

M19-501: INTRODUCTORY CLINICAL EPIDEMIOLOGY (3 credits)

Fall 1 (8/29/2023 to 10/19/2023)

Time: Tuesdays & Thursdays, 9 am to noon

Location: Doll and Hill Teaching Room, 600 S. Taylor Avenue.

INSTRUCTOR

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GUEST SPEAKERS

Elizabeth Yanik, PhD ScM - Assistant Professor of Orthopedic Surgery, WUSM

Jean Wang, MD, PhD - Professor of Medicine, WUSM

Fei Wan, PhD - Associate Professor of Surgery, WUSM

Yikyung Park, ScD - Associate Professor of Surgery, WUSM

Sylvester Orimaye - Assistant Professor and Data Science Program Director, UHSP

COURSE DESCRIPTION & OBJECTIVES

The first course in the Epidemiology series, this course introduces the basic principles and methods of epidemiology, with an emphasis on critical thinking, analytic skills, and application to clinical practice and research. Class time will include lectures, group problem solving, article critiques and class discussion. Designed for those with a clinical background, the course will provide tools for critically evaluating the literature and skills to practice evidence-based medicine.

COMPETENCIES

- Describe a public health problem in terms of magnitude, person, time and place.
- Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
- Apply the basic terminology and definitions of epidemiology.
- Calculate basic epidemiology measures.
- Communicate epidemiologic information to lay and professional audiences.
- Draw appropriate inferences from epidemiologic data.
- Identify threats to the validity of epidemiological studies.
- Evaluate the strengths and limitations of epidemiologic studies.

COURSE EXPECTATIONS

The instructors will prepare and deliver course material; be available to students during and after class and by appointment; and provide clear, timely feedback on student performance. The instructors retain the right to change the content and order of the lectures and exercises to meet the needs of the students who are enrolled in the course.

The instructors expect the students to:

- Attend each class;
- Complete all assignments in a timely manner;
- Come to class prepared, and having read all assignments;
- Participate in class discussions;
- Seek any necessary clarification regarding course expectations; and
- Provide feedback on the course.

Any issues with attendance, meeting deadlines, or completion of assignments should be discussed with the instructor. Email is the best mode of contact.

CLASSROOM ETIQUETTE

- Turn all cell phones and pagers to silent or vibrate
- Do not use the internet, social media sites, BJC clinical sites or check email during class time
- There will be two 15-minute break(s) during each class session

COURSE EVALUATION

Students will be evaluated on the basis of their class participation, exams, article critiques, in-class problem sets and final projects.

1. **Participation (10%):** The participation portion of your grade is based upon regular and timely attendance, as well as active, meaningful contributions to class discussion, participation during article critiques. Frequency: *each class*.

2. **In-class problem sets (30%):** You will work in groups of 3 to complete problem sets. Problem sets will be based on information from lectures, the text, and supplemental readings as assigned for that class.
3. **Final project (10%)** – Students will apply information learned during the course, and work in pairs to design epidemiological studies of their choice. Each pair will give a 20-minute PowerPoint presentation to the class on **10/17/2023**.
4. **Exams (50%):** There will be two exams: a mid-term (20%) and final exam (30%). Exams will be cumulative and cover material from lecture and required readings.

Additional Information for Problem Sets and Final Exam: Students with a scheduling conflict or in need of special accommodations must notify the instructor in advance. If you are unable to notify the instructor in advance, you must notify the instructor as soon as possible by email.

The final exam will be closed book and closed notes. Students will be allowed to have a single sheet of paper with formulae. This sheet may be hand- or type-written. No additional supplemental sources of information are allowed during the examination periods.

Calculators are needed for use during the quiz and exam. Mobile phones are not allowed during exams. Use of a mobile phone during an exam for any other purpose will be considered academic misconduct.

Grading scale:

A+	A	A-	B+	B	B-	C	C	C-	F
97-100	94-96	90-93	88-89	84-87	80-83	78-79	74-77	70-73	<70

Policy on Absences: Absences must receive prior approval from the instructor, and in the case that an absence coincides with a students' scheduled day to lead discussion or present, arrangements must be made with classmates to swap dates. The instructor will allow for documented family emergencies.

REQUIRED TEXTBOOK

Gordis L. *Epidemiology*, by David D Celentano ScD MHS and Moyses Szklo MD. 6th Ed. 2018. Philadelphia, PA: Saunders-Elsevier. ISBN: 978-1-4557-3733-8.

RECOMMENDED TEXTBOOK

Porta M. *A dictionary of Epidemiology*, 6th Ed. 2014

SUPPLEMENTAL REQUIRED READINGS

Articles have been selected to complement the readings from the primary textbook. Links to articles will be provided in class and posted on Canvas.

COURSE SCHEDULE¹⁻²

Date	Topics	Readings ²
8/29	Introductions and Course Overview History and Scope of Epidemiology	Gordis: Ch. 1
8/31	Fundamental Concepts in Epidemiology I: Measures of Disease Occurrence <ul style="list-style-type: none"> • Prevalence • Incidence 	Gordis: Chs. 3 & 4 Article as assigned
9/5	Fundamental Concepts in Epidemiology II: Measures of Effect and Potential Impact <ul style="list-style-type: none"> • Absolute • Relative 	Gordis: Chs. 11 & 12 Quiz 1 Article as assigned
9/7	Standardization	Quiz 2 Article as assigned
9/12	Screening	Gordis: Chs. 5 & 18 Quiz 3 Article as assigned
9/14	Causal Criteria in Epidemiology	Gordis: Ch. 14 Quiz 4 Article as assigned
9/19	MID-TERM EXAM	
9/21	Design and Planning of Epidemiological Studies	Article as assigned Quiz 5
9/26	Case-control and Other Study Designs (cross-sectional, ecological etc.)	Gordis: Ch. 10 Design a case control study Article as assigned
9/28	Cohort Study Designs	Gordis: Ch. 9 Quiz 6 Article as assigned
10/3	Validity in Epidemiological Studies I: Bias	Gordis: Ch. 15 Quiz 7 Article as assigned
10/5	Validity in Epidemiological Studies II: Confounding and Effect modification	Gordis: Ch. 15 Quiz 8 Article as assigned
10/10	Causal Inference	Quiz 9 Article as assigned
10/12	Clinical and Translational Epidemiology - Artificial Intelligence in Healthcare	Article as assigned
10/17	Final Presentations	
10/19	FINAL EXAM	

1) For each class meeting, except the first two days and unless otherwise noted as a presentation or exam date, the class period will be split into three: the first period will consist of lectures, the second period will

consist of group problem solving and the third period will be devoted to article discussion and synthesis.

DROP DATES

You may drop for any reason during the course of the semester. However, you may only receive a partial or no tuition reimbursement depending upon how far into the semester you drop the course. See the [MPHS Student Handbook](#). Late withdrawals will appear on your transcript as a withdrawal.

MPHS Academic Policy Guidelines:

Guidelines regarding MPHS course registration and enrollment, grades, tuition obligation, and academic leave are consolidated in the [MPHS Student Handbook](#). Please review this document.

MPHS Guidelines for Academic and Non-Academic Transgressions:

By registering for this course you have agreed to the terms of the [MPHS Academic Integrity Policy, outlined below and in more detail in the MPHS Student Handbook](#). Please review this policy before submitting your first graded assignment.

Academic Integrity/Plagiarism Policy:

- Academic dishonesty is a serious offense that may lead to probation, suspension, or dismissal from the University. Academic dishonesty includes plagiarism (the use of someone else's ideas, statements, or approaches without proper citation). Academic dishonesty also includes copying information from another student, submitting work from a previous class for a new grade without prior approval from your instructor, cheating on exams, etc. You are responsible for reviewing [WashU's academic integrity resources](#) to become aware of all the actions that constitute academic dishonesty.
- All instances of academic dishonesty will be reported to the Office of the Registrar for investigation and potential disciplinary action. In addition, the instructor will make an independent decision about the student's grade on any assignment in question. The MPHS process regarding academic dishonesty is described in the [MPHS Student Handbook](#)

DISABILITY RESOURCES

It is the goal of Washington University to assist students with disabilities in removing the barriers their disabilities may pose and provide support in facing the challenge of pursuing an education at Washington University.

Washington University recognizes and accepts its professional, legal and moral responsibility to avoid discrimination in the acceptance and education of qualified students with disabilities and to provide reasonable accommodations to such students consistent with the principles embodied in the law. These guidelines apply to students seeking admittance as well as to those who become disabled while they are enrolled.

Washington University makes every effort to insure that all qualified applicants and students can participate in and take full advantage of all programs and opportunities offered within the university. Washington University encourages and gives full consideration to all applicants for admission. Washington University does not discriminate in access to its programs and activities on the basis of age, sex, sexual orientation, race, disability, religion, color or national origin.

To learn more about services provided to students with disabilities, initiate the process of formal

documentation and/or to arrange for accommodations, please review the [Disability Resources](#) for the Med School at the start of the course.

MENTAL HEALTH RESOURCES

Mental Health Services' professional staff members work with students to resolve personal and interpersonal difficulties, many of which can affect the academic experience. These include conflicts with or worry about friends or family, concerns about eating or drinking patterns, and feelings of anxiety and depression. See: shs.wustl.edu/MentalHealth.

SEXUAL ASSAULT RESOURCES

You can also speak confidentially and learn about available resources by contacting [Dr. Gladys Smith, PhD](#), Sexual Violence Prevention Therapist and Licensed Psychologist at the Medical Campus, (314) 362-2404. Additionally, you can report incidents to the Office of Student Affairs or by contacting WUSM Protective Services 314-362-4357 or your local law enforcement agency.

BIAS RESOURCES

The University has a process through which students and staff who have experienced or witnessed bias, prejudice or discrimination against a student can report their experiences to the University's Bias Report and Support System (BRSS) team. For details see: diversityinclusion.wustl.edu/brss/.

Office of the Associate Vice Chancellor for Diversity, Equity and Inclusion (DEI)

The DEI Training Team designs, facilitates and leads diversity education programming for faculty, staff and students on a wide range of topics including: creating a climate of respect, the value of diversity and the role of biases in our day-to-day lives.

diversity.med.wustl.edu/training/

The Office of Diversity Programs promotes diversity among and prepares medical students to lead in a global society. A priority for the Office of Diversity Programs is to cultivate and foster a supportive campus climate for students of all backgrounds, cultures and identities.

mddiversity.wustl.edu/

The Diversity and Inclusion Student Council promotes an inclusive campus environment for all School of Medicine students.

sites.wustl.edu/disc/

The Office for International Students and Scholars embraces the university's mission of welcoming promising students from around the world.

wumma.wustl.edu/

ACADEMIC HONESTY

Students are expected to complete the problem sets, article critique, final projects and exams in accordance with Washington University in St. Louis' academic rules and regulations regarding honesty and integrity. Any evidence of academic misconduct, including **cheating, failure to cite sources, and/or plagiarism** will result in appropriate action as dictated by Washington University in St. Louis. Violations of academic honesty will result in notification to the Associate Dean of Academic Affairs at the Washington University School of Medicine, as

well as the to MPHS Director, Assistant Director(s), and Program Committee. Any hint of violation during an examination or in a written assignment will result in no grade for the exam/assignment. For more information see the [University's Student Academic Integrity Policy](#).

CANVAS

We will use Canvas to manage our class, access assignment instructions and post course-related questions. Canvas can be accessed at <https://hellocanvas.wustl.edu/>. Login with your WUSTLKey and Introduction to Epidemiology should appear on the homepage.

- All updates and reminders will be posted on Canvas.
- Lecture notes and additional readings and assignment instructions will be posted on Canvas throughout the semester.

We may utilize the Discussion threads for general questions related to lectures and assignments. Students should post all general questions that may be relevant to others in class to the Discussion thread. **Student-specific questions (e.g. related to a grade or exam conflict) should be emailed directly to the instructors.** Every effort will be made to answer student emails within 48-hours (excluding weekends). **Students are encouraged to post materials related to class (e.g. link to a news story) on Canvas for the rest of the class to access.**