



Part 1: Course Information

Academic Year	Fall 2022
Course	KINE 270
Course Title	Foundations of Epidemiology
Faculty	Carrie B. Dolan, PhD Department of Kinesiology William & Mary cbdolan@wm.edu Office: Adair 112
Teaching Assistants	<p>This course is divided into four modules. Each module has a Teaching Assistant (TA) who has demonstrated superior performance, commitment, and ability in this course. The TAs will help me map out learning strategies and are available to you as a resource for questions.</p> <p>Approach TA: Emma Manclark eemanclark@wm.edu and Aubree Musicant agmusicant@wm.edu Studies TA: Lilly McClendon lmccclendon@email.wm.edu Surveillance TA: Nick Park nkpark@email.wm.edu Policy TA: Mari Anzola-Schnell mbanzolaschnel@wm.edu</p>
Office Hours	<p>Tuesday 1-2 PM Thursday 1-2 PM</p> <p>Please do not email me directly to schedule either regular office hours. Simply use the online book system to make a 15-minute appointment that works for you. In the comments section of the appointment invitation, please let me know the topic for the meeting and any relevant questions so that I am prepared for our discussion. If you cannot make the available times due to class or work conflicts, please reach out and check our schedules for a time that works.</p> <p>Although I plan my schedule to be available on Tuesdays and Thursdays from 1-2, I will not necessarily be in my office, if there are no appointments scheduled. I am here to help you succeed and look forward to seeing you this semester! Please do reach out. Schedule a Meeting at my bookings' link (in case hyperlink doesn't work: https://outlook.office365.com/owa/calendar/CarrieDolansBookingCalendar@wmedu.onmicrosoft.com/bookings/)</p>
Required Text	<p>Gordis, Leon (2019). <i>Epidemiology 6th Edition</i>. Philadelphia: Elsevier Saunders. ISBN-13: 978-0323552295</p> <p>It is strongly recommended that you purchase a new text so that you can register online for Student Consult. This online resource, which has proven very valuable to students, contains more than 100 exam practice questions with a multiple-choice format. The rationale for the correct answer is fully explained.</p> <p>Other assigned readings and class resources will be provided through Blackboard.</p>



Course Information	Face to Face meetings: Thursdays 11-12:20 Location: Tucker Hall 127A
Credit Hours	3.0 This course follows the Federal Government's Credit Hour definition: "An amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalence that reasonably approximates no less than: <ol style="list-style-type: none">1. One hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately 15 weeks for one semester or trimesters hour of credit, or 10 to 12 weeks of a one-quarter hour of credit, or the equivalent amount of work over a different amount of time; or2. At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution, including laboratory work, internships, practical, studio work, and other academic work leading to the award of credit hours."
Course Context	This course follows a flipped learning approach . Flipping a course refers to moving content delivery to an asynchronous format for students to consume independently. In-class time is dedicated to learning activities such as application, extension, review, and collaboration. In essence, this kind of rotation provides flexibility in allocating time and the locations in which learning activities occur. In class and out of class requirements are as follows: <ul style="list-style-type: none">• In-class requirements: A weekly, 80 minute, in-class meeting in Tucker 127A where we review the weekly assigned material. These face-to-face meetings will be on Thursdays from 11-12:20.• Out-of-class requirements: Outside of class, students are required to submit assigned readings, watch videos, submit conceptual exercises and online homework assignments as outlined in part 4 of this syllabus. The total time required per week is a minimum of 9 hours. The context and syllabus for this course was developed using: Linder, Kathryn E. <i>The blended course design workbook: A practical guide</i> . Stylus Publishing, LLC, 2016. Thanks, Kathryn and the Studio for Teaching and Learning Innovation (STLI)!
Mode of Study	Announcements, readings, and supplementary materials will be available on Blackboard. Check-in regularly to keep up to date on the latest course information. Assignments should be submitted directly to Blackboard. Please do not email assignments directly to me. If you do, they will not make it to Blackboard and will not be graded. Student grades will be posted in the grade center on Blackboard.



Important W&M Dates	The course begins: 9/1 Add/drop deadline: 9/12 Fall break: 10/13-16 Withdraw deadline: 10/31 Last day of classes: 12/9 Final exam: 12/16 2-5 PM
Last Revised	August 2022

Part 2: Course Goals and Learning Objectives

Course Objective	At the completion of this course, students will have demonstrated the ability to use essential epidemiology tools and methods to quantify disease risk.
Duration	The course will be divided into four modules: 1. The epidemiologic approach 2. Analytic studies 3. Public health surveillance 4. Policy development
Learning Objectives	By the end of module 1, the student will calculate disease frequency and association measures. (chapters 1, 2, 3, 4, 12, 13) By the end of module 2, the student will demonstrate a basic understanding of epidemiologic study design (chapters 14, 10, 11, 8, 7, 9) By the end of module 3, the student will differentiate between diagnostic and screening tools (chapter 5) By the end of module 4, the student will recognize the influence of bias and describe the influence of bias on health policy (chapters 15, 19)

Part 3: Grading and Course Policies

Each module will consist of three types of evidence. The first type of evidence is diagnostic evidence, which is reflective and designed to gauge what you already know (or don't know). The second is formative evidence that indicates how your learning is developing. The third is summative evidence that determines your mastery of the skills and concepts in the course. This evidence will be combined with a final exam that will ultimately result in your final grade.

Graded Course Activities:

- **Reflections (Diagnostic evidence):** There will be four reflection assignments to encourage students to engage more deeply in the class material and connect to each module's objectives and individual life experiences with the course material. The reflection prompts are open-ended, with the format being determined by the student. Examples include essays and creative products: slideshows, sonnets, maps, drawings, videos, even sculptures. Reflections will be given a grade of 1 (25%) to 4 (100%): (4) inspired, (3) clever, (2) meets expectations, and (1) needs improvement. I anticipate the majority of comments will receive a score of (2) or (3) with fewer scores of (4) and (1).
- **Review Questions (Formative evidence):** There are nine sets of review questions. These review questions are a subset of the questions included in your textbook or the supplemental material associated with the textbook. You will have three opportunities to answer the same set of questions, with the highest grade being recorded as your final grade for each of these assignments. Students are STRONGLY encouraged



to work independently on review question solutions to have a good understanding of what you do not fully understand. If you decide to work collaboratively, each student must submit his/her answers on Blackboard by the due date and time to obtain credit.

- **Problem Sets (Formative evidence):** There are nine problem sets. These problem sets build on your review questions. You will have three opportunities to answer the same set of questions, with the highest grade being recorded as your final grade for each of these assignments. Students are STRONGLY encouraged to work collaboratively on problem set solutions to help each other learn any material that still might be challenging. However, each student must submit his/her answers on Blackboard by the due date and time to obtain credit.
- **Module Exams (Summative evidence):** Tests for Modules 1-3 will be multiple-choice questions and cover all material in required readings, lectures, and class discussions. The tests are an open book. Take them anywhere you want, but they are given an 80-minute time limit. Once you open the exam, you will need to complete it fully. You cannot start the exam and come back to it later. The summative evidence for module 4 is best collected in a 500-800 word policy brief.
- **Final Exam (Summative evidence):** The material in the course builds from learning introductory concepts to applying those concepts to global health policy. Therefore, the final is cumulative. The final exam will be multiple-choice questions and cover all required readings, lectures, and class discussions. The final is an open book. Take it anywhere you want, but a 3-hour time limit is given. Once you open the exam, you will need to complete it fully. You cannot start the exam and come back to it later.
- **Attendance:** Regular attendance at class is essential for the mastery of course material. Roll will be taken via Blackboard so you must bring your mobile phone, laptop or tablet to class in order to be counted as present. More than two unexcused absences will result in loss of class participation points. Only bona fide illness, family emergencies certified by the Dean, and college-sponsored academic or athletic competitions would constitute an excused absence.

<i>Activity</i>	<i>Contribution to Final Grade</i>
Reflections	15%
Review Questions	10%
Problem Sets	15%
Module Exams	25%
Final Exam	25%
Attendance	10%

Late Work Policy (Life Token)

Life happens. You have one life token for a no-questions-asked deadline extension for up to 1 week on all assignments. Unfortunately, you cannot use a life token on a test. Let me know when you are using a life token. Just an email saying, "Hey Professor Dolan, I am using a life token on x assignment," will suffice.

Grading Scale

Late assignments that do not use a life token will not be accepted. A standard grading scale will be employed to determine the final course grade:

A	>93
A-	90-92.9
B+	87-89.9
B	83-86.9
B-	80-82.9
C+	77-79.9
C	73-76.9
C-	70-72.9



D	60-69.9
F	<60

Viewing Grades in Blackboard

All grades will be available via the Grade Center on Blackboard. I reserve the right to make grade book corrections to keep it consistent with the syllabus so that your grade reflects performance, not software or user error. If you see something that does not make sense, please alert me. Thank you for your help.

Honor Code

Do not cheat! The College of William & Mary has had an honor code since at least 1779, and I am the Honor Council representative for Health Sciences. Academic integrity is at the heart of the university, and we all are responsible for upholding the ideals of honor and integrity. The student-led honor system is responsible for resolving any suspected violations of the Honor Code, and I will report all suspected instances of academic dishonesty to the honor system. The Student Handbook (www.wm.edu/studenthandbook) includes your responsibilities as a student and the complete Code. Your full participation and observance of the Honor Code are expected. To read the Honor Code, see www.wm.edu/honor

University Events

Recognized student organizations provide an opportunity for students to become engaged citizens. As part of my commitment to being an engaged faculty member I like to support these organizations by attending sporting events, choral, stage or dance performances, art exhibits, debates, sketch comedy performances, carnivals, and the list continues. If there is an opportunity for me to attend one of your events please let me know through email or after class. When possible, I make every effort to attend and see how you are helping create an engaging learning environment for all of us.

ADA accommodations at W&M

It is the policy of William and Mary to accommodate students with disabilities and to qualify for diagnosed conditions following federal and state laws. Any student who feels s/he may need an accommodation based on the impact of a learning, psychiatric, physical, or chronic health diagnosis should contact Student Accessibility Services staff at 757-221-2509 or sas@wm.edu to determine if accommodations are warranted and to obtain an official letter of accommodation. For more information, please visit <http://www.wm.edu/sas>

Diversity Plan

The Department of Kinesiology & Health Sciences is committed to supporting a diverse and inclusive environment. To advance that commitment in concrete ways, the Department adopted a diversity and inclusion plan <https://www.wm.edu/as/kinesiology/diversity-plan/index.php>

Mental and Physical Well-Being

William & Mary recognizes that students juggle different responsibilities and face challenges that make learning difficult. Asking for help is a sign of courage and strength. Many resources are available at W&M to help students navigate emotional/psychological, physical/medical, material/accessibility concerns. If you or someone you know is experiencing any of these challenges, we encourage you to reach out to the following offices:

- The W&M Counseling Center at (757) 221-3620. Services are free and confidential.
- The W&M Health Center at (757) 221-4386
- For additional support or resources & questions, contact the Dean of Students at 757-221-2510

Part 4: Topic Outline/Schedule

Before each in-class meeting, you are expected to:

- Complete all relevant readings
- Submit all required assignments



The term 'Before' is defined as 'Before class,' which means before 11:00 AM on the assigned date.

Date	Assignment
MODULE 1: The Epidemiologic Approach	
Week 1: 9/1, Thursday	First in class meeting: Before class, Submit the two tasks outlined in the 'Start Here' module located on Blackboard
Week 2: Before 9/8 9/8, Thursday 9/9, Friday	Read: Chapters 1 (Introduction) and Chapter 2 (The Dynamics of Disease Transmission) Skim: Brody, Howard, Michael Russell Rip, Peter Vinten-Johansen, Nigel Paneth, and Stephen Rachman. "Map-making and myth-making in Broad Street: the London cholera epidemic, 1854." <i>The Lancet</i> 356, no. 9223 (2000): 64-68. Watch: John Snow video Watch: The logic behind isolation Submit: Review questions #1 for Chapter 2 Submit: Reflection #1: How does what we learn intersect with other fields of study? In-class meeting on Chapters 1 (Introduction) and Chapter 2 (The Dynamics of Disease Transmission) Submit: Problem set 1 by 11:59 PM
Week 3: Before 9/15, Thursday 9/15, Thursday 9/16, Friday	Read: Chapters 3 (Morbidity) and Chapter 4 (Mortality) Watch: Incidence and Prevalence videos (there are two videos posted to BB) Watch: Mortality rates-The Nuts and Bolts Watch: Direct Age Adjustment Submit: Review questions #2 for chapters 3 and 4 In-class meeting Chapters 3 (Morbidity) and Chapter 4 (Mortality) Submit: Problem set 2 by 11:59 PM
Week 4:	



Before 9/22, Thursday	Read: Chapters 12 (Estimating risk) and Chapter 13 (More on risk) Watch: Measures of association video (this is a long one) Submit: Review questions #3 for chapters 12 and 13
9/22, Thursday	In-class meeting Chapters 12 (Estimating risk) and Chapter 13 (More on risk)
9/23, Friday	Submit: Problem set 3 by 11:59 PM
Before 9/27, Tuesday	Submit Module 1 Exam. This exam will be released on Friday, 9/23 at 11:59 PM.
MODULE 2: Analytic Studies	
Week 5: Before 9/29, Thursday	Read: Chapter 14 (From association to causation) Read: Emily Oster Blog Post Welcome to Econ 1430! - by Emily Oster - ParentData (substack.com) Watch: How to read an academic journal (Parts 1 and 2) Submit: Review questions #4 for chapter 14 Submit: Reflection #2: What does the term "fake news" mean to you?
9/29, Thursday	In-class meeting on Chapter 14 (From association to causation)
9/30, Friday	Submit: Problem set 4 by 11:59 PM
Week 6: Before 10/6, Thursday	Read: Chapter 10 (RCT) and Chapter 11 (RCT) Skim: Study Design 101 RCT Randomized Controlled Trial - Study Design 101 (gwu.edu) Skim: Behrman, Jere R., Piyali Sengupta, and Petra Todd. "Progressing through PROGRESA: An impact assessment of a school subsidy experiment in rural Mexico." <i>Economic development and cultural change</i> 54, no. 1 (2005): 237-275. Watch: RCT video Submit: Review questions #5 for chapters 10 and 11
10/6, Thursday	In-class meeting on Chapters 10 and 11 (RCT)
10/7, Friday	Submit: Problem set 5 by 11:59 PM



10/13	FALL BREAK
Week 7: Before 10/20, Thursday 10/20, Thursday 10/21, Friday	Read: Chapter 8 (Cohort) and Chapter 7 (Observational), then read Chapter 9 (Comparing Cohort and Case-Control) Skim: Study Design 101 Cohort Cohort Study - Study Design 101 (gwu.edu) Skim: Study Designs 101 Case-Control Case-Control - Study Design 101 (gwu.edu) Watch: Cohort and Case-Control video Submit: Review questions #6 for chapters 8, 7, and 9 In-class meeting on Chapter 8 (Cohort) and Chapter 7 (Observational), and Chapter 9 (Comparing Cohort and Case-Control) Submit: Problem set 6 by 11:59 PM
Week 8: Before 10/27, Thursday 10/27, Thursday	Submit: Mid-term evaluation In-class meeting on Study Designs
Before 11/1, Tuesday	Submit Module 2 Exam. This exam will be released on Friday, 10/29, at 11:59 PM
MODULE 3: Public Health Surveillance	
Week 9: Before 11/3, Thursday 11/3, Thursday 11/4, Friday	Read: Chapter 5 pages 94-99 (Validity and Reliability of Screening Tests). Stop reading before 'Use of Multiple Tests' Watch: Sensitivity and Specificity Video Submit: Review questions #7 for Chapter 5 part 1 Submit: Reflection #3: The demand for COVID-19 tests again outpaces the supply as schools reopen. Who should be tested and why? In-class meeting on Chapter 5 part 1 Submit: Problem set 7 by 11:59 PM
Week 10: Before 11/10, Thursday	Read: Chapter 5 pages 99-end (Validity and Reliability of Screening Tests). Start reading at 'Use of Multiple Tests'



11/10, Thursday	<p>Watch: Positive Predictive Value video</p> <p>In-class meeting on Chapter 5 part 2 (Validity and Reliability of Screen Tests)</p>
<p>Week 11: Before 11/17, Thursday</p> <p>11/17,, Thursday</p> <p>11/18, Friday</p>	<p>Submit: Review questions #8 for Chapter 5 part 2</p> <p>In-class meeting on Chapter 5 part 2 (Validity and Reliability of Screen Tests)</p> <p>Submit: Problem set 8 by 11:59 PM</p>
Before 11/22, Tuesday	Submit Module 3 Exam. This exam will be released on Friday, 11/18, at 11:59 PM
11/24	FALL BREAK
MODULE 4: Policy Development	
<p>Week 12: Before 12/1, Thursday</p> <p>12/1, Thursday</p> <p>12/2, Friday</p>	<p>Read: Chapter 15 (Bias, Confounding, Interaction)</p> <p>Watch: Confounding and Bias Simplified</p> <p>Skim: Kumar, Gunjan, and Anita Shankar Acharya. "Biases in epidemiological studies: How far are we from the truth?." <i>Indian Journal of Medical Specialities</i> 5, no. 1 (2014): 29-35.</p> <p>Submit: Review questions #9 for Chapter 15</p> <p>In-class meeting on Chapter 15 (Bias, Confounding, Interaction)</p> <p>Submit: Problem set 9 by 11:59 PM</p>
<p>Week 13: Before 12/8, Thursday</p>	<p>Read: The process of Health Policymaking</p> <p>Read: How to write a health policy brief How to Write a Health Policy Brief (apa.org)</p> <p>Skim: Yamey, Gavin, and Richard Feachem. "Evidence-based policymaking in global health—the payoffs and pitfalls." <i>BMJ Evidence-Based Medicine</i> 16, no. 4 (2011): 97-99.</p> <p>Skim: Kaiser Family Foundation Coronavirus (COVID-19) KFF</p> <p>Submit: Upload a DRAFT outline of your policy brief. This outline should follow the four steps outlined in the assigned reading: How to Write a Health Policy Brief (apa.org)</p>



<p>12/8, Thursday</p> <p>12/9, Friday</p>	<p>In-class meeting on Health Policy</p> <p>Submit: Module 4 Exam. The purpose of this exam is to develop a policy brief that can be used to advocate for a public health issue. The brief is a “leave behind” kind of document designed to draw attention to the action or policy change you are suggestion. I encourage you to be creative in making your brochure.</p> <p>Use the Hemingway Editor to learn how to write more clearly. Aim for a grade 8–10 reading level in what you write. Avoid jargon. Write shorter, simpler sentences on average. Use the active voice most of the time. Some long sentences and complex phrases or words are going to be necessary, but learn to use them sparingly.</p> <p>The exam for this module is your final policy brief. Select a recent or current health policy issue (it can be global or domestic) and do the following:</p> <ul style="list-style-type: none">• Define the problem• State the policy• Make your case• Discuss the impact• Include your sources and cite them in MLA format. Sources are necessary. It increases your credibility and lets your audience know you did you due diligence to include relevant information
<p>Final Exam:</p> <p>12/16</p>	<p>Submit: Final exam due at 5PM. The final exam will be launched on Friday, 12/9. It is due on 12/16 at 5PM. There are no exceptions to this deadline without approval from the Dean of Students office.</p>