

University of Florida
College of Public Health & Health Professions
PHC 6003: Epidemiology and Prevention of Chronic Disease and Disability (3 credit hours)
Spring 2020
Delivery Format: Classroom HPNP G-114 and Online E-Learning on CANVAS
Syllabus

Instructor Name: Thomas A Pearson MD, MPH, PhD

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Office Hours: By appointment with Mary Gipson, mary.gipson@ufl.edu, 352-294-5957

Graduate Assistants: Erta Cenko MSPH, ertacenko@ufl.edu

Preferred Course Communications: In class discussion supplemented by office visits. Email correspondence should copy both Dr. Pearson and Ms. Cenko to assure prompt response.

Prerequisites

Introductory Epidemiology Course preferred or by consent of instructor.

Course Overview

This course will focus on the distribution and determinants of major chronic diseases and their risk factors. Chronic diseases have been the leading cause of mortality for over 100 years and contribute to the majority of disability and health care visits in the US and the rest of the industrialized world. The list of individual chronic diseases of public health importance is extensive. This course will focus on conceptual and methodological issues related to the study of most chronic diseases. Cardiovascular disease will be the model for many of the epidemiologic examples used in this course, due to the extensive and established nature of its evidence base. The concepts and methods illustrated are pertinent to most other chronic diseases, and individual courses on their epidemiology can be taken for disease-specific content.

Course Objectives and/or Goals

1. To understand the multifactorial etiology and pathophysiology of chronic diseases.
2. To know the various epidemiologic study designs and their strengths/weaknesses in the study of etiology and natural history of chronic diseases.
3. To be able to define incident and prevalent cases of select chronic diseases, using traditional and clinical epidemiologic research methods.
4. To understand the concept of "risk factor" as it pertains to chronic diseases and the means to define them.
5. To be able to access the evidence base for interventions at the individual and community levels which reduce the risk of chronic disease incidence and mortality.
6. To understand how epidemiologic studies of chronic disease are translated into diagnosis, treatment and prevention programs and policies.
7. To be able to read, interpret, and critique published reports of epidemiologic studies of chronic disease.

Instructional Methods

1) **Lectures:** Generally each of the 14 three hour sessions will have one or two 45 minute lectures with an additional 15 minutes set aside for questions and discussions.

2) **Readings:** Assigned readings in the required textbook or published literature are intended to supplement the lectures. Additional readings may be added during the course.

3) Assignments:

a) In class discussion sessions. One hour sessions will require student preparation, namely reading of journal articles or use of tools in chronic disease epidemiology. The session will then require presentation by students of the material and engaged discussion of the content.

b) Take home essay tests. Two take home quizzes will be required but following their grading and review, will also be the topic of discussion.

c) Team presentations: In teams of 2-4 students, a twenty minute presentation will focus on a topic regarding a major chronic disease with ten minutes for questions and answers. The student teams will obtain preapproval of the topic by course director/graduate assistant and present an organized ten minute presentation, with hand-in of slides or text. These presentations will be carried out in the final four weeks of the course.

PHC 6003: Epidemiology of Chronic Disease and Disability Topical Outline/Course Schedule

| <i>Week/Date</i> | <i>Topic</i> | <i>Lecturer</i> | <i>Required Readings</i> | <i>Assignment</i> |
|-------------------------|---|---|---|---|
| Week 1 Jan 7 | A. Course Introduction B. Global Burden of Chronic Disease C. Biology of Chronic Disease: Atherosclerosis | Pearson/Student Introductions Pearson Pearson | Course Syllabus US Burden of Disease (1) Harris R., Chapter 1, 2 | - - - |
| Week 2 Jan 14 | A. Chronic Disease Surveillance B. Cardiovascular Disease by County C. Florida Population Databases and UF Libguide | Pearson - Meyer, Schaefer | Harris R., Chapter 3, 4, 5 JAMA (2) http://guides.uflib.ufl.edu/c.php?g=147290&p=966872 | - - Identify and discuss 3 Datasets in LibGuide |

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| Week 3 Jan 21 | A. Observational Studies of Chronic Disease B. Epidemiology of Coffee – Drinking C. Predictive Risk Evaluation: Lifetime Risk | Pearson Pearson Cenko | Framingham Heart Study (3) LaCroix (4) Lifetime risk (5) | - Critique discussion Calculate your lifetime risk of CVD |
| Week 4 Jan 28 | A. Randomized Clinical Trials B. Randomized trials C. Selection of Topic for Team Report | Pepine Pearson Cenko | CANTOS Trial (6) Harris R. (chapter relevant to team report) | Critique of RCT Identify team and topic |
| Week 5 Feb 4 | A. Family history and genetics B. Chronic Disease Pedigree C. Take home Essay #1 | Pearson Cenko Cenko | Genetic Epidemiology (9) CDC Family History Pedigree (10) | - Present Pedigree |
| Week 6 Feb 11 | A. Diet and Nutrition B. Epidemiology and Prevention of Neural Tube Defects C. Epidemiology of Chocolate | Pearson Rasmussen Pearson | US Dietary Guidelines, Chapter 1 (17) Zhong et al (18) | Collect and discuss take home essay Critique discussion Preparation for Valentine's day (2/14) |
| Week 7 Feb 18 | A. Physical Activity B. US Physical Activity Guidelines C. Team Project #5, #6 | Cenko Cenko Cenko | US Guidelines(16) Harris R., Chapters specific to student presentations | - Discussions of Guidelines - |

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|-----------------------------|---|--|---|--|
| Week 8 Feb 25 | A. Social Determinants of Health B. Precision Public Health C. Place Matters: UF Program in Precision Public Health | Vaddiparti Pearson Pearson | Khoury et al (11) | - Discussion |
| March 3 Spring Break | | | | |
| Week 9 March 10 | A. Tobacco B. Alcohol use C. Policy Exercise | Lopez-Quintero Pearson Pearson | Harris R., Chapter 13 AHA Guidelines | - - Development of Alcohol Guidelines/Policy |
| Week 10 March 17 | A. Obesity B. Diabetes/Pre-diabetes C. Diabetes Risk Calculator | Perri Donahoo Donahoo/ Pearson | Harris R., Chapter 42 Harris R., Chapter 41 Gurka et al (13) | Take Home Essay due - Calculating diabetes/CV risk |
| Week 11 March 24 | A. Lipid and Lipoprotein Disorders B. 2018 Cholesterol guidelines C. Take home essay #2 Team Report #3, #4 | Pearson Pearson Cenko/Pearson Cenko | AHA/ACC Guidelines(15) Harris R., Chapters specific to student presentations | Discussion of Guidelines Discussion of Take Home Essays Presentations and Discussion |
| Week 12 March 31 | A. Hypertension B. Hypertension guidelines C. Team Report #1,#2 | Cooper-Dehoff Cooper-Dehoff Cenko | Harris R., Chapter 10 AHA/ACC Guidelines (14) Harris R., Chapters specific to student presentations | Discussion Presentations and Discussion |

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|----------------------------|---|---|--|------------------------------|
| Week 13 April 7 | A. Community Intervention Trials B. Prevention of Heart Disease and Stroke at Community Level C. Evaluation of community interventions. | Pearson Pearson Pearson | AHA Community Guidelines (7) Franklin Co. Study (8) | - - Discussion |
| Week 14 April 14 | A. Inflammation and Related Conditions B. Prevention of Chronic Disease C. Team Project #5,#6 | Pearson Pearson - | AHA/CDC Guidelines (19) Harris R., Chapters specific to student presentations | - - - |
| Week 15 April 21 | A. Final examination B. Final examination C. Course reviews and evaluations | Cenko Cenko Pearson/Cenko | | |

Course Instructors and Invited Lecturers

- Thomas A. Pearson, MD, MPH, PhD
- Michael Perri, PhD, ABPP
- Carl J. Pepine, MD, MACC
- Catalina Lopez-Quintero, MD, PhD
- William. T Donahoo, MD
- Sarah Meyer, MLIS, Nancy Schaefer, MLIS
- Rhonda Cooper-DeHoff, Pharm.D., M.S., FAHA, FACC
- Sonja Rasmussen, MD, MS
- Krishna Vaddiparti, PhD, MPE, MSW
- Erta Cenko, MSPH

Course Materials and Technology Requirements

The required text is: Epidemiology of Chronic Diseases: Global Perspectives, Randall E. Harris, Publisher: Jones & Bartlett Learning, ISBN: 9781449653286

Completion of the assigned readings from this text is mandatory. Other readings will be selected from articles published in peer reviewed journals. Lecture presentations will highlight, review, and expand upon the most important aspects of the assigned reading materials. Students are still responsible for mastering any content from the assigned readings, exercises, or assignments that is NOT covered in a lecture presentation. Exams will cover all course content covered in assigned readings, exercises, discussions, and lecture presentations.

Articles and other resources will be posted on e-Learning.

1. The US Burden of Disease Collaborators. The State of US Health, 1990-2016. *JAMA* 2016; 319:1444-1472.
2. Dwyer-Lindgren, L, Bertozzi-Villa A, et al. US County-Level Trends in Mortality Rates for Major Causes of Death, 1980-2014. *JAMA* 2016; 316:2385-2401
3. Kannel WB, et al. Factors of Risk in the Development of Coronary Heart Disease—Six-Year Follow-up Experience: The Framingham Study. *Ann Intern Med.* 1961;55:35-50.
4. LaCroix A. et al, Coffee Consumption and the Incidence of Coronary Heart Disease. *NEJM* 1986; 315:977-82.
5. Barry JD, et al. Lifetime Risks of Cardiovascular Disease. *NEJM* 2012; 366:321-9
6. Ridker PM, et al. Antiinflammatory Therapy with Canakinumab for Atherosclerotic Disease *NEJM* 2017; 377:1119-1131
7. Pearson TA, et al. American Heart Association Guide for Improving Cardiovascular Health at the Community Level, 2013 Update. *Circulation* 2013; 127:1730-1753.
8. Record B, et al. Community-wide Cardiovascular disease prevention progress and health outcomes in a rural county, 1970-2010. *JAMA* 2015; 313:147-155.
9. Fallin MD, et al. Genetic Epidemiology and Public Health: The Evolution From Theory to Technology: *AM J Epidemiology* of 2016; <https://doi.org/10.1093/aje/kww001>
10. My Family Health Portrait- CDC: <https://phgkb.cdc.gov/FHH/html/index.html>
11. Khoury MJ, et al. *Am J Prev Med* 2016; SO: 398-401.
12. Pearson, TA. Alcohol and heart disease. *Circulation* 1986; 94:3023-5.
13. Gurka MJ et al. Independent Associations Between Metabolic Syndrome Severity and Future Coronary Heart Disease by Sex and Race. *Diabetologia* 2017; 60:1261-127
14. Whelton, PK et al. Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults. *Hypertension* 2017;71:e13-e115.
15. Grundy SM et al. AHA/ACC Guidelines on the management of blood cholesterol: *Circulation* 2018; DIO: 10.1161/CIR.0000000000000625.
16. Physical Activity Guidelines Advisory Committee Report Part A: Executive Summary. *Nutr. Rev* 2009;67; 114-20.
17. US Dietary Guidelines (<https://health.gov/dietaryguidelines/2015/resources/2015-2020-Dietary-Guidelines.pdf>)
18. Zhong VW, Van Horn L, Cornelis MC, et al. Associations of Dietary Cholesterol or Egg Consumption With Incident Cardiovascular Disease and Mortality. *JAMA.* 2019;321(11):1081–1095.
19. Pearson TA, et al. Markers and inflammation and cardiovascular disease. *Circulation* 2003; 07:499-511.

Required Equipment

Computer with high-speed internet access and use of a supported browser. Please refer to the student computing requirements listed on the Online Student Resources page. This course is delivered entirely online using the University of Florida's e-Learning in Canvas Course Management System. To access this course, you will use your Gatorlink ID and password to login to the course (via Canvas).

Technical Support

For technical support for the materials posted in the course e-Learning site, activities, and assessments, please post in the appropriate discussion or contact:

Name: Online MPH Program

Email Address: email Mark Hart and Truly Hardemon through Canvas Inbox

For all other technical support for this class, please contact the UF Computing Help Desk at:

Phone Number: (352) 392-HELP (4357) Option 2

Email: helpdesk@ufl.edu

Webpage with Chat: UF Computing Help Desk

ACADEMIC REQUIREMENTS AND GRADING

The evaluation of student performance in PHC 6003 will consist of four parts:

Final examination (30%): This will be a closed-book multiple choice question examination to assess comprehension of course materials and cognitive learning objectives. Material for the entire course will be assessed. Two hours are allotted to the examination followed by a one hour required discussion period to address questions. Bring your laptops to the session so you can complete the course evaluation during the final session which is allotted on hour.

Two take-home essay tests: (30% -15% each) This will be an open-book test with essay format. These essays will test comprehension and skill objectives for the course. Individual essays will be handed back with comments and a one hour discussion will be held one week after the examination is handed in for student questions and discussions.

Team presentations: (25%) These will be a 20 minute oral presentation by teams of 2-4 students. Team will be asked to present a formal discussion of an issue in the chronic disease of their choice, according to those chapters in the Remington et al textbook. The same grade will be given to all members of the team unless all students do not contribute to the presentation. This will assess the comprehension skills and learning objectives.

Class participation: (15%) This will assess engagement of the student in discussion of the assignments, essays tests, and team presentations during class.

Point system used (i.e., how do course points translate into letter grades).

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|----------------------|-------|------|------|------|------|------|------|------|------|------|------|------|
| Points earned | 92.0 | 89.0 | 86.0 | 82.0 | 79.0 | 77.0 | 73.0 | 70.0 | 67.0 | 63.0 | 60.0 | 0 |
| | - | - | - | - | - | - | - | - | - | - | - | - |
| | 100.0 | 91.9 | 88.9 | 85.9 | 81.9 | 78.9 | 76.9 | 72.9 | 69.9 | 66.9 | 62.9 | 59.9 |
| Letter Grade | A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | E |

Please be aware that a C- is not an acceptable grade for graduate students. A grade of C counts toward a graduate degree only if an equal number of credits in courses numbered 5000 or higher have been earned with an A. In addition, the Bachelor of Health Science Program does not use C- grades.

Letter grade to grade point conversions are fixed by UF and cannot be changed.

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|---------------------|-----|------|------|-----|------|------|-----|------|------|-----|------|-----|-----|-----|-----|-----|
| Letter Grade | A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | E | WF | I | NG | S-U |
| Grade Points | 4.0 | 3.67 | 3.33 | 3.0 | 2.67 | 2.33 | 2.0 | 1.67 | 1.33 | 1.0 | 0.67 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

For greater detail on the meaning of letter grades and university policies related to them, see the Grading and Grade Policies posted by the Registrar's Office.

Exam Policy

Policy Related to Make up Exams or Other Work

In general, taking an exam after the official closing time will only be permitted under extenuating circumstances. Late exams will only be permitted at the discretion of the instructors (advanced notice in writing required and per applicable University of Florida policies). Failing to schedule an exam time with ProctorFree will not be considered a valid reason for requesting to take an exam late. At his/her discretion and in consultation with ProctorFree representatives, the UF Director of Public Health Professional Education Programs may permit an extension of an exam that has already begun.

Policy Related to Required Class Attendance

All faculty are bound by the UF policy for excused absences. For greater detail on excused absences, see the Attendance Policies posted by the Registrar's Office.

Policy Related to Guests Attending Class:

Only registered students are permitted to attend class. However, we recognize that students who are caretakers may face occasional unexpected challenges creating attendance barriers. Therefore, by exception, a department chair or his or her designee (e.g., instructors) may grant a student permission to bring a guest(s) for a total of two class sessions per semester. This is two sessions total across all courses. No further extensions will be granted. Please note that guests are not permitted to attend either cadaver or wet labs. Students are responsible for course material regardless of attendance. For additional information, please review the Classroom Guests of Students policy in its entirety. Link to full policy: <http://facstaff.php.ufl.edu/services/resourceguide/getstarted.htm>

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

Expectations Regarding Course Behavior

Communication Guidelines

The preferred mode of communication with the course instructors is in class, during office hours, or via email feature on Canvas. While emailing instructors, please make sure to copy both instructor and graduate assistant on the mail and always check the box, "Send an individual message to each recipient". This way we can ensure prompt response to your emails.

Participation

Professional and respectful behavior is expected of all students participating in this course. Please be aware that all assignments and homework are due on the specified date and time.

Academic Integrity

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Codes information at the Dean of Students Office website or the Academic Expectations information at the Graduate School website for additional details.

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online Faculty Course Evaluations. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary Results of these assessments are available to students.

SUPPORT SERVICES

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, it is strongly recommended you register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please do this as soon as possible after you receive the letter. Students with disabilities should follow this procedure as early as possible in the semester. The College is committed to providing reasonable accommodations to assist students in their coursework.

Counseling and Student Health

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

The Counseling and Wellness Center (352-392-1575) offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Online and in person assistance is available.

If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.

The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is 10

located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the Student Health Care Center website.

Crisis intervention is always available 24/7 from the Alachua County Crisis Center at (352) 264-6789.

Do not wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

INCLUSIVE LEARNING ENVIRONMENT

Public health and health professions are based on belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace the University of Florida's Non-Discrimination Policy, which reads:

“The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information and veteran status as protected under the Vietnam Era Veterans’ Readjustment Assistance Act.”

If you have questions or concerns about your rights and responsibilities for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website.