University of Florida
College of Public Health & Health Professions Syllabus

PHC6715: Public Health Research Methods (3 credit hours)

Spring 2022 v4
Delivery Format: On-Campus, Thursdays, Periods 2-4, 8:30-11:30am
Classroom space: CGRC-451; except on 3/3/22 meet in CGRC-101 (Auditorium)
Note: Classes on February 17 and 27, and March 31, are scheduled as field/lab classes;
we will meet in alternate locations those days (TBA in Canvas).

Instructor Name: Andy Kane, MS, PhD
Room Number: Room 101, Aquatic Pathobiology Laboratory, Building 1379
Phone Number: 352-273-9090 (desk); 352-213-8407 (cell)
Email Address: kane@ufl.edu
Office Hours: After class and by appointment
Preferred Course Communications: Canvas

Prerequisites:
College-level biology and chemistry required or permission of instructor. Registrants must be able to attend weekly class sessions and field laboratories, be in good health and able to hike short distances in a range of weather conditions.

PURPOSE AND OUTCOME

Course Overview

This course provides students with fundamental principles of research methodologies relevant to public health research. We will review a range of methodologies, including randomized controlled trials, observational studies, mixed-method and experimental approaches to develop enhanced capacity to criticallyappraise data from scientific studies.

Relation to Program Outcomes

We expect this course to fulfill a core requirement for graduate students in masters and PhD programs in Public Health. In addition, it will be attractive to students in programs outside of Public Health who are interested in applying relevant research methods and approaches to health problems. Concepts inthis course emphasize the broad approaches used in public health sciences and will teach students how to critically analyze and interpret study design and data.

Course Objectives and/or Goals

This course is designed to provide students with a basic understanding of public health research methods. Throughout the semester, the entire research process beginning with the identification of a researchquestion and the selection of a study approach, proceeding through the collection and data analysis approaches and the preparation of a formal scientific report will be described. The course will also discuss academic and professional publishing of results and ethical considerations. Contemporary analysis tools that move beyond standard biostatistical techniques such as GIS and machine learning will also be introduced as well as new information on qualitative studies including interviewing, focus group discussions, and mixed methods research. Understanding of concepts and critical thinking will be strengthened through a series of assignments and class discussions (see below). Upon successful completion of this course, students should be able to:

Content	1.	Compare and contrast the various health-related research approaches and methods
	2.	Demonstrate how research contributes to our current understanding of public health
	3.	Appreciate the contribution of public health practitioners in health research
	4.	Evaluate and design heath research methods and related community engagement strategies appropriate to, and based on, specific contexts and situations
Critical Thinking	5.	Explain the basic concepts of research methods and when to appropriately use them
	6.	Evaluate study design and data sets
Communication	7.	Describe different research approaches and how they relate to public health as well as core values, concepts and functions across the globe and in society
	8.	Cite and explain examples of methodology
	9.	Describe the process associated with research dissemination, including authorship
	10.	Explain research strategies and processes to specific, targeted audiences (for example, various stakeholders involved in public health research)
	11.	List research questions and appropriate study design procedures while considering relevant influences, collaborators, and stakeholder interests appropriate to public health research scenarios
	12.	Develop meaningful graphics to reveal relationships in data

Instructional Methods

This course is offered weekly, in-person. Class meetings will include the following:

1. Assigned readings
2. Lectures and field and laboratory excursions
3. Class discussions
4. Assignments, student presentations and activities

DESCRIPTION OF COURSE CONTENT

Topic Outline/Course Schedule

	Week	Date	Topic(s)	Student Activities & Presentations
Research Ethics & Principles	1	Jan 6	• Course Description and Expectations • Introduction to Public Health Research Methods; Overview of the Research Process (Kane)	In-class activity Student interests/research. review syllabus, assignments,
	2	Jan 13	• Ethical Considerations in Research • Manuscript Submission and Authorship (Kane)	In-class manuscript review
	3	Jan 20	• Principles of Forming Research Questions (Maurelli)	Journal article presentation 1 (ethics)
	4	Jan 27	• Overview of Study Designs (Kane)	Introduction of final project case scenario
	5	Feb 3	• Power evaluation, p-values and reproducibility (Ji-Hyun Lee, Dept. of Biostatistics)	Journal article presentation 2 (comparing study designs)

	6	Feb 10	• Data Visualization Clinic (Kane)	Journal article presentation 3 [3] (P values)
Observational & Experimental Methods	7	Feb 17	• Field Observations and Data Collection (Kane; Field site: On-campus Observation Lab)	Field trip
	8	Feb 24	• Laboratory Experimental Design (when you have control..) (Kane; Field site: Laboratory site visit)	Field trip Journal article presentation 4 (experimental design) **Field observation report due**
	9	March 3	• Quantitative, Qualitative and Mixed Survey-based Research Methods	Journal article presentation 5 (aquatic media sampling) or **Lab observation report due**
	10	March 10	• **Spring Break – no classes**	
Emerging Approaches & Techniques	11	March 17	• Questionnaire Development; Surveys and Interviews	Journal article presentation 6 (qualitative approaches),
	12	March 24	Community Engagement and Community-based Participatory Research: • HealthStreet (Striley, Dept. of Epidemiology) • Seafood worker study (Kane)	Journal article presentation 7 (surveys and interviews)
	13	March 31	Public Health Surveillance: • Alachua County Surveillance Programs • Wastewater Testing and Surveillance (Bisesi; Field site: TREEO)	Field trip
	14	Apr 7	Contemporary Analysis Tools: • Machine learning and AI • GIS	Journal article presentation 8 (community engagement)
	15	Apr 14	Controversial topic assignment	**Headline presentations due**
	16	Apr 21	Final project	**Final Project presentation due**

Course Materials and Technology

There is no required textbook for this course. Pertinent journal articles and reading materials as they apply to each module will be found on the course website; other journal articles will be accessible on-line.

ACADEMIC REQUIREMENTS AND GRADING

General Information
Assignments are to be submitted as a Word document or PowerPoint file unless otherwise indicated. They will be returned to students with comments. They should be submitted to Canvas. Assignments are intended as individual projects unless otherwise directed. Shared work may be treated as a form of plagiarism. Assignments may be required to be submitted via Turnitin in this course (this will be done automatically in the Canvas Assignment). This tool will pick up any passages in students' work that come from another source. Be sure to adequately cite your sources/references for these assignments to avoid plagiarism (see format below). Some similarity is expected and unavoidable, however if large portions are copied from other sources, it will be as considered plagiarism. The Canvas assignment tool will notify you confirming the submission of your assignment. PLEASE check your UFL email at http://webmail.ufl.edu on a regular basis for these and other email notices from the course site. If you do not receive an email confirmation within 2 hours of submission, please return to the site and resubmit your assignment. It is a student's responsibility to verify that they turnin assignments on time and that they turn in the CORRECT assignment attachment. Please take a few moments to open your submitted attachment and verify that you have submitted the correct file. You will be graded in the course through the use of written assignments, presentations, graded discussions, and participation.

Course Components
Reading course material as assigned. Attendance at lectures. Participation in discussions and in class activities.

Journal Presentation (20% or 100 points). Students will be assigned a topic relevant to a type of research method/module that will be discussed during class. Each student will chose a journal article that utilizes the assigned topic/method and will critique the strengths and limitations of the method. Their critique will be presented to the class on an assigned date. Note that the article will need final approval from the instructor prior to the critique and presentation to the class. Presentations should be created in PowerPoint or equivalent format and be approximately 20-30 minutes and will lead the following discussion. More details regarding the format and grading rubric will be posted on canvas and discussed in class. The article will be distributed to the class the week prior and students should be prepared to engage in discussion after the presentation. Each student will lead 1 paper critique during the semester.

Laboratory Report (20% or 100 points). Students will engage in a field data collection and analysis exercise. Details of the exercise will be provided. Each student will prepare a written report that will include data collection, analysis and interpretation. While some of the lab work will be performed in teams, each student will submit an independent report. The instructor will provide detailed information on this assignment during the first class which will also be posted on canvas.

Controversial News Stories (20% or 100 points). For this assignment, each student will identify 2 news headlines related to any topic of Public Health that are not totally in agreement, that is approved by the instructor. Using the headlines as a guide, the student must use peer reviewed published literature (at least 2 articles) that support (fully or partially) or refute the statements based on the research methods. A short presentation (10-12 minutes) will be prepared to share with the class that describe the methods used in the articles and a critique on whether the student thinks the methods were appropriate, soundly executed and whether appropriate conclusions were made in the news headlines. More details on this assignment will be given out in class and posted on canvas.

Final Project: Agricultural Worker Health (30% or 150 points). Students will be given a scenario and assigned an employment profile (CDC officer, academic researcher, etc.) and assigned to a team (team 1 or team 2). Each team will be given a series of questions related to agricultural health. They will design a study to answer these questions based on their job profile and knowledge of research methods. The students will work as a team to produce a final executive summery/abstract that includes a description of their collective approaches, a rationale for the approach and what type of data will be generated. Details of the approach will be presented to the class as a group presentation. Only 1 executive summary/abstract and presentation needs to be submitted per team.

Class participation (10% or 50 points)
All students will be expected to make informed contributions during class lectures, case studies, and student presentations. Students will be expected to display a command of the fundamental concepts during class discussions of case studies and student presentations.

Grading

Requirement	Due date	% of final grade (points)
Journal Article Presentations/discussions	Varies	20% (100)
Laboratory Reports	Feb 24	20% (100)
Controversial News Stories	April 14	20% (100)
Final project	April 21	30%(150)
Class attendance and participation	Entire course	10% (50)

Letter grades for the course will be based on the following grading scale:

Letter grade	Percentage
A	93 – 100
A-	90 – 92.9
B+	87 – 89.9
B	82 – 86.9
B-	80 – 81.9
C+	77 – 79.9
C	72 – 76.9
C-	70 – 71.9
D+	67 – 69.9
D	62 – 66.9
D-	60 – 61.9
E,I,F	<60%

Letter grade to grade point conversions shown below are fixed by UF and cannot be changed:

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

Please be aware that a C- is not an acceptable grade for graduate students. The GPA for graduate students must be 3.0 in all 5000 level courses and above to graduate. A grade of C counts toward a graduate degree if based on a sufficient number of credits in courses numbered 5000 or higher have been earned with a B+ or higher.

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at: http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Late Assignments and Make Up Work
Assignments turned in up to 24 hours late will be deducted 10% of the grade that they would otherwise receive. Assignments turned in more than 24 hours late will not be graded and will contribute zero points toward the final grade unless arrangements have been made in advance with the instructor. Missed assignments will contribute zero points toward the final grade.

Special Circumstances. In the event of exceptional situations that may interfere with your ability to perform an assignment or meet a deadline, contact the instructor as soon in advance of the deadline as possible. Such special cases will be dealt on an individual basis, provided that you have sufficient documentation. For a missed quiz due to an excused absence, the student will work with the instructor to make up the missed quiz.

Please note: Any requests for make-ups due to technical issues MUST be accompanied by the UF Computing help desk (http://helpdesk.ufl.edu/) correspondence. You MUST e-mail me within 24 hours of the technical difficulty if you wish to request a make-up.

Policy Related to Required Class Attendance
Class attendance is a part of the Professionalism component of this course. It is expected that you will notifythe instructor in advance when you know you will miss or be late to class. Excused absences must be consistent with university policies in the Graduate Catalog (http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance) and require appropriate documentation. Additional information can be found here: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx

---

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

Expectations Regarding Course Behavior
All individuals in the classroom, including fellow students, instructors, and guests, are to be treated with respect at all times. All electronics are to be turned off upon entering the classroom. Cell phones must be turned to silent or off during class. Ringing and buzzing cell phones detract from a fruitful educational environment. Each student should make every attempt to arrive to, and be prepared for, class on time. The use of laptops is permitted for class work. The class is meant to be interactive so students are encouraged to ask questions of the instructors and any guest lecturers. Side conversations are to be kept to a minimum.

Communication Guidelines
Students who have questions that cannot be answered during class time should use email or office hours as mechanisms for communicating with the instructors or TA. Office hours have been created to accommodate other courses as much as possible however a student may schedule alternate times to meet with the instructors or TA if the set times do not work. Students who cannot meet during office hours should use Canvas or email to contact the instructors or TA. Please be aware that students should allow two business days for a response to inquiries.

Academic Integrity
Students are expected to act in accordance with the University of Florida policy on academic integrity. Students at the University of Florida have committed themselves 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**."
Students 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 the individual student's 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. Cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. Additional information regarding Academic Integrity, Student Conduct and Honor Code is available at:https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/ http://gradschool.ufl.edu/students/introduction.html

Online Faculty Course Evaluation Process
Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

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.phhp.ufl.edu/services/resourceguide/getstarted.htm

SUPPORT SERVICES

Accommodations for Students with Disabilities
If you require classroom accommodation because of a disability, you are strongly encouraged to register with the Dean of Students Office http://www.dso.ufl.edu within the first week of class. The Dean of Students Office will provide documentation of accommodations to you, which you then give to me as the instructor of the course to receive accommodations. Please make sure you provide this letter to me by the end of the second week of the course. 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. Visit their web site for more information: http://www.counseling.ufl.edu. On line and in person assistance is available.
- You Matter We Care website: http://www.umatter.ufl.edu/. 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 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 web site at: https://shcc.ufl.edu/
- Crisis intervention is always available 24/7 from: Alachua County Crisis Center (352) 264-6789 http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx

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 the 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: www.multicultural.ufl.edu