

Spring 2018

EPID 7133 – Epidemiologic Research Methods I (3 Credits)

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Georgia Southern University
Jiann-Ping Hsu College of Public Health
EPID 7133 – Epidemiologic Research Methods I (3 Credits)
Spring 2018

Instructor: Logan Cowan, PhD, MPH
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Office Hours: Tuesday/Thursday – 9:00-11:30
Class Meets: Info Technology Bldg – 3214

Course Catalog available at:

<http://students.georgiasouthern.edu/registrar/pdf/catalogs/GraduateCatalog/index.htm>

under Jiann-Ping Hsu College of Public Health Programs

***Office Hours:**

I am also happy to schedule another meeting outside of this period to accommodate your schedule when possible.

Prerequisites:

PubH 6533 or instructor permission

FOLIO Address:

<http://my.georgiasouthern.edu>

Catalog Description:

This course will focus on epidemiologic methods - primarily methods used in observational studies using existing data, cohort studies, case-control studies and randomized controlled trials. With respect to cohort studies, topics covered include cohort identification, ascertainment of exposure status, follow-up of cohort members, measuring outcomes, sources of bias and interpretational issues. Case-control topics include issues around defining cases and controls, control of confounding, and sources of bias/systematic error. Topics around randomized trials include randomization procedures, defining and assembling treatment/intervention arms, selecting study subjects and approaches to data collection. Other topics covered in this course include surveillance and ecologic studies. Pros and cons of all study designs will be discussed, in part through readings of published papers. Fundamentals of data analysis will also be addressed, but a detailed discussion of that material will be covered in EPID 7134.

Required Textbook:

Aschengrau A and Seage III GR. *Essentials of Epidemiology in Public Health (3rd Ed.)* (ISBN: 9781284028911)

Required Resources:

Calculator

Computer/Internet access

Response Times:

During a normal work week (i.e., Monday 9:00 AM through Friday 5:00 PM) students can expect responses as follows:

- Email: within 48 hours
- Assignment grades/evaluation: within 1 week

Exceptions: I may not check FOLIO or GSU email over the weekends. If you send me an email after 5:00 PM on Friday, I may not respond until the following Monday.

Competencies and Learning Outcomes Addressed:

Epidemiology Student Learning Outcomes (SLOs)

1. Demonstrate proficiency and effectiveness in the communication of core public health principles and practices, both oral and written.
2. Demonstrate proficiency in the integration of the core public health disciplines (Biostatistics, Epidemiology, Environmental Health, Health Policy/Management, and Social/Behavioral Science) in practice and research.
3. Demonstrate proficiency in problem leadership. -solving, critical thinki
4. Formulate population these hypotheses. -based hypoth
5. Collect, analyze, and interpret data derived from population -based research (E
6. Create and implement public health surveillance systems for population -based studies.
7. Recommend evidence epidemiologic findings. -based interventions and
8. Communicate epidemiologic principles and concepts to lay and professional audiences through both oral and written communication.

Cross-cutting Competencies

1. Demonstrate effective written and oral skills for communicating with different audiences in the context of professional public health activities. (Communication and Informatics)
2. Use information technology to access, evaluate, and interpret public health data. (Communication and Informatics)
3. Describe the roles of history, power, privilege and structural inequality in producing health disparities. (Diversity and Culture)
4. Explain how professional ethics and practices relate to equity and accountability in diverse community settings. (Diversity and Culture)
5. Develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served. (Diversity and Culture)

Epidemiology Concentration

1. Identify key sources of data for epidemiologic purposes.

2. Identify the principles and limitations of public health screening programs.
 3. Describe a public health problem in terms of magnitude, person, time and place.
 4. Explain the importance of epidemiology for informing scientific, ethical, economic and political discussion of health issues.
 5. Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data.
 6. Apply the basic terminology and definitions of epidemiology.
 7. Calculate basic epidemiology measures.
 8. Communicate epidemiologic information to lay and professional audiences.
 9. Draw appropriate inferences from epidemiologic data.
 10. Evaluate the strengths and limitations of epidemiologic reports.
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Course Learning Objectives:

At the completion of this course the student will be able to:

1. Understand epidemiological study designs. (4)
2. Understand validity and threats to validity in epidemiologic studies. (3)
3. Handle threats to validity at the stages of study design and data analysis. (3-7)
4. Use SAS to do basic data management and basic statistics. (2, 3)
5. Write and present an academic article containing original material and analysis. (1,2,8)

Assessment of Student Learning:

Activity 1: Exams. Comprehensive examinations covering multiple topic areas will be utilized to allow the student to demonstrate summative competency in terminology, common epidemiologic measures, and study design. These examinations will utilize a variety of questions, including true/false, multiple choice, and short answer in a timed, monitored environment.

Activity 2: Module Tasks. Module tasks will be constructed to allow the student to demonstrate competence in epidemiologic measures through both word problems and direct calculations. Problem sets will also be presented within the framework of various epidemiologic study designs in order to provide the opportunity to integrate concepts across topic areas.

Activity 3: Article. Students will write a research article based on a research hypothesis that they develop. Students will be expected to identify and analyze data to answer the research question and write an article summarizing the research findings. This will allow students to integrate numerous epidemiologic concepts in the context of epidemiologic research.

Course Structure:

This course will use a combination of in-class sessions, readings, and online learning through Folio. Folio material can be found on your Folio main page, and there is a help link located in the upper right-hand corner of the Folio course. If you are having particular issues with FOLIO we can address them before or after class.

Assignments/Evaluations:

Examinations (2): 50% of Final Grade

Exams may be any combination of true/false, multiple choice, matching, short answer, & discussion (Activity 1). The examination will be closed book and closed notes. Exams will be administered during the class period indicated on the course schedule. Make-up exams will not be administered unless the absence is deemed excused. The validity of excused absences will be determined by the instructor and will be individually assessed. Each examination will include the material covered in the outlined section of the course specified in the course schedule. Even though the exam will predominately consist of material learned in that portion of the class, it should be viewed as *cumulative* since many concepts covered in the following portions build upon a foundation constructed in the beginning of the course. The examination questions will include course content as well as all the text material (including handouts and readings) assigned.

Module Tasks (~7): 25% of Final Grade

There will be various tasks (i.e. discussions/writing assignments, problem sets, case studies, etc.) to be completed over the course of the semester (Activity 2). These assignments will be due each non-exam week. Tasks may be discussed in a group setting, but each student is responsible for their individual work. Assignments will be due by 11:59PM on the due date stated in FOLIO **and will not be accepted late.**

Article and Presentation: 25% of Final Grade

Each student will write a research article based including an introduction, methods, results, and discussion sections. Students will be expected to perform a literature review, develop a research hypothesis, collect/identify data, and perform analysis to answer the research question. They will also be expected to write an article summarizing the research findings. Students will present their research to the class in a poster session format. This will allow students to integrate numerous epidemiologic concepts in the context of epidemiologic research.

Grading:

Weighting of assignments for the purposes of grading will be as follows:

<u>Component</u>	<u>%</u>
Midterm Exam	25
Final Exam	25
Module Tasks	25
Article and Presentation	25

The following point scale will be utilized in grading:

- A: 90- 100%
- B: 80% - 89.9%
- C: 70% - 79.9%
- D: 60% - 69.9%
- F: < 60.0%

All assignments will be graded and returned promptly so that students may accurately calculate their grades at any point in time during the semester.

Due time:

All homework assignments and training certificate should be electronically submitted to *dropboxes provided in FOLIO*, by 11:59 pm on the due date. Early submission is welcome.

See Course Outline for specific topics and dates.

Late submission:

No late submissions will be accepted!

There are times when extraordinary circumstances occur (e.g., serious illness, death in the family, etc.). In such circumstances, please consult with the instructor within a reasonable amount of time. The instructor will consult the college administrators and verify the reported circumstances before any exemptions or extensions can be granted. Extensions are not guaranteed and will be granted solely at the discretion of the instructor.

Expectations:

This course will involve the completion of a number of written assignments. Writing as a means of effective communication, argumentation, and presentation of ideas is extremely important as a public health professional, or a professional of any sort. It is expected that students will turn in assignments that express their ideas thoughtfully, with attention to organization, spelling, grammar, and supporting evidence. Content, readability, and presentation matter for publication and report writing.

Proper citation and quotation of references in writing is absolutely critical, and failure to do so can have serious repercussions both in the academic and professional realms. Failure to give credit as required by academic and professional standards will result in a failing grade on assignments. If you have questions about citation, please seek help from Dr. Cowan or another source (i.e. Chapter 6 page 170 of APA sixth edition). If you would like assistance in developing your writing skills, the University Writing Center (912-871-1413) is an excellent resource.

The quality of the experience students have in this class will depend heavily upon completion of assigned readings and participation in class discussion. If you feel uncomfortable speaking up for any reason, please let me know. We want to create an environment in which all students can feel safe to express their ideas.

Students With Disabilities:

Georgia Southern University believes academically qualified individuals with disabilities should have equal opportunity and access to a quality education. In order to receive services, students must be registered with the Student Disability Resource Center (SDRC), which requires they provide current documentation of their disability from a qualified health professional. Students

who have or think they may have a disability are invited to contact SDRC for a confidential discussion.

Students registered at the SDRC Office and approved for accommodations at GSU must follow all time deadlines and procedures necessary to receive specific academic accommodations as established by the SDRC prior to the beginning of each semester in order to discuss any necessary changes in accommodations and to establish accommodations for current classes. Please ensure the professor is notified no later than the beginning of each semester of recommended accommodations or upon approval of new or changed accommodations. Once a student has arranged for an accommodation letter from the SDRC, it is the student's responsibility to schedule an appointment with his or her instructor to discuss accommodations.

If the student does not initiate this meeting, it is assumed no special accommodations or modifications will be necessary to meet the requirements of this course. For additional information, please visit the SDRC Website at: <http://students.georgiasouthern.edu/sdrc/> The SDRC is located on the second floor of Cone Hall and the phone number is (912) 478-1566.

Academic Misconduct:

As a student registered at this University, it is expected that you will adhere to only the strictest standards of conduct. It is recommended that you review the latest edition of the *Student Conduct Code* book, as well as the latest *Undergraduate & Graduate Catalog* to familiarize yourself with the University's policies in this regard. Your continued enrollment in this course is an implied contract between you and the instructor on this issue; from this point forward, it is assumed that you will conduct yourself appropriately.

Plagiarism:

According to the Academic Dishonesty Policy of GSU, Plagiarism includes (but not limited to):

- A. Directly quoting the words of others without using quotation marks or indented format to identify them.
- B. Using published or unpublished sources of information without identifying them.
- C. Paraphrasing material or ideas without identifying the source.
- D. Unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic material.

If you are accused of plagiarism by a JPHCOPH, the following policy, as per the Judicial Affairs website (<http://students.georgiasouthern.edu/judicial/faculty.htm>) will be enforced.

Procedures For Adjudicating Academic Dishonesty Cases:

First Offense - In Violation Plea

1. If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is a first violation of academic dishonesty. The incident will be reported via the following website:

<http://students.georgiasouthern.edu/judicial/faculty.htm>

2. If it is a first violation, the professor should talk with the student about the violation. If the student accepts responsibility in writing and the professor decides to adjudicate the case, the following procedures will be followed:

- a. The student will be placed on disciplinary probation for a minimum of one semester by the Office of Judicial Affairs.
- b. The student will be subject to any academic sanctions imposed by the professor (from receiving a 0 on the assignment to receiving a failing grade in the class).
- c. A copy of all the material involved in the case (Academic Dishonesty Report Form and the Request for Instructor to Adjudicate Form) and a brief statement from the professor concerning the facts of the case and the course syllabus should be mailed to the Office of Judicial Affairs for inclusion in the student's discipline record.

First Offense - Not In Violation Plea (student does not admit the violation)

If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, the professor should contact the Office of Judicial Affairs to determine if this is the first or second violation of academic dishonesty. The student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case. If the student is found responsible, the following penalty will normally be imposed:

- a. The student will be placed on Disciplinary Probation for a minimum of one semester by the Office of Judicial Affairs.
- b. The student will be subject to any academic sanctions imposed by the professor.

Second Violation of Academic Dishonesty

If the professor and the Dean of Students agree that the evidence is sufficient to warrant a charge of academic dishonesty, and if it is determined this is the second violation, the student will be charged with academic dishonesty and the University Judicial Board or a University Hearing Officer would hear the case.

If the student is found responsible, the following penalty will normally be imposed:

- a. Suspension for a minimum of one semester or expulsion.
- b. The student will be subject to any academic sanctions imposed by the professor.

Not Responsible Finding

When a student is found not responsible of academic dishonesty, the work in question (assignment, paper, test, etc.) would be forwarded to the Department Chair. It is the responsibility of the Chair to ensure that the work is evaluated by a faculty member other than the individual who brought the charge and, if necessary, submit a final grade to the Registrar. For the protection of the faculty member and the student, the work in question should not be referred back to the faculty member who charged the student with academic dishonesty. In the case of a Department Chair bringing charges against a student, an administrator at the Dean's level will ensure that the student's work is evaluated in an appropriate manner.

Confidentiality:

In accordance with provisions of the Family Educational Rights and Privacy Act of 1974 and the Georgia Open Records Act, any information related to a violation of academic dishonesty or the

outcome of a judicial hearing regarding academic dishonesty is prohibited and must be treated as confidential by members of the faculty.

University Calendar for the Semester:

The University Calendar is located with the semester schedule, and can be found at:

<http://em.georgiasouthern.edu/registrar/>

Portfolio Inclusion:

Samples of your work may be reproduced for search purposes and/or inclusion in the professor's teaching portfolio. You have the right to review anything selected for use, and subsequently ask for its removal.

Course Changes:

The contents of this syllabus are as complete and accurate as possible. The instructor reserves the right to make any changes necessary to the syllabus and course material. The instructor will announce any such changes in class. It is the responsibility of the student to know what changes have been made in order to successfully complete the requirements of the course.