

Master of Public Health Program, University of Texas El Paso
Course Syllabus

Environmental Health
PUBH-5304; CRN: 28733
Spring 2021

Course Information

Level & credits: Graduate level, 3- credit hours
Class location, day, time: Online (UTEP-Blackboard Learning Platform)
Instructor: Dr. Gabriel Ibarra-Mejia
Office Hours: Monday, 10am-12pm (online)
Office location: Health Sciences & Nursing Building 409
Email: gabmejia@utep.edu

Course description

This core course examines how current environmental factors seriously impact human health. The course combines public health and systems thinking perspectives to understand the associations among environmental risk factors, human health, and environmental health disparities. Students will use new knowledge to consider risk assessment and management and how to influence decision making and policy development. Students will be required to apply systems knowledge from a global perspective and design interventions to mitigate common regional and global communities' environmental risk factors.

Course requirements

Course pre-requisites: HSCI 3306, or equivalent undergraduate environmental health course w/C or better

Required textbook: NONE.

Required software: Microsoft Office (Word, Excel, and PowerPoint); EndNote or RefWorks. *Access is available for free to UTEP students under MY.APPS.UTEP.EDU

Supplemental Reading: a) Risk Assessment for Environmental Health (Paperback); Mark G. Robson (Editor), William A. Toscano (Editor); Jossey-Bass; 1 edition (February 20, 2007); ISBN: 978-1-118-42406-3

b) Essentials Of Environmental Health (Essential Public Health) 2nd Edition, by: Robert H. Friis; Published by: Jones & Bartlett; ISBN-10: 1284026337; ISBN-13: 978-1284026337
Supplemental Reading

Additional resources:

Health Science Librarian:

- Harvey Castellano hcastell@utep.edu
- http://libguides.utep.edu/prf.php?account_id=81079
- http://libguides.utep.edu/public_health

Technology Support Center (TSC)

- Workshops: tsc.utep.edu/workshops or <https://admin.utep.edu/Default.aspx?tabid=74112>
- Report issues to: <https://servicedesk.utep.edu> or Frank Poblano fpoblano@utep.edu

APA 6th Edition

- Publication Manual of the American Psychological Association, Sixth Edition, By American Psychological Association, ISBN: 978-1-4338-0561-5, <http://www.apa.org/pubs/books/4200066.aspx>

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Examples of peer-reviewed epidemiology, public health, and other peer-reviewed health journals: *American Journal of Epidemiology*, *Annals of Epidemiology*, *Epidemiology*, *Epidemiologic Reviews*, *European Journal of Epidemiology*, *International Journal of Epidemiology*, *Journal of Clinical Epidemiology*, *Journal of Epidemiology and Community Health*, *American Journal of Public Health*, *Nutrition Reviews*, *American Journal of Clinical Nutrition*, *Salud Pública de México*.

NOTE: Wikipedia or other similar websites do not serve as a valid reference

Research Resources:

1. UTEP Health Science Library: http://libguides.utep.edu/public_health
2. PubMed for biomedical journal articles <http://www.ncbi.nlm.nih.gov/sites/entrez>
3. SciELO Public Health: health science articles in Ibero-American countries <http://www.scielosp.org/>
4. Google Scholar: scholarly literature and pdfs <http://scholar.google.com/>
5. U.S.-Mexico Border Virtual Health Library from PAHO <http://infofrontera.homolog.bvsalud.org/php/index.php?lang=en>
6. Cumulative Index to Nursing and Allied Health (CINAHL EBSCO) <http://www.ebscohost.com/academic/the-cinahl-database>

Agencies:

1. Agency for Toxic Substances and Disease Registry <https://www.atsdr.cdc.gov/>
2. Centers for Disease Control and Prevention <https://www.cdc.gov/>
3. Consumer Product Safety Commission <https://www.cpsc.gov/>
4. Department of Energy <https://www.energy.gov/>
5. Department of Health and Human Services <https://www.hhs.gov/>
6. Environmental Protection Agency <https://www.epa.gov/>
7. Food and Drug Administration <https://www.fda.gov/>
8. Health Resources and Services Administration <https://www.hrsa.gov/>

Course format

1. Online lecture format with instructor-led discussions, individual student-led discussions, participation, and presentations; each session will be 3 hours with a 15-minute break; classes will be divided equally between lecturing, discussions, presentations, and group work.
2. Technology-enhanced through Blackboard Learn® learning platform (10%)
3. Field trips (Dependent on health restrictions, availability, time, and weather conditions)

Competencies

The UTEP MPH program is nationally accredited by the Council on Education for Public Health (CEPH). The CEPH has defined 22 foundational competencies required for attaining the MPH degree; in addition, our MPH program has defined 5 concentration competencies that reflect the unique training you will receive in our program in Hispanic and Border Health. During orientation, you were provided with a complete list of the foundational and concentration competencies. Each of your courses will address different competencies. The competencies that will be addressed in this course are listed below, and during the first class session, your professor will review these with you. Knowledge of specific competencies and the ability to apply them will be evaluated throughout the course.

Evidence-based Approaches to Public Health

1. Apply epidemiological methods to the breadth of settings and situations in public health practice

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2. Select quantitative and qualitative data collection methods appropriate for a given public health context
 3. Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming, and software, as appropriate
 4. Interpret results of data analysis for public health research, policy, or practice
- Public Health & Health Care Systems
5. Compare the organization, structure, and function of health care, public health, and regulatory systems across national and international settings
- Planning & Management to Promote Health
7. Assess population needs, assets, and capacities that affect communities' health
 8. Apply awareness of cultural values and practices to the design or implementation of public health policies or programs
 9. Design a population-based policy, program, project, or intervention
- Policy in Public Health
12. Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence
- Communication
19. Communicate audience-appropriate public health content, both in writing and through oral presentation
- Inter-professional Practice
21. Perform effectively on interprofessional teams
- Systems Thinking
22. Apply systems thinking tools to a public health issue

MPH Hispanic and Border Health Concentration Competencies

1. State and discuss the current major communicable, non-communicable, and environmental public health threats in Hispanic and border communities.
2. State the basic principles of prevention and control of communicable and non-communicable diseases; discuss how these principles can be modified to accommodate cultural values and practices in Hispanic and border communities.
3. Identify and access public health data on communicable and non-communicable diseases in Hispanic and border communities (including vital stats and disease registries; health and nutrition surveillance data; census data; national surveys).
4. Identify, access, and summarize the content of one or more current initiatives relevant to border health (e.g., Healthy Border 2020; US-Mexico Border Philanthropy Partnership; Paso Del Norte Regional Strategic Health Framework).

Assessment strategies

Your knowledge of course content related to each competency addressed in this course will be tested in the following ways:

1. Precourse self-assessment: The Precourse Self-Assessment helps evaluate knowledge on environmental health necessary to succeed in the course and determines the need for additional review and practice. The exam will be administered online and include questions on general concepts and knowledge in environmental health.
2. Reflection writing assignments: Students will complete a weekly reflection paragraph after attending class, based on covered lecture topic materials and discussion. Completing a weekly reflection writing assignment offers the opportunity to consider how personal experiences and observations shape thinking and the acceptance of new ideas and improve analytical skills.
3. Class project: **(PENDING UPON STATUS OF HEALTH CONTINGENCY)** Dependent upon class size, students will be organized in groups to complete an environmental risk assessment following a systematic approach and propose a sustainable solution.

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4. Problem-solving presentation: Each student will be assigned an environmental health "wicked problem," for which they will complete a written report or video containing a summary of the literature on the topic, proposed solution, and reflection. Students will be required to complete also an oral-visual presentation based on the report.
5. Attendance and active participation: Attendance, presence, attentive listening, and active engagement in discussions are highly encouraged. Active participation enhances students' understanding of a topic and can help the instructor adjust instruction accordingly.
6. Service-learning: **(PENDING UPON STATUS OF HEALTH CONTINGENCY)** each student will be required to complete a minimum of 10-hours of service-learning. Students will be encouraged to participate in service-learning activities on environmental health and sustainability issues relevant to this unique U.S. Mexico Border region. Students can select their activity or assigned by the instructor. These activities can help students in the understanding of the class topic, explore their values and beliefs and act upon them, develop critical thinking and problem-solving skills, develop or enhance skills, especially in the areas of communication, collaboration, and leadership, and satisfy a need toward public service or civic participation, amongst other possible benefits.
7. Postcourse self-assessment: The Postcourse assessment includes a general exercise to use your new skills by applying your knowledge to real-world problems. A comprehensive online post-test is also included to help you assess how well you understand the presented material.

If you have feedback on the course and your learning experience, instructions on how to provide that are included at the end.

Learning Objectives

Upon completion of this course, students will be able to achieve these objectives.

1. Recall basic concepts and principles in environmental health (Bloom's Level 2).
2. Describe the interconnectedness between the environment and human health from a global, systems thinking perspective (Bloom's Level 2).
3. List and describe, as well as conduct a basic analysis using the four principal skills in environmental health sciences: toxicology, exposure assessment, epidemiology, risk assessment (Blooms' Level 2 & 3).
4. Investigate a complex environmental health problem, and develop a strategy towards its solution (Blooms' Level 4 & 5).
5. Identify, analyze and interpret scientific studies and other sources that determine the quantitative relationship between environmental parameters and health (Blooms' Level 5).
6. Apply gained knowledge to recommend strategies on how the health impact from major environmental hazards can be effectively controlled or managed (Blooms' Level 5 & 6).

Grading scale

Student performance will be evaluated on:

Type	Percent value (%)
Precourse self-assessment	5%*
Reflection writing & in-class participation	15 %
Group or Class project	
Delivered project	30 %
Group Peer-evaluation	10 %
Assigned problem-solving report and presentation	20 %
Service-learning and community health volunteering	- %**
Attendance & participation (80% required minimum)	15 %
Postcourse self-assessment	5%*

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Total 100%

*Pre and post-course examinations are considered self-assessments. However, they are mandatory. A 5% grade deduction will be applied for each assessment not completed.

**PENDING ACTIVITY UPON STATUS OF HEALTH CONTINGENCY

Course policies

Incomplete Policy	The grade of "I" (incomplete) is considered only in very rare circumstances involving fully documented emergencies, must be requested at least <u>four weeks</u> prior to the last class of the fall term, and is allowed at the discretion of the instructor. Incomplete assignments will be graded for partial credit.
Attendance	It is <u>UTEP policy</u> that <u>all students attend all scheduled classes</u> . Attendance will be taken at each class. When a student registers for a course, it is assumed that she/he has made arrangements to avoid conflicts that would result in chronic tardiness or absence from class. Students are personally responsible for all information or activities presented in class discussions, lectures, assignments, and/or readings. If you are unable to attend class, <i>it is your responsibility to inform the instructor before the class session. Students will be administratively withdrawn for excessive unexcused absences of 2 or more classes.</i> Compliance is mandatory with regard to assignment due dates, student-led discussions and class presentations, reading assignments, exams and all other activities. All emergency-related absences must be documented and verified by presentation of documents to the instructor. <i>Chronic tardiness not only reflects lack of commitment and professional behavior but also is disruptive to your classmates and the instructor. You are expected to be seated and ready to begin class at 5:00 PM.</i>
Reading assignments	All assigned readings need to be completed prior to coming to the next scheduled class session. Example: The reading assignments for week 2 need to be completed prior to coming to the week 2 class session.
Writing standards	Effective public health leaders and practitioners must have highly developed written and oral communication skills. Excellent writing skills are a critical element of communication and information dissemination. Our MPH graduate program expects good writing skills as the norm for course work. Please speak with the instructor for resources on-campus that can help you develop necessary writing skills (e.g., UTEP Writing Center).
Late Assignment Policy	Late work will receive point reduction: 50% within two days of deadline. Submission will receive no credit, if submitted after two days.
Permission to record	Recording of lectures and discussion is permitted only with the approval of the instructor.
Classroom electronics	<u><i>All cell phones, headphones, iPods, iPads, mp3 players, earpieces, and other forms of communication and entertainment technology must be powered off and put away during the class period.</i></u> If a situation should arise which necessitates a student to be contacted by a physician or family member, the instructor shall be notified and cell phone can be set to "vibrate." Please be advised that students who use unauthorized technology during class time will be dismissed from that week's class session.

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Class participation	Active student participation in this course is very important. Students must be prepared to come to class to discuss, answer questions, and participate in all class activities.
Special accommodations	If you have a disability and need classroom accommodations, please contact The Center for Accommodations and Support Services (CASS) at 915.747.5148, cass@utep.edu , or visit their office located in UTEP Union East, Room 106. For additional information, visit http://sa.utep.edu/cass/ . CASS Staff are the only individuals who can validate and authorize accommodations for students with disabilities.
UTEP MPH Program Handbook	Available at: http://chs.utep.edu/publichealthsciences/pdf/MPH%20STUDENT%20%20HANDBOOK%202013-2014.pdf
Student Conduct	<p>"Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, and the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another student, any act designed to give unfair advantage to a student or the attempt to commit such acts." <u>University of Texas Regent's Rules and Regulations</u>, Part One, Chapter VI, Section 3.2, Subdivision 3.22.</p> <p>FOR THE PUBLIC HEALTH PROFESSIONAL, ETHICAL CONDUCT IS A CENTRAL TENET AND GUIDING PRINCIPLE OF ALL ACTIVITIES, DECISIONS AND CRITICAL ANALYSES. STUDENTS IN THE MASTERS OF PUBLIC HEALTH PROGRAM AT UTEP ARE EXPECTED TO BE <u>ABOVE REPROACH</u> IN ALL SCHOLASTIC ACTIVITIES.</p> <p>Students who engage in scholastic dishonesty will be subject to disciplinary penalties, including failure in the course and dismissal from the university. "It is an official policy of university that all suspected cases or acts of alleged scholastic dishonesty must be referred to the Dean of Students for investigation and appropriate disposition. Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts." (http://studentaffairs.utep.edu/Default.aspx?tabid=4386)</p> <p>"<u>CHEATING</u>" means copying from the work another student; possession and/or use during an exam or home test of materials which are not authorized by the person giving the test; using, obtaining, or attempting to obtain by any means the whole or any part of non-administered test, test key, homework solution, or computer program; falsifying research data, laboratory reports, and/or other records or academic work offered for credit.</p> <p>"<u>PLAGIARISM</u>" means the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own academic work offered for credit, or using work in a paper or assignment for which the student had received credit in another course without direct permission of all involved instructors. NOTE: This includes cutting-and-pasting and photocopying from on-line and other material.</p>

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	<p>"<u>COLLUSION</u>" means the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on scholastic dishonesty.</p>
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Dates	Competency Topics	Topics: Textbook Chapter (READ BEFORE CLASS)	Assignments and Deadlines
WEEK 1	<ul style="list-style-type: none"> • MPH Hispanic and Border Health Concentration Competencies 1, 2,3 & 4 • Perform effectively on inter-professional teams 	Course overview; What is environmental health? Environmental and Public Health connection; Environmental principals and ecology from systems perspective; Effects of the environment on human health; General discussion on global, national and regional/local current environmental issues.	<ol style="list-style-type: none"> 1. Complete Precourse self-assessment (online) in Blackboard 2. Complete assigned readings & activities (Blackboard) 3. Brainstorm activity on course project topic.
WEEK 2	<ul style="list-style-type: none"> • Apply systems thinking tools to a public health issue. 	Introduction to systems theory in environmental health. Environmental Epidemiology/Concepts and methods/ Applications. Concept of wicked problems in environmental health.	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 1/30
WEEK 3	<ul style="list-style-type: none"> • Apply systems thinking tools to a public health issue; • Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings. 	Introduction to risk assessment and management in environmental health	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 2/6
WEEK 4	<ul style="list-style-type: none"> • Compare the organization, structure and function of health care, public health and regulatory systems across national and international settings; • Discuss multiple dimensions of the policy-making process, including the roles of ethics and evidence. 	Decision making & overview of environmental law & regulation	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 2/13
WEEK 5	<ul style="list-style-type: none"> • Assess population needs, assets and capacities that affect communities' health; • Apply epidemiological methods to the breadth of settings and situations in public health practice; • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Interpret results of data analysis for public health research, policy or practice. 	Toxicology and exposure assessment	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 2/20
WEEK 6	<ul style="list-style-type: none"> • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation. 	Risk assessment modeling	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 2/27 3. In-class Wicked problem presentation

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WEEK 7	<ul style="list-style-type: none"> • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation. 	Risk assessment models: Aggregate and cumulative risk	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 3/6 3. In-class Wicked problem presentation
WEEK 8	<ul style="list-style-type: none"> • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation. 	Risk assessment models: Molecular risk assessment	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 3/20 3. In-class Wicked problem presentation
WEEK 9	<ul style="list-style-type: none"> • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation. 	Risk assessment models: Comparative risk assessment	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 3/27 3. In-class Wicked problem presentation
WEEK 10	<ul style="list-style-type: none"> • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation. 	Risk assessment models: Occupational risk assessment	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 4/3 3. In-class Wicked problem presentation
WEEK 11	<ul style="list-style-type: none"> • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation. 	Risk assessment models: Radiological risk assessment	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 4/10 3. In-class Wicked problem presentation

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WEEK 12	<ul style="list-style-type: none"> • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation. 	Risk assessment models: Microbial risk assessment	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 4/17 3. In-class Wicked problem presentation
WEEK 13	<ul style="list-style-type: none"> • Select quantitative and qualitative data collection methods appropriate for a given public health context; • Analyze quantitative and qualitative data using biostatistics, informatics, computer-based programming and software, as appropriate; • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation. 	Risk assessment models: Children's risk assessment & risk communication	<ol style="list-style-type: none"> 1. Complete assigned readings & activities (Blackboard) 2. Complete reflection paragraph in Blackboard by 4/24 3. In-class Wicked problem presentation
WEEK 14	<ul style="list-style-type: none"> • Apply systems thinking tools to a public health issue; • Communicate audience-appropriate public health content, both in writing and through oral presentation; • Apply awareness of cultural values and practices to the design or implementation of public health policies or programs; • Design a population-based policy, program, project or intervention; • Perform effectively on inter-professional teams • MPH Hispanic and Border Health Concentration Competencies 1, 2,3 & 4 	Group Project presentations	<ol style="list-style-type: none"> 4. Upload report and copy of presentation (or video) to Blackboard by 5/8
WEEK 15	<ul style="list-style-type: none"> • MPH Hispanic and Border Health Concentration Competencies 1& 2. 	Postcourse self-assessment	<ol style="list-style-type: none"> 1. Complete Postcourse self-assessment (online) in Blackboard on 5/13