



HHPH 530 81E & 81W, ADVANCED EPIDEMIOLOGY

COURSE SYLLABUS: FALL 2026

SECTION 1: INSTRUCTOR INFORMATION

Instructor: David Onchonga, PhD, Assistant Professor of Epidemiology

Department: Department of Health and Human Performance

Office Hours: Monday–Tuesday: 2:00–4:00 p.m. & Wednesday: 2:00–4:00 p.m. *Additional appointments are available by request.*

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University Email Address: david.onchonga@etamu.edu

Preferred Method of Communication: University email. Students requesting appointments should contact the instructor by email to arrange a mutually convenient meeting time. Emails will normally be answered within 24–48 business hours. Messages received during weekends, university holidays, or official university closures will be answered on the next business day.

SECTION 2: COURSE DESCRIPTION

This graduate-level course builds upon foundational epidemiologic principles to develop advanced competencies in epidemiologic reasoning, causal inference, critical appraisal of scientific evidence, and evidence-informed public health decision-making. Students examine complex public health challenges through the use of epidemiologic research, surveillance data, systematic reviews, and real-world case studies. Through the application of contemporary epidemiologic methods, students learn to evaluate study validity, identify bias and uncertainty, interpret epidemiologic findings, and translate scientific evidence into recommendations that inform public health policy and practice.

Course Rationale

Contemporary public health practice requires professionals who can critically evaluate scientific evidence, distinguish causal relationships from statistical associations, recognize methodological limitations, and make defensible decisions under conditions of uncertainty. This course develops these advanced competencies through applied epidemiologic reasoning, evidence synthesis, health equity considerations, and authentic public health case studies.

SECTION 3: COURSE INFORMATION

Course Value: Three (3) Credit Hours

Course Location/Time: 81B – Bi-Weekly Sessions (TBA)

81W – Online

Prerequisites

Prerequisite: HHPH 587 Epidemiology or an equivalent graduate-level introductory epidemiology course with instructor approval.

Students should possess foundational knowledge of measures of disease frequency and association, observational and experimental study designs, introductory epidemiologic methods, and basic biostatistics.

Materials – Textbooks, Readings, Supplementary Readings

Textbook(s) Required: Rothman KJ, Lash TL, Greenland S. *Modern Epidemiology*. 4th ed. Wolters Kluwer; 2021.

Software Required: IBM SPSS Statistics (Version 30 or later). SPSS may be used for selected demonstrations, interpretation exercises, and applied epidemiologic activities. The course emphasizes epidemiologic reasoning and interpretation rather than advanced statistical computation. Students may also use Microsoft Excel for selected activities.

Additional Readings

Throughout the semester, students will critically evaluate contemporary epidemiologic literature selected from leading peer-reviewed journals including:

1. American Journal of Epidemiology
1. International Journal of Epidemiology

2. The Lancet Public Health
3. American Journal of Public Health

Professional Resources

Students will engage with surveillance data and public health guidance from the CDC, WHO, Texas Department of State Health Services, Healthy People 2030, AHRQ, and USPSTF.

Optional Texts and/or Materials

All written assignments should be prepared using APA Publication Manual (7th edition) guidelines unless otherwise noted. Students are encouraged to maintain access to the current APA Publication Manual throughout the semester.

SECTION 4: STUDENT LEARNING OUTCOMES

Upon successful completion of this course, students will be able to:

2. Critically evaluate the methodological quality, validity, and applicability of epidemiologic research.
1. Differentiate association from causation using contemporary causal inference frameworks and epidemiologic reasoning.
2. Evaluate the influence of bias, confounding, effect modification, measurement error, missing data, and uncertainty on epidemiologic findings.
3. Critically assess the strengths and limitations of epidemiologic study designs used to investigate public health problems.
4. Interpret and appraise epidemiologic effect estimates, including relative risks, odds ratios, hazard ratios, confidence intervals, and measures of absolute and relative risk.
5. Synthesize epidemiologic evidence from multiple sources to support evidence-informed public health decision-making and causal interpretation.
6. Communicate epidemiologic findings effectively through professional scientific writing, presentations, and policy-oriented recommendations.
7. Apply ethical principles, scientific integrity, and health equity considerations when evaluating and communicating epidemiologic evidence.

SECTION 5: COURSE REQUIREMENTS

Minimal Technical Skills Needed

Students should possess the technical skills necessary to successfully participate in a graduate-level online or hybrid course. These include:

- Using the D2L Brightspace Learning Management System.
- Accessing and using university email.
- Creating and submitting assignments using Microsoft Word, PowerPoint, and Excel.
- Accessing and reviewing scientific literature through university library databases.
- Participating in online discussions and virtual meetings.
- Utilizing online resources for epidemiologic data, surveillance reports, and public health information.

Instructional Methods

HHPH 530 is designed as an interactive graduate-level learning experience that emphasizes epidemiologic reasoning, critical evaluation of scientific evidence, and evidence-informed public health decision-making. Students will engage with contemporary epidemiologic concepts through faculty-guided discussions, epidemiologic case studies, critical appraisal of scientific literature, applied learning activities, journal club discussions, evidence synthesis exercises, and epidemiologic simulations.

The course emphasizes the application of epidemiologic methods to authentic public health challenges. Students will be expected to evaluate evidence, identify methodological strengths and limitations, assess uncertainty, and develop evidence-informed recommendations relevant to public health policy and practice.

Instructional methods may include:

- Faculty-guided discussions
- Epidemiologic case studies
- Critical appraisal of scientific literature
- Graduate journal club activities
- Evidence synthesis exercises

- Applied epidemiologic simulations
- Individual and group problem-solving activities
- Professional presentations and discussions

The instructor reserves the right to modify course content, activities, and instructional approaches to enhance learning outcomes.

Student Responsibilities or Tips for Success in the Course

Success in HHPH 530 requires active participation, professional engagement, and consistent preparation. Students are expected to:

Read Before Class: Complete assigned readings and review course materials prior to each class session.

Engage Critically with Scientific Literature: Evaluate the quality of evidence, identify potential sources of bias, and assess the strength of epidemiologic conclusions rather than accepting findings at face value.

Manage Time Effectively: Graduate coursework requires substantial time for reading, analysis, discussion participation, and written assignments. Students should establish a consistent study schedule and avoid waiting until assignment deadlines approach.

Participate Professionally: Contribute actively to discussions and collaborative activities while communicating respectfully and professionally with classmates and the instructor.

Communicate Early: Students experiencing academic, personal, or technical challenges should contact the instructor as early as possible to discuss available resources and support.

Students should anticipate spending approximately 8-12 hours per week outside of scheduled class activities on readings, assignments, discussions, assessments, and course projects.

SECTION 6: GRADING

Final grades are determined by the total number of points earned across all course assessments. Grades will be assigned according to the following scale:

Table 1:Grading

Grade	Percentage	Points
A	90–100%	900-1000
B	80–89%	800–899
C	70–79%	700–799
D	60–69%	600–699
F	Below 59%	0 – 599

Grades reflect demonstrated achievement of the course learning outcomes through successful completion of the required assessments.

Students are responsible for regularly monitoring their progress in the D2L Gradebook. If you believe an error has occurred in the recording of a grade, notify the instructor promptly.

Questions regarding grades should be raised as soon as possible rather than at the end of the semester. Students who withdraw from the course while not meeting the minimum passing requirements will receive the appropriate grade in accordance with university policy.

Assessment summary

Table 2: Assessment Summary

Assignment	points	Percent
Epidemiology Decision Laboratories (3)	150	15%
Applied Individual Competency Assessment (AICA)	150	15%
Critical Appraisal Portfolio	350	35%
Graduate Journal Club Leadership	150	15%
Texas Epidemiology Simulation (Capstone)	150	15%
Professional Participation and Engagement	50	5%
Total	1000	100%

All assessments are designed to evaluate students' ability to apply advanced epidemiologic reasoning, critically interpret evidence, evaluate methodological quality, assess causal relationships, and develop evidence-informed recommendations for public health practice.

Assignment and Assessments

Epidemiology Decision Laboratories- 150 points (15%)

Students will work collaboratively to investigate authentic public health challenges using epidemiologic evidence, surveillance data, scientific literature, and public health reports. Each laboratory culminates in a concise evidence brief that evaluates study validity, identifies bias and confounding, interprets epidemiologic findings, and provides evidence-informed public health recommendations. The purpose of these activities is to strengthen epidemiologic reasoning, critical appraisal skills, and decision-making in real-world public health contexts.

Applied Individual Competency Assessment (AICA)- 150 points (15%)

The AICA is an individual assessment designed to evaluate each student's ability to independently interpret epidemiologic evidence and apply advanced epidemiologic reasoning. Students will analyze public health scenarios, evaluate study quality, assess bias and uncertainty, interpret findings, and develop evidence-informed recommendations. This assessment emphasizes critical thinking and professional judgment rather than memorization.

Critical Appraisal Portfolio- 350 points (35%)

The Critical Appraisal Portfolio serves as the major individual assignment in the course. Students will select an approved public health topic and progressively develop a portfolio that includes literature review, critical appraisal of epidemiologic studies, evaluation of bias and causal inference, evidence synthesis, and a final evidence-to-policy brief. The portfolio demonstrates competency in scientific evaluation, evidence integration, and public health communication.

Graduate Journal Club Leadership- 150 points (15%)

Each student will facilitate one graduate-level journal club session based on a contemporary epidemiologic study. Students will guide scholarly discussion, critique study methodology, evaluate validity, causality, bias, and threats to causal inference, interpret epidemiologic findings, and discuss implications for policy and practice. This activity strengthens scientific communication and leadership skills.

Texas Epidemiology Simulation (Capstone)- 150 points (15%)

The capstone simulation places students in the role of an epidemiology advisory team responding to an evolving public health emergency. Working collaboratively, students will analyze surveillance data, evaluate emerging evidence, address uncertainty, consider health equity implications, and formulate recommendations for public health action. The simulation integrates the major competencies developed throughout the course.

Professional Participation and Engagement- 50 points (5%)

Graduate education depends upon active participation and professional engagement. Students are expected to complete assigned readings, contribute thoughtfully to discussions, participate in course activities, collaborate effectively with peers, and demonstrate professionalism in all interactions. Participation is evaluated based on the quality of contributions rather than attendance alone.

Assignment Submission Requirements

Unless otherwise specified, all written assignments must be submitted electronically through D2L Brightspace and prepared according to the *Publication Manual of the American Psychological Association* (7th ed.). Assignment instructions, grading rubrics, and submission deadlines will be available within each course module.

Assessment Philosophy

Assessment in HHPH 530 is designed to evaluate how students think, reason, interpret evidence, and make decisions as professional epidemiologists. Successful students will demonstrate the ability to critically evaluate scientific evidence, distinguish association from causation, recognize bias and uncertainty, synthesize findings from multiple sources, and communicate evidence-informed recommendations relevant to public health practice and policy.

Course Schedule

Please note that this schedule is tentative and subject to change.

Course Schedule

Table 3: Course Schedule

Week	Topic	Activities & Assignments
Unit 1: Evaluating Epidemiologic Data		
1	Thinking Like an Advanced Epidemiologist	Course orientation; Portfolio topic selection
2	Surveillance, Data Quality, and Public Health Intelligence	Surveillance critique activity; Decision Laboratory 1 released
3	Measurement, Misclassification, and Diagnostic Accuracy	Diagnostic testing workshop; Portfolio Part 1 due
Unit 2: Evaluating Epidemiologic Studies		
4	Selection Bias and Internal Validity	Bias mapping exercise; Graduate Journal Club begins
5	Confounding, Effect Modification, and Directed Causal Thinking	Decision Laboratory 1 due; Effect estimate interpretation workshop

6	Modern Causal Inference Frameworks	Portfolio Part 2 due; Causal inference workshop
7	Contemporary Epidemiologic Study Designs: Strengths, Limitations, and Causal Inference	Design comparison exercise; AICA preparation activities
Unit 3: Contemporary Epidemiologic Reasoning		
8	Applied Individual Competency Assessment (AICA)	AICA completed; Mid-semester professional reflection
9	Missing Data, Sensitivity Analysis, and Uncertainty	Missing data workshop; Portfolio Part 3 due
10	Evidence Synthesis and Triangulation	Decision Laboratory 2 due; Critical appraisal exercise
11	Screening, Prevention, and Health Equity	Portfolio Part 4 due; Screening debate
Unit 4: Evidence into Public Health Action		
12	Communicating Scientific Uncertainty	Risk communication and public health messaging activities
13	Translating Epidemiologic Evidence into Policy	Portfolio Part 5 due; Policy translation workshop
14	Epidemiology Decision Conference	Final Critical Appraisal Portfolio due; Decision Laboratory 3 due
15	Texas Epidemiology Simulation (Capstone)	Team simulation; Final briefing presentations
16	Finals Week	Faculty grading period; No new assignments

The syllabus and schedule are subject to change. Any modifications will be communicated through D2L and university email.

TECHNOLOGY REQUIREMENTS

LMS

All course sections offered by East Texas A&M University have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

ACCESS AND NAVIGATION

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or helpdesk@etamu.edu.

Note: Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a ETAMU campus open computer lab, etc.

COMMUNICATION AND SUPPORT

If you have any questions or are having difficulties with the course material, please contact your instructor.

Technical Support

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

Interaction with Instructor Statement

E-mail strategy: You are welcome to email your questions or concerns to me. Please include the following:

- Course number and subject in the subject line
- Professional salutation
- Clear description of your question or concern
- Your name and CWID

There are, however, some caveats associated with email that you must remember:

A reasonable response time to emailed questions is 24 - 48 business hours.

Questions emailed on weekends may not receive a response until the work week begins.

As the instructor, I reserve the right to answer emailed questions regarding assignments, tests, discussion boards, etc., in a direct email/announcement post to everyone for the benefit of all

students. Please be courteous and professional in all your interactions with fellow classmates and the instructor.

Course-Specific Participation Expectations

For students enrolled in the 81W section, attendance is demonstrated through regular participation in D2L Brightspace, completion of assigned activities, timely submission of coursework, and engagement in assigned discussions and learning activities.

For students enrolled in the 81E section, attendance and active participation in scheduled bi-weekly sessions are expected. Students should arrive prepared to discuss assigned readings, participate in applied learning activities, and contribute meaningfully to discussions.

Graduate-level learning depends upon active scholarly engagement. Students are expected to complete assigned readings before class, contribute thoughtfully to discussions, engage respectfully with differing viewpoints, and demonstrate professionalism in all course-related interactions. Participation is evaluated based on the quality of contribution rather than attendance alone.

Make-up Work

Make-up of coursework will follow university protocols as listed above. Life circumstances do happen and, in those instances, I encourage you to reach out as soon as possible so we can review and discuss potential make-up/extensions. In most cases: Send a notification at least 48 business hours prior to the end of the course week a particular assignment is due in order to verify your reason for missing coursework (rare circumstances and/or excused absences).

Syllabus Change Policy

The syllabus is a guide. Circumstances and events, such as course/student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

UNIVERSITY SPECIFIC PROCEDURES

Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the Student Guidebook.

<https://inside.etamu.edu/admissions/registrar/documents/studentGuidebook.pdf>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: <https://www.britannica.com/topic/netiquette>

ETAMU Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedures 13.99.99.R0.01](#)

<http://www.etamu.edu/admissions/registrar/generalInformation/attendance.aspx>

Academic Integrity

Students at East Texas A&M University are expected to maintain high standards of integrity and honesty in all their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

[Undergraduate Student Academic Dishonesty Form](#)

<http://www.etamu.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/documents/13.99.99.R0.03UndergraduateStudentAcademicDishonestyForm.pdf>

Graduate Students Academic Integrity Policy and Form

[Graduate Student Academic Dishonesty Form](#)

<https://inside.etamu.edu/aboutus/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10.pdf>

Students with Disabilities-- ADA Statement

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

Office of Student Disability Resources and Services

East Texas A&M University

Velma K. Waters Library, Rm 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: studentdisabilityservices@etamu.edu

Website: [Student Disability Services](#)

<https://www.etamu.edu/student-disability-services/>

Nondiscrimination Notice

East Texas A&M University will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

Campus Concealed Carry Statement

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in East Texas A&M University buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer. Web url:

<http://www.etamu.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

A&M-Commerce Supports Students' Mental Health

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit www.etamu.edu/counsel

Mental Health and Well-Being

The university aims to provide students with essential knowledge and tools to understand and support mental health. As part of our commitment to your well-being, we offer access to Telus Health, a service available 24/7/365 via chat, phone, or webinar. Scan the QR code to download

the app and explore the resources available to you for guidance and support whenever you need it.



<http://telusproduction.com/app/5108.html>

AI Use Policy

East Texas A&M University acknowledges that artificial intelligence technologies may have legitimate educational and professional uses when authorized by the instructor. Students should comply with university expectations regarding disclosure, attribution, and responsible use of artificial intelligence.

Course-Specific AI Policy

Artificial intelligence is increasingly utilized in epidemiologic research, disease surveillance, healthcare, policy analysis, and scientific communication. HHPH 530 encourages the ethical, transparent, and responsible use of AI technologies while maintaining independent scientific reasoning and professional judgment.

Students may use approved AI tools to:

- Brainstorm research ideas.
- Improve grammar and writing clarity.
- Identify relevant resources.

Students may not use AI to:

- Generate assignments submitted as original work.
- Produce fabricated references or citations.
- Replace independent interpretation of epidemiologic evidence.
- Complete assessments intended to evaluate individual competency.
- Misrepresent AI-generated work as personal scholarship.

Whenever AI is used to support an assignment, students must provide a brief disclosure describing:

- The AI tool utilized.
- How the tool was used.
- How outputs were verified and validated.

Students remain fully responsible for the scientific accuracy, interpretation, conclusions, quality, originality, and integrity of all submitted work. The instructor reserves the right to request drafts or supporting documentation to verify the originality and development of submitted work.