-response, exposure, risk assessment, environmental agents, zoonoses, ionizing and nonionizing radiation, criteria air pollutants, food-borne pathogens, and occupational health. Competence in basic terminology will be evaluated using: 1) four quizzes, and 2) three exams including final exam.

Activity 2: Use course lectures, class discussions and case studies to explain basic concepts of environmental health, effects of various environmental hazards on human health, the interaction of individuals and communities with the environment, and existing policies and practices to prevent and control negative health effects of the environment on different communities including occupational settings. Competence in the ability to understand and apply basic concepts of environmental health and environmental policy and management principles will be evaluated using three activities: 1) four quizzes, 2) three exams including the final exam, 3) discussions online.

Activity 3: Use course lectures and class discussions to explain basic applications of environmental health principles and concepts, and their utilization in the context of contemporary environmental health treatment and prevention strategies. Competence in the ability to analyze basic principles and concepts of environmental health and their integration with treatment and prevention strategies will be demonstrated through 1) the analysis of peer-reviewed articles pertinent to environmental health 2) current events presentation, and 3) “*The Environment and Your Health*” project.

Activity 4: Competence in written communications for lay audiences will be evaluated using “*The Environment and Your Health*” project.

Activity 5: Competence in written communication for a professional audience will be evaluated using 1) a comprehensive review of selected peer-reviewed articles related to environmental health, and 2) “*The Environment and Your Health*” project.

Activity 6: Competence in oral presentation will be evaluated using the preparation and delivery of 1) a PowerPoint presentation of selected *Current Events* pertinent to environmental health issues, and 2) “*The Environment and Your Health*” project. All current events must be related to the topic of the week.

Instructional Methods:

While Dr. Evans is the instructor of record, guest lectures will be given by other Public Health faculty or subject matter experts. All course material will be posted on Folio. **Students are responsible for downloading the lecture slides and reading materials from Folio.**

Information will be presented in the classroom, through the required readings, and through written and oral exercises. Class meetings will be a combination of lecture, class discussion, and group activities. The instructor will present and discuss the topics related to the assigned readings; **however, if any particular section of the reading assignment is not covered during the lecture and class discussion, you are responsible for acquiring the material.**

Furthermore, students are responsible for **ALL supplementary information** discussed during the scheduled class periods. You are encouraged to ask questions at the end of the lecture to address various aspects of the topic discussed that may be unclear to you.

Table 1. Grading:

	Topics covered	Points
Quiz 1	Chapters 1, 2 & 3	10
Quiz 2	Chapters 4,5 & 6	10
Quiz 3	Chapters 7,8 & 9	10
Quiz 4	Chapters 10, 11 & 12	10
Quiz 5	Chapters 13 & 14	10
Exam 1	Chapters 1-6	100
Exam 2	Chapters 7-12	100
Final Exam	Comprehensive	120
The Environment & Your Health Project	Groups will give presentations and submit a booklet (Final Report)	40
Discussions	Post comments & respond to two (2)	20
• Discussion 1	• DDT	
• Discussion 2	• Climate change	
• Discussion 3	• Water Fluoridation	
• Discussion 4	• GMO's	
EH Current Events	Each group will present to the class	20
Participation	Attendance & In-Class Participation	10
Total		460

Point Scale	Percent	Grade
414 – 460	90 - 100%	A
368 – 413.9	80 – 89.9%	B
322 – 367.9	70 – 79.9%	C
276 – 321.9	60 – 69.9%	D
< 276	< 59.9%	F

All points listed above will be added to calculate your final grade. All grades are final; no assignments will be re-graded. Grading on a curve will not be used.

PLEASE NOTE: It is at the Instructor's discretion to round-up your final grade. The policy is as follows: If you have more than 3 unexcused absences OR do not actively participate in class discussions/activities **YOUR GRADE WILL NOT BE ROUNDED UP**. For example, if you accumulated 79.0-79.9% of total points and you had **MORE**

THAN 3 unexcused absences OR did not actively participate in class discussion/activities, your final grade in this class will be a “C”.

*****ATTENDANCE WILL BE TAKEN DURING EVERY CLASS MEETING***
ASSIGNMENTS AND ACTIVITIES:**

1. Scheduled Quizzes (50 points total).

Five quizzes will be given over the course of the semester. These quizzes will account for 10 points each. Quizzes will be online via Folio; and the due dates/times are given in Table 2.

2. Exams (200 points total) – Excluding the final exam.

There will be three exams, each worth 100 points. These exams may be any combination of true/false, multiple choice, matching, short answer problems, calculations & discussions. These exams will be online and available on Folio. Exams will be due on the specified day and time indicated in Table 2.

3. Final Exam (120 points total).

According to the GSU Exam Schedule, the final exam will be administered on Tuesday, **May 1, 2018 from 10:00 AM – 12:00 PM. You will be notified if the time is changed.** This exam will be cumulative. The test may be any combination of true/false, multiple choice, matching short answer, problem calculations & discussion. No early/late finals will be given. Students who do not take the Final Exam during this university mandated schedule will be given a “0”. **If this time conflicts with your schedule, please consider dropping this course.**

4. Online Discussions (20 points).

There will be a total of four discussions related to the lectures throughout the semester. While students may post all discussions online via Folio, you are responsible for **only two (2)** of these discussion items. You are expected to actively participate in the discussions to receive the full credit.

5. The Environment and Your Health Project (40 points total).

It is vitally important for us to work together and change the hearts and minds of diverse groups of people and cultures in many parts of the world, **through education**, with respect to how they view and/or treat the environment. As a student in this PUBH 3136 class, you and I can make a difference so it is absolutely essential for us to work towards this objective – **which is the rationale behind this assignment.** You will be assigned to different **groups** for this project. There will be 15 groups in total to work through this assignment. Group members will conduct their research and develop an **educational tool or program** that may be used in schools from Grade 3 through Sophomore (College) on environmental issues that can affect their lives. The educational levels considered in this assignment are as follows:

- I. Grades 3 – 5
- II. Grads 6 – 8
- III. Grades 9 – 10

- IV. Grades 11 – 12
- V. Freshman/Sophomore

There will be 3 groups working on each educational level with respect to environmental issues - **developed countries** (*first group*), **developing countries** (*second group*) and **comparison between developed and developing countries** (*third group*). For instance, groups A, B & C work on *Grades 3-5* educational project. Group “A” will work on ***“The Environment and Your Health” in Developed Countries***, Group B works on ***“The Environment and Your Health” in Developing Countries***, and Group C works on ***“The Environment and Your Health” – Comparing Developed and Developing Countries***.

This assignment is divided into two parts – **Part I** is the ***“The Environment and Your Health”*** Presentation and **Part II** is the ***“The Environment and Your Health”*** Final Report (Booklet). **Due dates pertinent to this assignment are specified in Table 2. Part I is worth 15 points and Part II is worth 25 points!** **ALL FILES SUBMITTED ELECTRONICALLY MUST HAVE THE GROUP NUMBER AND ASSIGNMENT, e.g., Group 10_The Environment & Your Health.**

Students from each group will have the opportunity to verbally critique (*questions, comments and suggestions to improve the quality of the educational program*) the work of other group members. **PLEASE CRITIQUE THE WORK OF YOUR PEERS HONESTLY; HOWEVER, BE RESPECTFUL TO THEM!!!**

Please see “The Environment and Your Health” Project Handout for more details of this assignment.

6. Current Event(s) Presentation (20 points).

Each student will be assigned to a group early in the semester. Each group will be required to present to the class a short summary of current event(s) highlighting an environmental health issue discussed in the media or of a local concern. This presentation will occur in the first 15 – 20 min of every class period (excluding test and exam days). The students will need to identify an environmental health or ecological issue that is currently occurring in the world, country, state, county or town. **The topic of the presentation should relate to the chapter(s) that will be discussed during that week.** The students in each group will need to present this information and link it to environmental health. This connection should be made through a thought provoking **discussion question** that the student has prepared for the class. Each group will have 5 min for the presentation and 2 min for Q & A's. The PowerPoint presentation of the current event and associated documents must be submitted to the designated Dropbox on Folio by 12:00 pm the day before the presentation. **ALL FILES SUBMITTED ELECTRONICALLY MUST HAVE THE GROUP NUMBER AND ASSIGNMENT, e.g., Group 10_ Current Event.** The group **MUST PRESENT** the current event to the class in order to receive the points. **The key points highlighted during these current event presentations and discussions may be included in the exams.**

Current Event Presentation Guidelines:

Please use the following points to guide your in-class discussion on the Current Environmental Health (EH) or related event. **All presentations should be in a PowerPoint format.**

- a. Brief description of the EH event or issue
- b. Explanation of how the issue occurs and the populations that are (or may be) mostly affected by the potential health effects of the issue
- c. Importance of the issue in terms of EH
- d. Relevance of the issue in the context of Public Health
- e. How the issue do (or will) affect you personally, your community/GA/US/World
- f. Thought provoking question(s) for the class

7. Class Participation: Attendance (10 points)

Attendance will be taken at each class. Points to be allotted for attendance will be determined at the end of the semester by the instructor.

Your participation in this class is very important. To demonstrate your participation, you are expected to ask relevant questions, answer questions, make comments that relate to material in the textbook, discussion topic or share relevant experiences. **If you are absent on these days, you will receive no participation points.** Your contributions will be very valuable if/when you are responding to something another student says (including answering a question asked by a student) or constructively disagreeing with something in the book or said in class by the Instructor or your classmate. Students are expected to actively participate in class and online discussion of the topics listed on the syllabus, basing their participation on the assigned readings and/or media. Be CONSTRUCTIVE in your critiques, RESPECT others' opinions and PROFESSIONALLY respond to criticisms. The Instructor may call you to participate, but your volunteer participation is preferred. **Participation in class sessions will be used for rounding grades when necessary.**

Attendance:

The door to the classroom will be closed **at 9:35 am** each day. If you arrive after that, you will not be allowed to enter the room. The disturbance to the course is too great. If you disturb the class by knocking on the door and trying to enter the classroom, **5 points will be taken from** your final grade. Do not drop your personal items in the class and then leave the classroom, you will not be allowed to re-enter to retrieve your personal items until after the class is completed at 10:45 am. **Attendance will be taken every day of class** and will count toward your final grade. **If you are absent on days when there are guest speakers, you will have 5 points deducted.**

You are responsible for any missed content, announcements, due dates, homework assignments, date changes, etc. when you miss a class. Please, notify the Instructor and provide justification if you will be late to the class.

COURSE POLICIES

1. No make-up TEST or QUIZZES are given except for **a university excused absence with full documentation**. If you miss a test, and you have a university excused absence with full documentation, you have one week to make the exam up. All make-up exams will be a combination of essay questions and computations. If it is not made up **within one week**, you will receive “0” points for the exam. **You have 24 hours** after a test is taken by the class to contact the Instructor via email to schedule your make-up exam or a “0” will be assigned to the test.
2. Exams and quizzes are the property of the Instructor, any exams or quizzes removed physically from the classroom or electronically via digital means by the student will result in the score of a “0” for that exam and/ or quiz, and an “F” for the entire course. All exams will be a combination of multiple choice, true/false, fill-in-the-blank, matching short answers, problem calculations and essay questions.
3. The final exam is mandatory and may be proctored during finals week. If you have special needs and require special assistance, please contact Georgia Southern University Student Resource Disability Center. **If this scheduled time is a problem, please consider dropping this course.**
4. All assignments must be submitted a corresponding dropbox.
5. All assignments must be turned in through Folio (mostly to the designated Dropbox) unless otherwise directed. Assignments must be submitted by the designated time. Late assignments (**anything that’s a second past the designated time**) will be given “0” points. Assignments should not be given to the Office secretary, slipped under my office door, left in my mailbox, etc.

Late assignments **will not be** accepted. Most assignments will be submitted through Folio (a day and time will be posted). For assignments due in Folio, they are due according to the times posted in Folio. All files submitted must be in .doc or .docx formats. Any other type of submissions will not be opened and receive automatic “0” points. Assignments submitted via email will not be accepted for review and/or grading; respectively, a student submitting his/her assignment via e-mail will receive an automatic “0” points.

6. **Extra Credit.** No individual extra credit is allowed or will be given in this course. Students are expected to utilize their best efforts on all assignments, graded examinations, and intellectual challenges (papers, lab reports, debates, presentations) and so forth. Again, any extra credit opportunities will be presented to the entire class; *however, there is no guarantee that extra credit opportunities will be offered for any particular assignment or graded exam.*
7. Please consult the STUDENT CONDUCT CODE for course policy concerning issues related to academic dishonesty. Anyone caught violating any of these regulations will be immediately reported to GSU's Judicial Board, and be assigned an “F” for the course. **DO NOT PLAGIARIZE, YOU WILL BE CAUGHT!** All written assignments will be checked for plagiarism using “Turnitin” function in

- Folio, any plagiarism report higher than 25% will have a minimum of 20 points deducted from the assignment. The deductions will increase as the plagiarism percentage increases. Anything above 40% will not be graded and receive a grade of "0".
8. Please beware of the last day to withdraw from class without academic penalty. Students who stop attending class without officially withdrawing from the class will receive a final grade of "F".
 9. Samples of your work may or may not be reproduced for research purposes and/or inclusion in the Instructor's teaching portfolio. You have a right to review anything selected for use, and subsequently ask for its removal.
 10. Copyright of this syllabus, lectures and other course materials produced by the instructor is held solely by the instructor. This copyright covers student notes, summaries, or any other copies that exactly reproduce the copyrighted material. Lectures and course materials are made available to students for personal use only and may not be distributed or reproduced for commercial purposes without the express, written permission of the instructor. Students are permitted to share notes on an individual, non-commercial basis for personal use only. Violations of copyright may result in course sanctions, including charges under the Student Conduct Code.
 11. If you are receiving services from the Student Disability Resource Center (SDRC), please notify the Instructor as soon as possible and provide an accommodation letter.
 12. This course lectures and other materials are on Folio. You are responsible for downloading notes **BEFORE** you come into class. Please regularly check Folio for any messages that may be posted pertinent to updates, clarification of instructions and assignments.
 13. If you need to contact the Instructor, please use Folio email address of the instructor. The response will be provided within 48 hours, unless there is an emergency. No responses should be expected after **6:00 PM** on Friday, weekends and holidays.
 14. **Cell phone policy: Cell phones are expected to be OFF (or on silent mode) and in your purse or book bag** at all times during the class period. In case of a possible emergency or unforeseen problem (event), please notify me prior to class.
 15. **During class activities you are allowed to use electronic devices such as tablets, computers and phones to research the information. After the activity is completed, all cell phones should be put away.**
 16. **Eating is allowed during the class meetings, but should not become a distraction i.e. no loud bags, wrappers, etc. Instructor reserves the right to suspend this privilege.**

FOR BSPH STUDENTS

BSPH students are expected to graduate the program with competent *professional skills*. Professional skills and dispositions are also expected while completing the internship experience. As a student in this course, you are expected to exhibit professionalism at all times. The following is a list of skills BSPH majors are expected to demonstrate:

1. **Written communication skills:** Student uses appropriate professional title, grammar, structure, punctuation, spelling, tone, etc.
 - a. Emails and other communications: Student should use appropriate professional title, grammar, structure, punctuation, tone, etc. To write a professional email, please include the following:
 - i. Salutation
 - ii. Your identity
 - iii. What the contact is in reference to (i.e., PUBH3136)
 - iv. What you would like the instructor to do
 - v. At the bottom of the email, type out your name
2. **Oral and non-verbal communication skills:**
 - a. In interpersonal communication, students are expected to maintain appropriate tone, language, attitude, interpersonal space, etc.
 - b. In public speaking, students are expected to display appropriate volume, speed, enunciation, eye contact, structure, etc.
3. **Organization:** Student keeps track of assignments and materials, and is prepared for presentations, etc.
4. **Initiative:** Student can begin tasks and work independently, initiate tasks/projects, etc.
5. **Reliability:** Student is punctual, completes assignments, meets deadlines, and is prepared for class etc.
6. **Collegiality:** Student exhibits appropriate, positive, and helpful interactions with others
7. **Collaboration:** Student collaborates with others on tasks or projects, accepts others' suggestions and criticisms, participates in and provides constructive inputs to discussion and debate, etc.
8. **Judgment:** Student considers options and their implications when making decisions, and does not act impulsively, etc.
9. **Respect:** Student respects confidentiality, treats others with respect, etc.
10. **Self-Presentation:** Student is well groomed, dresses appropriately, well rested, etc.
11. **Interpersonal interactions:** Students will practice civility when interacting with faculty and fellow students; in cases of disagreement or conflict, students will make every effort to resolve such matters in a respectful manner with a goal towards mutual resolution.

****If a student fails to comply with the list of professional skills, the faculty will provide the student a warning for the first offense. If student fails to improve their behavior or make progress in the relevant skills, the faculty member will immediately report the student to the University Student Conduct Board for violating the Student Code of Conduct.**

Table 2. Overview of the Content to be covered during the Semester:

Week	Topic	Readings	Assignment
1 (1/9/18) (1/11/18)	Introduction: The Environment at Risk	Chapters 1	Review Definitions/Abbreviations
2 (1/16/18) (1/18/18)	Environmental Epidemiology	Chapter 2	
3 (1/23/18) (1/25/18)	Environmental Policy/Regulation	Chapter 4	Quiz 1 (Chapters 1, 2 & 3) Current Event Presentations (Groups 1)
4 (1/30/18) (2/1/18)	Environmental Toxicology	Chapter 3	Current Event Presentations (Groups 2 & 3)
5 (2/6/18) (2/8/18)	Zoonotic and Vector-Borne Diseases	Chapter 5	Current Event Presentations (Groups 4 & 5)
6 (2/13/18) (2/15/18)	Toxic Metals & Elements	Chapter 6	Current Event Presentation (Group 6) <i>The Environment and Your Health Project Presentations (Groups 13)</i> Quiz 2 (Chapters 4, 5 & 6) EXAM 1- DUE (2/18/18 @ 11: 59 PM)
7 (2/20/18) (2/22/18)	Pesticides and Other Organic Chemicals	Chapter 7	<i>The Environment and Your Health Project Presentations (Groups 14)</i> Discussion 1 Current Event Presentations (Groups 7 & 8)
8 (2/27/18) (3/1/18)	Ionizing and Nonionizing Radiation	Chapter 8	Current Event Presentations (Groups 9) <i>The Environment and Your Health Project Presentations (Groups 11 & 15)</i>
9 (3/6/18) (3/8/18)	Water Quality	Chapter 9	<i>The Environment and Your Health Project Presentations (Groups 7 & 8)</i> Quiz 3 (Chapters 7, 8 & 9) Current Event Presentation (Group 10)

10 (3/13/18) (3/15/18)	SPRING BREAK!!!		
11 (3/20/18) (3/22/18)	Air Quality	Chapter 10	<i>The Environment and Your Health</i> Project Presentations (Groups 2 & 12) Current Event Presentation (Group 11)
12 (3/27/18) (3/29/18)	Food Safety	Chapter 11	<i>The Environment and Your Health</i> Project Presentations (Groups 1) Current Event Presentation (Group 12 & 13) Discussion 2
13 (4/3/18) (4/5/18)	Solid and Liquid Wastes	Chapter 12	Quiz 4 (Chapters 10, 11 & 12) <i>The Environment and Your Health</i> Project Presentations (Groups 3 & 4) Current Event Presentation (Group 14) EXAM 2- DUE (4/8/18 @ 11: 59 PM)
14 (4/10/18) (4/12/18)	Occupational Health	Chapter 13	Current Event Presentation (Group 15) <i>The Environment and Your Health</i> Project Presentations for Groups 5 & 6
15 (4/17/18) (4/19/18)	Unintentional injuries and Deaths	Chapter 14	Quiz 5 (Chapters 13 & 14) <i>The Environment and Your Health</i> Project Presentations for Groups 9 & 10
16 (4/24/18) (4/26/18)	Final Exam Review	Review Notes	Final Reports for “ <i>The Environment and Your Health</i> ” Project – DUE (All Groups) Stop by my office, if necessary!
17 (5/1/18)	FINAL EXAM (IN-CLASS) – 10:00 AM – 12:00 PM		

One Final Note:

The contents of this syllabus are as complete and accurate as possible. The instructor reserves the right to make any changes necessary to the syllabus and course material. The instructor will make every effort to inform students of changes as they occur. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course.