

# Syllabus: Fundamentals of Epidemiology (PH2610/HED395)

PH 2610 – UT Health Science Center - Houston, School of Public Health

HED395 - UT Austin, Department of Kinesiology and Health Education

Feature	Considerations
<b>Instructor &amp; TA Information</b>	<b>Instructors</b> <ul style="list-style-type: none"><li>Harold W. (Bill) Kohl, PhD, MSPH Austin Regional Campus SPH Department of Kinesiology and Health Education 1616 Guadalupe Street, Suite 6.300 Austin, TX 78701 <a href="mailto:Harold.W.Kohl@uth.tmc.edu">Harold.W.Kohl@uth.tmc.edu</a> (512) 391-2520 @billkohl</li><li>Anna V. Wilkinson, PhD Austin Regional Campus SPH 1616 Guadalupe Street, Suite 6.300 Austin, TX 78701 <a href="mailto:Anna.V.Wilkinson@uth.tmc.edu">Anna.V.Wilkinson@uth.tmc.edu</a> (512) 391-2526</li></ul> <b>Teaching Assistants</b> <p>Nicole Niksic, MPH Austin Regional Campus SPH 1616 Guadalupe Street, Suite 6.300 Austin, TX 78701 <a href="mailto:Nicole.E.Nicksic@uth.tmc.edu">Nicole.E.Nicksic@uth.tmc.edu</a></p> <p>Cassandra (Casey) Enyeart Austin Regional Campus SPH 1616 Guadalupe Street, Suite 6.300 Austin, TX 78701 <a href="mailto:Cassandra.B.Enyeart@uth.tmc.edu">Cassandra.B.Enyeart@uth.tmc.edu</a></p> <p><b>Virtual Office Hours:</b> Wednesdays from 12pm- 1pm. The link to enter the weekly office hours is available on BlackBoard under the <i>Syllabus Tab</i>. To enter the meeting, please login as a “guest” using your FULL NAME. E-mail is also a good way to communicate with the teaching team.</p>

<p><b>Course Description</b></p>	<p><b>PH2610/HED395: Fundamentals of Epidemiology</b></p> <p>This is the Spring, 2014 offering of the course. It is worth 3 credit hours. It is an on-line course. It is open to students in all SPH Campuses and UT-Austin graduate students.</p> <hr/> <p>Epidemiology is the study of the distribution and determinants of disease, or other health-related outcomes, in human populations. It is the basic science of public health. As such, it is a research method or tool often used in public health. This course is an introduction to the fundamentals of epidemiology. It is designed for students who are currently enrolled, or intending to enroll, in one of the graduate programs (e.g., Certificate, MPH, or MS) the School of Public Health offers, or for students enrolled in the UT Health Education program, not presently majoring in epidemiology. These students are typically those who do <i>not</i> intend to major in Epidemiology (though, after this course, some go on to!).</p> <p>The format of this course in epidemiology is somewhat different than what you would usually experience in a classroom setting in graduate school. The course is organized into a series of modules. Each module focuses on an important topic in epidemiology and lasts one week. In each module, you are asked to (a) view an audiovisual presentation(s); and (b) complete readings from your textbook and/or other on-line resources. In addition, you will (c) complete a set of critical learning exercises (i.e., homework); and (d) participate in a discussion on-line. The latter are meant to provide you with opportunities to apply the knowledge you gain through more traditional means you are used to (e.g., lectures, readings).</p> <p>By completing these modules, you should acquire a sound understanding of many of the basic concepts and principles of epidemiology. You will have many opportunities to apply your new knowledge and skills, as well. There are no pre-requisites/co-requisites (i.e., classes you need to have completed before enrolling) for this course. Please be aware, however, that the format of this course will require time and extra self-discipline – more than a typical classroom-based course alone might. We ask that you commit at least 4-6 hours per week to your studies for this class.</p>
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<b>Textbook and Materials</b>	<p><b><i>Epidemiology for Public Health Practice</i></b>  Friis &amp; Sellers (2013); 5th edition  You can purchase this textbook on-line (e.g., <a href="http://www.amazon.com">www.amazon.com</a>).</p> <p><b><i>Morbidity and Mortality Weekly Report</i></b>  All students enrolled in this course are required to subscribe to the weekly CDC publication <i>Morbidity and Mortality Weekly Report</i>. This is a free electronic subscription that will appear in your inbox weekly. For instructions on how to subscribe, click <a href="http://www.cdc.gov/mmwr">http://www.cdc.gov/mmwr</a>.</p>
<b>Course Expectations</b>	<p>Through this course, you should acquire a sound understanding of many of the basic concepts and principles of epidemiology. You will have many opportunities to apply your new knowledge and skills, as well. There are no pre-requisites/co-requisites (i.e., classes you need to have completed before enrolling) for this course. Please be aware however that the format of this course will require time and some self-discipline – more than a typical classroom-based course alone might. <b>We ask that you commit <i>at least 4-6 hours per week to study for this course.</i></b></p>
<b>Course Learning Objectives</b>	<p>For students at the School of Public Health, this course is designed to meet the Epidemiology component of the MPH competencies and to meet several of the cross-cutting competencies as listed below:</p> <p><u>MPH competencies: epidemiology</u></p> <ol style="list-style-type: none"> <li>1. Identify key sources of data for epidemiological purposes.</li> <li>2. Identify the principles and limitations of public health screening programs.</li> <li>3. Describe a public health problem in terms of magnitude, person, time and place.</li> <li>4. Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.</li> <li>5. Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use, and dissemination of epidemiologic data.</li> <li>6. Apply the basic terminology concepts, definitions, and study design to public health practice and research.</li> <li>7. Calculate basic epidemiology measures.</li> <li>8. Communicate epidemiologic information to lay and professional audiences.</li> <li>9. Draw appropriate inferences from epidemiologic data.</li> <li>10. Evaluate the strengths and limitations of epidemiologic reports.</li> </ol> <p><u>MPH competencies: cross-cutting</u></p>

11. Explain how biology (human and pathogen) fits into the ecological model of population health
12. Discuss sentinel events in the history and development of the public health profession and their relevance for practice in the field.
13. Analyze determinants of health and disease using an ecological framework.
14. Analyze the potential impacts of legal and regulatory environments on the conduct of ethical public health research and practice.

As noted above, this course is divided into a series of modules. The learning objectives for each of these modules are provided below. These learning objectives are designed to meet all the core competencies for epidemiology.

**MODULE 1 – *An introduction to epidemiology***

**Upon completing this module, students will be able to ...**

Define epidemiology, its key components, and its sub-disciplines  
 Discuss the genesis of epidemiology from a historical perspective  
 Identify practical and contemporary applications of epidemiology

**MODULE 2 – Describing a public health problem – Part 1**

**Upon completing this module, students will be able to ...**

Discuss dynamics of disease progression and approaches to prevention  
 Describe a public health problem in terms of person, place, and time  
 Define and differentiate between counts, ratios, proportions, and rates  
 Define/calculate key measures of frequency (e.g., prevalence, incidence)

**MODULE 3 – Describing a public health problem – Part 2**

**Upon completing this module, students will be able to ...**

Define/calculate key measures of frequency (e.g., prevalence, incidence)  
 Differentiate between and calculate crude, specific, and adjusted rates  
 Define surveillance and identify its important relationship with public health

**MODULE 4 – Measuring a public health problem**

**Upon completing this module, students will be able to ...**

Define key concepts relevant to measurement (e.g., validity, reliability)  
 Discuss key concepts relevant to screening (e.g., sensitivity, specificity)  
 Identify principles and key limitations of screening programs for disease

**MODULE 5 – Analyzing a public health problem – Part 1**

**Upon completing this module, students will be able to ...**

Explain the concept of “risk” from lay and scientific perspectives

	<p>Formulate a research question and a hypothesis for use in studies</p> <p>Briefly describe study designs often used in epidemiologic research</p> <p>Recognize key issues relevant to data collection and data analysis</p> <p><b>MODULE 6 – Analyzing a public health problem – Part 2</b></p> <p><b>Upon completing this module, students will be able to ...</b></p> <p>Identify simple criteria to draw causal inference (e.g., Bradford Hill)</p> <p>Identify more complex criteria to draw causal inference (e.g., causal pies)</p> <p>Differentiate between random and non-random sources of error</p> <p>Identify and define key sources of bias (e.g., selection, information)</p> <p>Define and assess confounding and effect modification (i.e., interaction)</p> <p><b>MODULE 7 – Design and analysis: outbreak investigations</b></p> <p><b>Upon completing this module, students will be able to ...</b></p> <p>Recognize and describe important components of this type of study</p> <p>Define/calculate appropriate measure(s) of frequency for this study</p> <p>Define/calculate appropriate measure(s) of association for this study</p> <p>Identify issues relevant to causal inference from this type of study</p> <p>Identify advantage(s) and disadvantage(s) inherent in this type of study</p> <p>Assess and interpret the results of a current/historic study of this type</p> <p><b>MODULE 8 – Design and analysis: ecologic studies</b></p> <p><b>Upon completing this module, students will be able to ...</b></p> <p>Recognize and describe important components of this type of study</p> <p>Define/calculate appropriate measure(s) of frequency for this study</p> <p>Define/calculate appropriate measure(s) of association for this study</p> <p>Identify issues relevant to causal inference from this type of study</p> <p>Identify advantage(s) and disadvantage(s) inherent in this type of study</p> <p>Assess and interpret the results of a current/historic study of this type</p> <p><b>MODULE 9 – Design and analysis: cross-sectional studies</b></p> <p><b>Upon completing this module, students will be able to ...</b></p> <p>Recognize and describe important components of this type of study</p> <p>Define/calculate appropriate measure(s) of frequency for this study</p> <p>Define/calculate appropriate measure(s) of association for this study</p> <p>Identify issues relevant to causal inference from this type of study</p> <p>Identify advantage(s) and disadvantage(s) inherent in this type of study</p> <p>Assess and interpret the results of a current/historic study of this type</p> <p><b>MODULE 10 – Design and analysis: case-control studies</b></p> <p><b>Upon completing this module, students will be able to ...</b></p> <p>Recognize and describe important components of this type of study</p> <p>Define/calculate appropriate measure(s) of frequency for this study</p> <p>Define/calculate appropriate measure(s) of association for this study</p> <p>Identify issues relevant to causal inference from this type of study</p> <p>Identify advantage(s) and disadvantage(s) inherent in this type of study</p>
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	<p>Assess and interpret the results of a current/historic study of this type</p> <p><b>MODULE 11 – Design and analysis: cohort studies</b>  <b>Upon completing this module, students will be able to ...</b>  Recognize and describe important components of this type of study  Define/calculate appropriate measure(s) of frequency for this study  Define/calculate appropriate measure(s) of association for this study  Identify issues relevant to causal inference from this type of study  Identify advantage(s) and disadvantage(s) inherent in this type of study  Assess and interpret the results of a current/historic study of this type</p> <p><b>MODULE 12 – Design and analysis: experimental trials</b>  <b>Upon completing this module, students will be able to ...</b>  Recognize and describe important components of this type of study  Define/calculate appropriate measure(s) of frequency for this study  Define/calculate appropriate measure(s) of association for this study  Identify issues relevant to causal inference from this type of study  Identify advantage(s) and disadvantage(s) inherent in this type of study  Assess and interpret the results of a current/historic study of this type</p> <p><b>MODULE 13 – Applying epidemiology: policies and programs</b>  <b>Upon completing this module, students will be able to ...</b>  Recognize key surveillance systems used in the U.S. and worldwide  Recognize Healthy People 2020 goals and their relation to surveillance  Consider important ethical issues relevant to studies in epidemiology</p>
<b>List of Topics</b>	The list of topics that will be covered in this course is detailed above for each Module.
<b>Learning Activities</b>	The format of this course in epidemiology is somewhat different than what you would usually experience in a classroom setting in graduate school. The course is organized into a series of modules. Each module focuses on an important topic in epidemiology and lasts one week. In each module, you shall be asked to (a) view an audiovisual presentation(s); (b) complete readings from your textbook and/or other on-line resources; (c) complete a set of critical learning exercises; and (d) participate in an online discussion board. The latter activities are meant to provide you with ample opportunities to apply the knowledge you gain through more traditional means you might be used to (e.g., lectures and readings).

<b>Student Assessment And Grading Criteria</b>	<p>This course is graded according to the assignments given throughout the semester. There are five types of these assignments. Your final grade shall be calculated using the following weights – mid-term exam (25%), final exam (25%), learning exercises (25%), and a discussion board (25%). All grades will be aligned according to the following guidelines – A (90-100), B (80-89), C (75-79), or F (&lt; 75). Note that late work will <i>not</i> be accepted. Special circumstances (e.g., a death in the family) will be considered case by case by the instructor. More information about the exams, learning exercise, and discussion board will be provided in separate documents.</p>
<b>Prerequisites and/or Technical Requirements</b>	<p>There are no prerequisites for this course. As noted above, the course is designed, at present, for students enrolled in the UTSPH MPH or Certificate programs, and the UT Health Education program, not presently majoring in epidemiology (though, after the course, some go on to do so!). Non-degree seeking students are also allowed.</p> <p>This course will rely exclusively on the UTHSC Blackboard System, which can be found at <a href="http://bb.uth.tmc.edu">http://bb.uth.tmc.edu</a>. This course will be one of the courses seen on your welcome page as you log into Blackboard. All course materials will be accessed from within this site. Please make sure you have the necessary computer hardware and software to access Blackboard. If you are using a Mac, you should be using the OS X operating system. If you are using a PC, your Internet Explorer should be version 6.5 or later. Students will be required to view lectures on-line. These lectures will be provided on Blackboard, as a Windows Media File (*.wmv), with audio. There is one module in this course that requires access to Internet Explorer (exclusively), thus you will need to be able to access a PC for this module.</p>

<b>University of Texas Health Science Center – Houston Policies and Procedures</b>	<p>Regular participation is an important part of the course. Students are expected to devote at least 4-6 hours per week completing the course.</p> <p>The University of Texas Health Science Center - Houston policy on academic integrity can be found in the HOOP and on the website version of this syllabus. Penalties will be applied for scholastic dishonesty, including adjustment of course grade, and potential failure of the course. The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community. Cheating of any kind will result in a failing grade for the course. Plagiarism of any kind will also result in a failing grade for the course. More information about what defines plagiarism can be found in the orientation materials for incoming SPH students. Students can use the Safe Assign software available on Blackboard to detect and correct plagiarism. Faculty will use this tool, also.</p> <p>If you have a learning disability, sensory, or physical disability or any other impairment, or if English is your second language and you may need special assistance in lecture, reading assignments, and/or testing, please let the instructors or teaching assistants know, so they can accommodate.</p> <p>Further information about withdrawal dates, incomplete grades, academic dishonesty, and other relevant policies can be found in the catalog for SPH.</p>
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<p><b>University of Texas Policies and Procedures</b></p>	<p><b>University of Texas Honor Code</b></p> <p>The core values of The University of Texas at Austin are learning, discovery, freedom, leadership, individual opportunity, and responsibility. Each member of the university is expected to uphold these values through integrity, honesty, trust, fairness, and respect toward peers and community.</p> <p><b>Plagiarism</b></p> <p>Plagiarism is a serious violation of academic integrity. In simplest terms, it occurs when you represent any material from another source as your own, regardless how or where you acquired it. Using verbatim material without proper attribution constitutes the most blatant form of plagiarism. However, other types of material can be plagiarized as well, such as ideas drawn from an original source or even its structure. Plagiarism can be committed intentionally or unintentionally, what is important is that your instructors should be able to clearly identify which materials are your own and which originated with other sources. For more information, visit <a href="http://deanofstudents.utexas.edu/sjs/scholdis_plagiarism.php">http://deanofstudents.utexas.edu/sjs/scholdis_plagiarism.php</a></p> <p><b>Use of E-Mail for Official Correspondence to Students</b></p> <p>Email is recognized as an official mode of university correspondence; therefore, you are responsible for reading your email for university and course-related information and announcements. You are responsible to keep the university informed about changes to your e-mail address. You should check your e-mail regularly and frequently—I recommend daily, but at minimum twice a week—to stay current with university-related communications, some of which may be time-critical. You can find UT Austin’s policies and instructions for updating your e-mail address at <a href="http://www.utexas.edu/its/policies/emailnotify.php">http://www.utexas.edu/its/policies/emailnotify.php</a>.</p> <p><b>Special Accommodations for Students with a Disability</b></p> <p>Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities at (512) 471-6259, VP: (512) 232-2937, or <a href="http://www.utexas.edu/diversity/ddce/ssd/">http://www.utexas.edu/diversity/ddce/ssd/</a></p> <p><b>Religious Holidays</b></p> <p>By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, or an assignment in order to observe a religious holy day, I will give you an opportunity to complete the missed work within a reasonable time after the absence.</p>
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	<p><b>Behavior Concerns Advice Line (BCAL)</b>  If you are worried about someone who is acting differently, you may use the Behavior Concerns Advice Line to discuss by phone your concerns about another individual's behavior. This service is provided through a partnership among the Office of the Dean of Students, the Counseling and Mental Health Center (CMHC), the Employee Assistance Program (EAP), and The University of Texas Police Department (UTPD). Call 512-232-5050 or visit <a href="http://www.utexas.edu/safety/bcal">http://www.utexas.edu/safety/bcal</a>.</p> <p><b>Emergency Evacuation Policy</b>  Occupants of buildings on the UT Austin campus are required to evacuate and assemble outside when a fire alarm is activated or an announcement is made. Please be aware of the following policies regarding evacuation: Familiarize yourself with all exit doors of the classroom and the building. Remember that the nearest exit door may not be the one you used when you entered the building. If you require assistance to evacuate, inform me in writing during the first week of class. In the event of an evacuation, follow my instructions or those of class instructors. Do not re-enter a building unless you're given instructions by the Austin Fire Department, the UT Austin Police Department, or the Fire Prevention Services office.</p> <p><b>Resources for Learning &amp; Life at UT Austin</b>  The University of Texas has numerous resources for students to provide assistance and support for your learning.  The Sanger Learning and Career Center: <a href="http://lifelearning.utexas.edu/">http://lifelearning.utexas.edu/</a>  Career Exploration Center:  <a href="http://www.utexas.edu/student/careercenter/">http://www.utexas.edu/student/careercenter/</a>  Counseling &amp; Mental Health Center: <a href="http://cmhc.utexas.edu/">http://cmhc.utexas.edu/</a>  Student Emergency Services:  <a href="http://deanofstudents.utexas.edu/emergency/">http://deanofstudents.utexas.edu/emergency/</a></p>
<b>Course Calendar</b>	<p>See separate document for course calendar.  Due dates for the midterm and final exams are listed there.</p>