

PBHL 5303 Foundations of Environmental Health

Credit Hours: 3

Semester: Spring

Class Location:

Modules open on Mondays at 7 am and close one-week later Sundays at 11:59 pm.

**All times are US CST.**

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**Prerequisite:** None

**Course Description:** This course introduces students to the key areas of environmental health. Students will gain an understanding of how individuals, communities, and the environment interact, and the impact of environmental agents on health and the ecosystem. The course will also introduce topics in global environmental health related to changing climate and socioeconomic needs.

**Student Learning Objectives:**

By the end of the course, students should be able to:

- Select and apply appropriate tools to measure environmental hazards and associated health outcomes.
- Examine various environmental exposure pathways (e.g., air, water, climate change, food, built environment) and the health outcomes with which they are associated.
- Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents.
- Employ and evaluate the principles and practices of environmental exposure assessment to address community risk, and effectively communicate the risk to all stakeholders.
- Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards.
- Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity.
- Explain the general mechanisms of toxicity following various environmental exposures.
- Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues.

**CEPH Foundational Learning Domains and Competencies:**

*MPH Core Competencies*

- 4. Interpret results of data analysis for public health research, policy, or practice.**
- 21. Integrate perspectives from other sectors and/or professions to promote and advance population health.**
- 22. Apply a systems thinking tool to visually represent a public health issue in a format other than standard narrative.**

**Required textbook:**

Sampson, N., Tallon, L., & DeJarnett, N. (Eds.). (2024). *Environmental Health: Foundations for Public Health*. Springer Publishing Company.

The textbook is available online. You may acquire the book via the internet through sources such as Majors Scientific Books or Amazon.com at discounted rates and it may be available for rent on Amazon. Any required supplemental readings will be posted on Canvas. Extensive reference materials are available at the Robert R. Muntz Library at UT Tyler and the Watson Wise Library at UT Health Science Center at Tyler.

**Readings:** Textbook reading assignments are indicated in the course schedule. Additional Readings/materials specific to each lecture will be posted as needed. Make sure to follow instructions for assignment completion posted within each module. You are responsible for reading any additional materials provided, so please check Canvas regularly.

**Course Assessment / Methods of Evaluation**

Point allocation

Task	Number	% of Grade
Quizzes	11	20%
Module Assignments	4	30%
EH Hazard and Mitigation Report	1	30%
Article Summary	2	20%
<b>Total Points</b>		<b>100%</b>

**Grading Scale:**

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = below 60%

### Assignments:

#### Quizzes

Weekly quizzes to be completed using an open book approach, on Canvas, and with strict time limits. There are no make-up quizzes. Quizzes will consist of multiple choice, matching, multiple select, true-false, fill in the blank, short answer, or short essay questions. Information included on the quizzes will come from the textbook, assigned readings, and course lectures. Half of quiz questions will be based on information from the reading and not directly discussed during lectures; thus, it is your responsibility to read and comprehend all assigned readings. Except for emergency situations (e.g., medical and death, etc., supported by appropriate documentation), make-up quizzes will not be given, and zero credit will be awarded for missed quizzes. The lowest quiz score will be dropped from final grade consideration. You will be allowed to take quizzes twice and the highest score will be recorded. **Quizzes must be completed by 11:59pm on Sundays.**

#### Module Assignments (MA)

1. *EPA Public Comment:* For this assignment, students will explore and participate in the *Public Comment* process of EPA decision-making. Students will review proposed regulations, proposed modifications to existing regulations, proposed plans and programs, and other proposed actions from the EPA that are open for public comment. Students will then formulate a thoughtful, well-researched, and convincing comment in favor or against the proposed action. Students will submit their comment on [www.regulations.gov](http://www.regulations.gov) and send a clear screenshot and a Word version on Canvas.
2. *Environmental Epi:* For this assignment, students will identify one (1) contaminant (e.g., cryptosporidium, nitrates, carbon monoxide) found in soil, air, water, or food. Students will then describe how it enters the environment, mitigation techniques, human routes of exposure, and health outcomes. Students will then develop a causal loop diagram visually visualizing the information.
3. *Water Quality, Use, and Conservation:* Students will quantify their household water use using an online estimation tool. Next, students will access and analyze the most recent water quality report from their municipal water provider. Students will then write a 2-page paper detailing their household water use, the quality of water being used and what concerns they have, and if/how they can better protect themselves from waterborne and water-associated diseases.
4. *Food Safety:* Students will investigate a recent foodborne outbreak. Students will write a paper (no more than 1 page) describing the pathogen, cause of the outbreak, descriptive statistics (hospitalization rates, incidence rates, deaths, etc.), and actions taken to control the outbreak. Students will then develop a professional-looking, action plan flyer (1 page) to be distributed to restaurants, food production/packaging companies, agriculture/livestock workers, concerned citizens, social media, or any other stakeholders you can think of. The flyer should clearly state the concern and steps to reduce exposure through appropriate food handling techniques specific to the selected pathogen. Think about all the different steps involved that are necessary for the end product to be safe for consumption.

#### Article Analysis and Summary (AA)



Students will complete two (2) Article Analysis and Summary Assignments in this course. For each AA, you will analyze and summarize (250-500 words, single-spaced) an academic journal article related to any environmental health issue. Using layman's terms, you will describe the background, aims/objectives, methods, results, and conclusion of the study. You are responsible for finding the article and must submit it alongside your summary (PDFs only, no links).

*Environmental Health Hazard and Mitigation Report (HMR)*

Students will identify a specific environmental health hazard (e.g., arsenic, storm water runoff, noise pollution). Once identified, students will describe the hazard (chemical/biological/other properties, sources), exposure pathways (direct/indirect, routes), health outcomes (acute/chronic, epidemiological evidence), and evidence-based exposure mitigation techniques (prevention/reduction, policy).

**Extra Credit:** Students who completed a course evaluation survey at the end of the semester and submit their screenshot on canvas (no need to submit your answers, but your completion message on screen) will receive extra credit.

**Student Responsibilities/Expectations**

Class etiquette dictates that you will:

1. Be active in class, please. Your participation will make the course more enjoyable for everyone.
2. Submit required assignments on time per requirement by the instructor. If there is any reason that may prevent a student from doing so, the student must inform the professor ahead of time and not make any excuses for failing to do so. I

**Email Correspondence:** All email correspondence will be through the UT-Tyler email system. Personal email accounts will not be used for any class related matters (ex. assignments, absence notifications, grades, etc.). All students are responsible for checking their UT-Tyler email accounts regularly. Also, we will utilize "Chat" function in Canvas.

**AI use policy:** AI will be used in class, but it is only allowed at the direction of the instructor and for very specific assignments. The use of AI in nonauthorized assignments will result in the grade of "0" points.

**Late Assignments/ Assessments:**

If you are unable to complete a quiz by the deadline, a late submission will be arranged **ONLY** if the reason is deemed legitimate by the instructor, **AND** if the instructor is notified **IN ADVANCE** (a minimum of 24 hours unless it is an emergency), either by phone or email. Students who fail to make appropriate arrangements will receive a grade of "0" for the assignment missed. There will be no exceptions.

**Course schedule**

Module	Topic	Readings	Assignments
1	Course introduction and expectations	Syllabus	Introductions
2	Introduction to Environmental Health	Chapter 1	
3	Environmental Justice, the Built Environment	Chapter 2, 5, 14	
4	Environmental Policy	Chapter 4	MA
5	Climate change	Chapter 3	
6	Environmental Health Risks and Exposure Assessment	Chapter 6	
7	Toxicology and Epidemiology	Chapter 7	MA
8	Air Quality	Chapter 10	
9	Water Quality	Chapter 11	MA
10	Public Health and Natural Disasters	Chapter 15	AA
11	Occupational Health	Chapter 16	
12	Food Safety and Security	Chapter 12	MA
13	Waste and Sustainability	Chapter 13	AA
14	One Health	Assigned Readings	
15	Finals		HMR

**Student Resources:**

Faculty can update student resources to provide additional supports appropriate for each course.

**Resources to assist you in the course**

- [UT Tyler Student Accessibility and Resource \(SAR\) Office](#) (provides needed accommodations to students with document needs related to access and learning)
- [UT Tyler Writing Center](#)
- [The Mathematics Learning Center](#)
- [UT Tyler PASS Tutoring Center](#)
- [UT Tyler Supplemental Instruction](#)
- [Upswing \(24/7 online tutoring\) - covers nearly all undergraduate course areas](#)
- [Robert Muntz Library](#) and [Library Liaison](#)
- [Canvas 101](#) (learn to use Canvas, proctoring, Unicheck, and other software)
- Digital Support Toolkit (for supported courses only. Students are automatically enrolled in the toolkit for supported courses)
- LIB 422 -- Computer Lab where students can take a proctored exam
- [The Career Success Center](#)
- [UT Tyler Testing Center](#)
- [Office of Research & Scholarship Design and Data Analysis Lab](#)

**Resources available to UT Tyler Students**

- [UT Tyler Counseling Center](#) (available to all students)

- [MySSP App](#) (24/7 access to Student Support Program counseling through phone or chat and online wellness resources available in a variety of languages)
- [Student Assistance and Advocacy Center](#)
- [Military and Veterans Success Center](#) (supports for our military-affiliated students)
- [UT Tyler Patriot Food Pantry](#)
- [UT Tyler Financial Aid and Scholarships](#)
- [UT Tyler Student Business Services](#) (pay or set up payment plans, etc.)
- [UT Tyler Registrar's Office](#)
- [Office of International Programs](#)
- [Title IX Reporting](#)
- [Patriots Engage](#) (available to all students. Get engaged at UT Tyler.)

### **University Policies and Information**

#### **Withdrawing from Class**

Students may [withdraw](#) (drop) from this course using the [Withdrawal Portal](#). Withdrawing (dropping) this course can impact your Financial Aid, Scholarships, Veteran Benefits, Exemptions, Waivers, International Student Status, housing, and degree progress. Please speak with your instructors, consider your options, speak with your advisor, and visit the One-Stop Service Center (STE 230) or email [enroll@uttyler.edu](mailto:enroll@uttyler.edu) to get a complete review of your student account and the possible impacts to withdrawing. We want you to make an informed decision. UT Tyler faculty and staff are here for you and often can provide additional support options or assistance. Make sure to carefully [read the implications for withdrawing from a course and the instructions](#) on using the [Withdrawal portal](#).

Texas law prohibits students from dropping more than six courses during their entire undergraduate career\*. The six courses dropped includes those from other 2-year or 4-year Texas public colleges and universities. Consider the impact withdrawing from this class has on your academic progress and other areas, such as financial implications. We encourage you to consult your advisor(s) and Enrollment Services for additional guidance. **CAUTION #1:** Withdrawing before census day does not mean you get a full refund. Please see the [Tuition and Fee Refund Schedule](#). **CAUTION #2:** All international students must check with the [Office of International Programs](#) before withdrawing. All international students are required to enroll full-time for fall and spring terms. **CAUTION #3:** All UT Tyler Athletes must check with the Athletic Academic Coordinator before withdrawing from a course. **CAUTION #4:** All veterans or military-affiliated students should consult with the [Military and Veterans Success Center](#).

\* Students who began college for the first time before 2007 are exempt from this law.

#### **Artificial Intelligence Statement**

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear

correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. Refer to the About This Course section of the UT Tyler Syllabus Module for specific information on appropriate use of AI in your course(s).

### **Final Exam Policy**

Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the Dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members must maintain student final examination papers for a minimum of three months following the examination date.

### **Incomplete Grade Policy**

If a student, because of extenuating circumstances, is unable to complete all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in place of a grade *only when all of the following conditions are met*: (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all coursework or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor, and (c) the student presents these reasons before the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average.

The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval. The time limit established must not exceed one year. Should the student fail to meet all of the work for the course within the time limit, then the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has yet to be assigned within one year, then the Incomplete will be changed to an F, or NC. If the course was initially taken under the CR/NC grading basis, this may adversely affect the student's academic standing.

### **Grade Appeal Policy**

Disputes regarding grades must be initiated within sixty (60) days from the date of receiving the final course grade by filing a Grade Appeal Form with the instructor who assigned the grade. A grade appeal should be used when the student thinks the final course grade awarded does not reflect the grades earned on assessments or follow the grading scale as documented in the syllabus. The student should provide the rationale for the grade appeal and attach supporting document about the grades earned. The form should be sent via email to the faculty member who assigned the grade. The faculty member reviews the rationale and supporting documentation and completes the instruction section of the form. The instructor should return the form to the student, even if a grade change is made at this level. If the student is not satisfied with the decision, the student may appeal in writing to the Chairperson of the department from which the grade was issued. In situations where there is an allegation of capricious grading, discrimination, or unlawful actions, appeals may go beyond the Chairperson to the Dean or the Dean's designee of the college from

which the grade was issued, with that decision being final. The Grade Appeal form is found in the [Registrar's Form Library](#).

NOTE: The Grade Appeal Form is different from the Application for Appeal form submitted to the Student Appeals Committee, which does not rule on grade disputes as described in this policy.

### **Disability/Accessibility Services**

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA), the University of Texas at Tyler offers accommodations to students with learning, physical, and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler/> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with the Assistant Director Student Accessibility and Resources/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <https://www.uttyler.edu/disability-services>, the SAR office located in the Robert Muntz Library, LIB 460, email [saroffice@uttyler.edu](mailto:saroffice@uttyler.edu), or call 903.566.7079."

### **Military Affiliated Students**

UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make your faculty member aware of any complications as far in advance as possible. Your faculty member is willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. The [Military and Veterans Success Center \(MVSC\)](#) has campus resources for military-affiliated students. The MVSC can be reached at MVSC@uttyler.edu or via phone at 903.565.5972.

### **Students on an F-1 Visa**

To remain in compliance with Federal Regulations requirements you must do the following:

- Traditional face-to-face classes: Attend classes on the regular meeting days/times.
- Hybrid Classes: Attend all face-to-face classes convened by the instructor according to the schedule set for your specific course.
- Online course: Only one online course can count toward your full-time enrollment. Students are expected to be fully engaged and meet all requirements for the online course.

### **Academic Honesty and Academic Misconduct**

The UT Tyler community comes together to pledge that "Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do." Therefore, we enforce the [Student Conduct and Discipline policy](#) in the Student Manual Of Operating Procedures (Section 8).

### **FERPA**

UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in [University Policy 5.2.3](#). The course instructor will follow all requirements to protect your confidential information.



#### **Absence for Official University Events or Activities**

This course follows the practices related to [Excused Absences for University Events or Activities](#) as noted in the Catalog.

#### **Absence for Religious Holidays**

This course follows the practices related to [Excused Absences for Religious Holy Days as noted in the Catalog](#).

#### **Absence for Pregnant Students**

This course follows the requirements of Texas Laws SB 412, SB 459, SB 597/HB 1361 to meet the needs of pregnant and parenting students. Part of the supports afforded pregnant students includes excused absences. Faculty who are informed by a student of needing this support should make a referral to the Parenting Student Liaison. NOTE: Students must work with the Parenting Student Liaison in order to receive these supports. Students should reach out to the Parenting Student Liaison at [parents@uttyler.edu](mailto:parents@uttyler.edu) and also complete the [Pregnant and Parenting Self-Reporting Form](#).

#### **Campus Carry**

We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>.