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EPID 8130 – Field Methods in Epidemiology

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Georgia Southern University
Jiann-Ping Hsu College of Public Health

EPID 8130 – Field Methods in Epidemiology
Fall 2019

<u>Instructor:</u>	Kelly Sullivan, Ph.D.
<u>Office:</u>	Hendricks Hall, Room 2040
<u>Phone:</u>	(912) 478-7902 (best to contact me by email)
<u>E-Mail Address:</u>	ksullivan@georgiasouthern.edu (to set up an appointment)
<u>Office Hours:</u>	Monday and Wednesday 9:00AM – 11:30AM and by appointment

Course Catalog available at: http://students.georgiasouthern.edu/registrar/pdf/catalogs/GraduateCatalog/index.htm under Jiann-Ping Hsu College of Public Health Programs

Prerequisites: N/A

FOLIO address: <http://my.georgiasouthern.edu>

Access to course materials are available for up to one year after graduation.

Catalog Description

This course addresses practical aspects of management and implementation of research studies and will focus on the conduct of research consistent with the scientific method. Topics include planning study activities, questionnaire design and implementation, and operations research.

Required Textbook:

Methods in Field Epidemiology
Author(s): Pia D. M. MacDonald, PhD, MPH
ISBN-13: 978-0195313802

Additional Recommended Material: Questionnaires and manuals from the Demographic and Health Survey. These materials can be downloaded free of cost at <http://dhsprogram.com/What-We-Do/Survey-Types/DHS-Questionnaires.cfm> and <http://dhsprogram.com/What-We-Do/Survey-Types/DHS-Manuals.cfm>.

DrPH Core Student Learning Outcomes

1. Apply evidence-based practice and research methods to advance the field of public health.
2. Develop culturally-sensitive public health policies or programs using interdisciplinary approaches grounded in legal and ethical principles.
3. Integrate knowledge, legal and regulatory approaches, ethical frameworks and varied stakeholder interests in addressing public health problems.
4. Communicate public health information to diverse stakeholders, including individuals at all levels of health literacy, for purposes of influencing behavior and policies.
5. Propose strategies for health improvement and elimination of health inequities including stakeholders, researchers, practitioners, community leaders and other partners.

DrPH Concentration Competencies

(italicized competencies are directly addressed in this course)

1. *Demonstrate the ability to identify deficiencies in scientific knowledge or public health practice using existing sources of epidemiologic data.*
2. *Construct a public health and epidemiologic research question from ideas, conditions, or events using critical thinking skills.*
3. Utilize advanced epidemiologic research methods to inform public health action.
4. Select appropriate statistical tools and methodology to analyze and summarize epidemiological data.
5. Disseminate information based on advanced epidemiologic studies to lay or professional audiences.

DrPH Cross-cutting Competencies

Data & Analysis

1. Explain qualitative, quantitative, mixed methods and policy analysis research and evaluation methods to address health issues at multiple (individual, group, organization, community and population) levels
2. Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue
3. Explain the use and limitations of surveillance systems and national surveys in assessing, monitoring and evaluating policies and programs and to address a population's health

Leadership, Management & Governance

1. Propose strategies for health improvement and elimination of health inequities by organizing stakeholders, including researchers, practitioners, community leaders and other partners
2. Communicate public health science to diverse stakeholders, including individuals at all levels of health literacy, for purposes of influencing behavior and policies
3. Integrate knowledge, approaches, methods, values and potential contributions from multiple professions and systems in addressing public health problems
4. Create a strategic plan
5. Facilitate shared decision making through negotiation and consensus-building methods
6. Create organizational change strategies
7. Propose strategies to promote inclusion and equity within public health programs, policies and systems
8. Assess one's own strengths and weaknesses in leadership capacities including cultural proficiency
9. Propose human, fiscal and other resources to achieve a strategic goal
10. Cultivate new resources and revenue streams to achieve a strategic goal

Policy & Programs

1. Design a system-level intervention to address a public health issue
2. Integrate knowledge of cultural values and practices in the design of public health policies and programs
3. Integrate scientific information, legal and regulatory approaches, ethical frameworks and varied stakeholder interests in policy development and analysis
4. Propose interprofessional team approaches to improving public health

Education & Workforce Development

1. Assess an audience's knowledge and learning needs
2. Deliver training or educational experiences that promote learning in academic, organizational or community settings
3. Use best practice modalities in pedagogical practices

Student Learning Outcomes for This Course:

Students will:

1. Develop measurable objectives to answer an epidemiologic problem.
2. Outline the design and methodology for research consistent with objectives for an epidemiologic study.
3. Prepare a detailed plan to achieve their research/study objectives.
4. Demonstrate awareness of research issues such as quality control, ethical obligations, and management of logistical details

Assessment of Student Learning

COURSE PROJECT

In this class, we will focus on the actual development and execution of an epidemiologic study. You can choose to work on any topic you'd like, as long as you follow these parameters:

- The study must use an analytic design (cross-sectional, case-control, cohort or RCT). It cannot be descriptive (assessing prevalence of X, etc).
- The study must identify a specific exposure and a specific outcome.
- Be ambitious but reasonable. The study should be something that could realistically take place, perhaps with grant funding, within no more than 5 years. It will be tempting to include many aspects of your topic (e.g. several exposures or outcomes), but you need to find the balance between ambitious and realistic.
- The study must be performed in humans and must enroll participants. You can't exclusively use medical records, secondary data, or animal/environmental data, although these can be part of the study. You must include primary data collection from people.
- Your project must address an area where there is a deficiency in scientific knowledge or public health practice.

HOMEWORK ASSIGNMENTS

Homework assignments are designed to allow the student to demonstrate their understanding of the key concepts presented in class. Instructions for each homework assignment will be posted on Folio.

Although many assignments will not be given an individual grade, each assignment is due on the date specified. The Instructor will only make comments and provide feedback on assignments submitted on time. Therefore, it is beneficial to you to turn in all assignments on time. Students are not permitted to work in groups on homework assignments unless it is specifically stated in the instructions of the assignment. Each assignment is an individual assignment and students are expected to turn in their own original work. Plagiarism is a serious offense. If the course instructors feel that academic dishonesty may have occurred related to ANY grading event, the instructors will/may conduct an additional oral examination or other method of evaluation for the

material covered. If plagiarized material is detected or it is found that the student has cheated on an assignment, the student may FAIL the course.

FINAL MANUAL OF PROCEDURES

You will submit a final manual of procedures for a study of your choosing. This manual will be something that you work on throughout the course. Your full Manual will be reviewed for completeness and quality, and will be returned to you with review comments. Specific details of this assignment will be provided on Folio.

STUDENT PRESENTATION

The presentation is intended to give students experience in preparing information for brief dissemination and an opportunity to share findings with others. Throughout the semester, students will share their ideas and plans with the class and will contribute to discussion to provide feedback to other students. The students' final presentations will be based on their project. Students will present the major elements from their project.

Students may vary in their ability to achieve levels of competence in this course. Students can expect to achieve course competence only if they honor all course policies, attend classes regularly, complete all assigned work in good faith and on time, and meet all other course expectations of them as students.

Overview of the content to be covered the semester
See separate SCHEDULE document for specific dates

Week	Topic(s)	Required Reading	Assignment
1	<ul style="list-style-type: none">➤ Introduction to Field Epidemiology➤ Outbreak investigations➤ Surveillance➤ Overview of example study➤ Concept paper, Objectives and Operational objectives	Ch 1-4	<p>Draft study concept, objectives and operational objectives</p> <p>As part of your study concept assignment, you need to</p> <ol style="list-style-type: none">1. Give a brief description (no more than two (2) pages) of why your study is important, some literature background on the topic and general justification for doing this work at this time, in this place with this population. Review the existing literature and other sources of epidemiologic data and identify a deficiency in scientific knowledge or public health practice that your study

			<p>can address. Be sure to include references -- properly cited references, and there must be references other than the Internet.</p> <p>2. Based on the topic you have identified and the ideas, conditions or events that are relevant to your topic, construct a public health/epidemiologic research question. You will develop overall study objectives as well as operational objectives addressing each step in the study.</p>
2	<ul style="list-style-type: none"> ➤ Discuss study ideas/objectives ➤ Record Systems: introduction and flow charts ➤ Flow charts assigned ➤ 		Final study concept, objectives and operational objectives
3	<ul style="list-style-type: none"> ➤ Environmental health ➤ Non-infectious disease studies ➤ Forensic studies 	Ch 12-14	
4	<ul style="list-style-type: none"> ➤ Hypothesis generation, descriptive epi ➤ Study approaches ➤ Systems theory and information collection methods 	Ch 6-7	Flow chart(s)
5	<ul style="list-style-type: none"> ➤ Discuss flow charts ➤ Records: <ul style="list-style-type: none"> ○ Instrument design ○ Variables/wording/placement ○ Data fields, variables, coding ➤ Coding of data and documentation 		
6	<ul style="list-style-type: none"> ➤ Hypothesis-testing interviews ➤ Study forms ➤ Form and questionnaire list assigned ➤ Form/questionnaire drafts assigned 	Ch 8	Form and Questionnaire list and outline
7	<ul style="list-style-type: none"> ➤ Discuss form/questionnaire plans ➤ Sampling: Sample sizes for common designs ➤ Sampling: Designs and operationalization ➤ Sampling plan assigned 	Ch 11	Sampling plan List of procedures
8	<ul style="list-style-type: none"> ➤ Discuss sampling plan ➤ Procedures, methods and quality control ➤ Procedures assigned 	Ch 5	Form drafts

9	<ul style="list-style-type: none"> ➤ Discuss forms ➤ Managing time: Time planning – the PERT method ➤ Managing money: Costs & Budgets ➤ Managing your records: putting the system together ➤ Budget assigned ➤ Timeline assigned 		Questionnaire drafts Informed consent form
10	<ul style="list-style-type: none"> ➤ Peer-review questionnaire drafts ➤ Assembling a team ➤ Managing people: human resource basics for junior investigators ➤ Staff training and development ➤ Observers, training and preparing for field work 		
11	<ul style="list-style-type: none"> ➤ IRB/Informed consent ➤ Managing & Minimizing risks: Human subjects considerations and ethics in research ➤ Informed consent assigned 		
12	<ul style="list-style-type: none"> ➤ Pilot testing of questionnaires and forms (including consent) ➤ Discuss timelines ➤ Discuss budgets 	Ch 9	Procedures
13	<ul style="list-style-type: none"> ➤ Discuss procedures ➤ Data entry & Editing ➤ Logic of epidemiological data analysis ➤ Analysis of epidemiologic data ➤ Analysis plan assigned 		
14	<ul style="list-style-type: none"> ➤ Discuss analysis plan ➤ Report writing & wrap up 	Ch 10	Final MOP Presentation Presentation handouts
15	No Class: Thanksgiving break		
16	➤ Presentations		
	➤ Final Exam		

Course Structure

This course will consist of lectures and discussion. The course is fast-paced and will require students to read prior to class each week and to complete homework assignments. Students should keep up with all assignments and should not allow themselves to fall behind since it will be very difficult to catch-up.

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
- Discussion posts: within 72 hours
- Assignment grades: within 72 hours of submission date.

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

Assignments/Evaluations

The following assignments will be used to evaluate the performance of students in the course. The requirements for each assignment will be posted on Folio or handed-out in class. Students who are absent for a class period in which an assignment was given are responsible for obtaining the assignment from a classmate, Folio, or the instructor(s). There will be no opportunity for "extra credit" in this course. Grades will not be "curved". There will be no opportunity for "extra credit" in this course. The specific grading events for this course are as follows:

See Course Outline for specific topics and dates.

<u>Assignment</u>	<u>Points</u>
Study objectives & Concept paper (Draft)	20
Study objectives & Concept paper (Final)	20
Flowchart exercise	20
Sampling plan	20
Form and Questionnaire list/outline (15 pts each)	30
Forms	20
Questionnaires	20
Informed consent forms	20
List of procedures	15
Timeline	20
Budget and justification	20
Data analysis plan	20
Procedures	30
Final manual	200
Presentation (presentation 30; handouts 20)	50
Final Exam	50

90+% =A,
80-89%=B,
70-79%=C,
60-69%=D,
Below 60%=F

1. ASSIGNED READINGS

Assigned readings should be done before class to enhance students' learning. The readings are important for completion of course assignments and class discussion.

2. HOMEWORK ASSIGNMENTS

Homework assignments are designed to allow the student to demonstrate their understanding of the key concepts presented in class. Instructions for each homework assignment will be posted on Folio.

Although many assignments will not be given an individual grade, each assignment is due on the date specified. The Instructor will only make comments and provide feedback on assignments submitted on time. Therefore, it is beneficial to you to turn in all assignments on time. Students are not permitted to work in groups on homework assignments unless it is specifically stated in the instructions of the assignment. Each assignment is an individual assignment and students are expected to turn in their own original work. Plagiarism is a serious offense. If the course instructors feel that academic dishonesty may have occurred related to ANY grading event, the instructors will/may conduct an additional oral examination or other method of evaluation for the material covered. If plagiarized material is detected or it is found that the student has cheated on an assignment, the student may FAIL the course.

3. FINAL MANUAL OF PROCEDURES

You will submit a final manual of procedures for a study of your choosing. This manual will be something that you work on throughout the course. Your full Manual will be reviewed for completeness and quality, and will be returned to you with review comments. Specific details of this assignment will be provided on Folio.

4. STUDENT PRESENTATION

The presentation is intended to give students experience in preparing information for brief dissemination and an opportunity to share findings with others. Throughout the semester, students will share their ideas and plans with the class and will contribute to discussion to provide feedback to other students. The students' final presentations will be based on their project. Students will present the major elements from their project.

A maximum of 20 minutes is allowed for each presentation and questions. This breaks down into 15 minutes for presentation and 5 minutes for questions. Students should practice their presentation so that they can present it within the time allowed. As running over the allotted time reduces the time available for other students, points will be deducted for every minute that the presentation exceeds the 20 minute time limit.

These presentations should be clear, easy-to-follow and well-organized. Students should prepare PowerPoint slides to use in their presentation. Students should also prepare a 1-2 page handout for everyone so information can be shared with all members of the class.

LATE SUBMISSIONS

Assignments are expected to be turned in by being uploaded into Folio not later than the stated time and date it is due. Late assignments will have 10% deducted for each 24 hour period or part

thereof, past the due date that they are submitted, unless there is a documented personal or family emergency or illness.

ADDITIONAL GRADING NOTES

In order to receive full credit for each assignment, they must be turned in on time and all sections completed. Detailed instructions for completion of these exercises will be provided on Folio.

Failure to follow directions for the assignment (excessive spelling or grammatical errors, etc.) may result in the loss of points from the final grade for each occurrence.

Course grading depends heavily on the student's ability to convey his or her thoughts in writing. Papers that are poorly written and/or have errors in spelling or grammar will not effectively convey the student's ideas. Thus, students who have difficulty with writing should seek help from a writing specialist and/or private tutor.

Expectations:

1. This is a 3-credit hour class. One credit is generally defined as the equivalent of roughly 3 hours of learning effort outside the classroom each week. Thus, for a course like this that meets 3 hours/week, you should expect approximately 6 hours of weekly coursework beyond the classroom. Since there are 15 classes (excluding Thanksgiving Break), you should expect approximately 90 hours of work outside of class this semester.
2. Students are expected to keep up with the class, to read the required material, and to submit assignments and activities by due dates and times.
3. Students are expected to independently complete all activities, exercises, assignments, and the final exam.
4. This course is fast-paced and students should not allow themselves to fall behind since it will be very difficult to catch-up. Attempting quiz questions from last minute studying or last minute preparation of assignments can lead to poor performance on these assessments. Students are also encouraged to contact the Instructor through email or Folio, if questions arise regarding presented material or course format.
5. To receive maximum points for any assignment, activity, exercises, or quiz questions, students need to follow the instructions carefully, follow word limits as instructed and use Spell Check. There will be deductions if these guidelines are not followed.
6. The final study manual is a living document. Components may require editing and updating based on development of subsequent sections later in the semester. The final manual should be consistent and coherent. It is critical that the design, methodology, instruments and procedures correspond. Therefore, components of the manual are not final until submitted in the final manual. Be sure to update each component as needed throughout the semester.

7. Remember to check when assignments are due. It is recommended that you stay ahead of schedule on the assignments, so if an emergency happens, your assignment will be completed and ready to submit within the designated time frame. It is your responsibility to keep track of the due dates for each assignment.

All assignments will be graded promptly so that students may accurately calculate their grades at any point in time during the semester. There are times when extraordinary circumstances occur (e.g., serious illness, death in the family, etc.). In such circumstances, and/or if you need additional time to satisfactorily complete any course requirement, please consult with the instructor within a reasonable amount of time.

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. Extensions are not guaranteed and will be granted solely at the discretion of the instructor.

NO EXTRA CREDIT PROJECTS WILL BE ASSIGNED!

Class Attendance and Participation Policy

Federal regulations require attendance be verified prior to distribution of financial aid allotments. Regular attendance is expected. Your attendance will be verified at the first regular class session.

It is the policy of the University to permit students, faculty, and staff to observe those holidays set aside by their chosen religious faith. The faculty should be sensitive to the observance of these holidays so that students who choose to observe these holidays are not seriously disadvantaged. It is the responsibility of those who wish to be absent to make arrangements in advance with their instructors.

Students participating in authorized activities as an official representative of the University (i.e., athletic events, delegate to regional or national meetings or conferences, participation in university-sponsored performances, and **JPHCOPH funded**) will not receive academic penalties and, in consultation with the instructor of record, will be given reasonable opportunities to complete assignments and exams or given compensatory assignment(s) if needed. The student must provide written confirmation from a faculty or staff advisor to the course instructor(s) at least 10 days prior to the date for which the student will be absent from the class. The student is responsible for all material presented in class and for all announcements and assignments. When possible, students are expected to complete these assignments before their absences. In the event of a disagreement regarding this policy, an appeal may be made by either the student or the instructor of record to the corresponding college dean. (*University Graduate Catalog*)

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 Georgia Southern University, Plagiarism includes (but is 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."

Accommodations for Individuals with Disabilities

In compliance with the Americans with Disabilities Act (ADA), Georgia Southern University will honor requests for reasonable accommodations made by individuals with disabilities. Students must self disclose any disability for which an accommodation is being sought to the Student Disability Resource Center (SDRC) before academic or other accommodations can be implemented. For additional information, please call the Director of EEO and Title IX at (912) 478-5136 / TDD (912) 478-0273 or the SDRC Director at (912) 478-1566 / TDD (912) 478-0666. The TDD phone numbers are intended for individuals with hearing impairments.

University Calendar for the Semester

The University Calendar is located with the semester schedule, and can be found at:
<http://em.georgiasouthern.edu/registrar/resources/calendars/>

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.

One Final Note

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 to ensure better student learning. 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.

This syllabus, my lecture notes, and all materials distributed and presented during this course are protected by copyright law. You are authorized to take notes in this class but that authorization extends to only making one set of notes for your personal use and no other use. You are not authorized to sell, license, commercially publish, distribute, transmit, display, or record notes from this class unless you have my written consent to do so.