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HSPM 8233: Quantitative Research and Evaluation Methods

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Georgia Southern University
Jiann-Ping Hsu College of Public Health
HSPM 8233: Quantitative Research and Evaluation Methods
Fall 2021

<u>Instructor:</u>	Dr. Bettye Appiah Apenteng
<u>Office:</u>	Hendricks Hall 2010
<u>Phone:</u>	912-478-2416
<u>E-Mail Address:</u>	bapenteng@georgiasouthern.edu
<u>Office Hours:</u>	By appointment (please email me)
<u>Folio Address:</u>	https://georgiasouthern.desire2learn.com/d2l/home
<u>Class Meets:</u>	Tuesdays & Thursdays, 2:00pm – 3:15pm Herty Building Room 1101

Course Catalog available at:
<http://em.georgiasouthern.edu/registrar/resources/catalogs/>
under Jiann-Ping Hsu College of Public Health Programs

Prerequisites: None.
FOLIO Access: <https://my.georgiasouthern.edu/portal/portal.php>

Catalog Description:

This course introduces students to the fundamentals and practical application of quantitative methodologies for answering policy and policy-relevant health services research questions. It discusses foundational concepts related to study conceptualization, study design, data analysis and interpretation, and reporting. Topics covered in this course include foundations of health services and policy research, research design, sampling, measurement, univariate and bivariate analysis, regression, multilevel analysis, panel data analysis, exploratory factor analysis, confirmatory factor analysis and structural equation modeling. Hands-on application of research methods is integrated throughout the course through the use of a statistical software application and real-world data.

Required Textbook:

None

Recommended Textbook:

Shi, L. Health Services Research Methods. Thomson Delmar Learning (2008). ISBN: 978-1428352292
Mehmetoglu, M & Jakobsen, T. Applied Statistics Using STATA. Sage Publications (2017). ISBN: 978-1473913233

Secondary Text: Additional articles, supplemental materials, and URLs/website addresses as assigned.

Course Credit: This is a three-credit hour course.

Required Resource: STATA statistical software version 15 or higher

Important Dates:

Class starts August 11th, 2021, and ends December 8th, 2021.

Thanksgiving Break: November 22nd to 26th 2021

The last day to withdraw without Academic Penalty is October 7th, 2021.

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.

CEPH DrPH 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

4. Propose strategies for health improvement and elimination of health inequities by organizing stakeholders, including researchers, practitioners, community leaders, and other partners
5. Communicate public health science to diverse stakeholders, including individuals at all levels of health literacy, for purposes of influencing behavior and policies
6. Integrate knowledge, approaches, methods, values and potential contributions from multiple professions and systems in addressing public health problems
7. Create a strategic plan
8. Facilitate shared decision making through negotiation and consensus-building methods
9. Create organizational change strategies
10. Propose strategies to promote inclusion and equity within public health programs, policies, and systems

11. Assess one's own strengths and weaknesses in leadership capacities including cultural proficiency
12. Propose human, fiscal and other resources to achieve a strategic goal
13. Cultivate new resources and revenue streams to achieve a strategic goal

Policy & Programs

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

Education & Workforce Development

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

DrPH Core Competencies in Health Policy

1. Demonstrate their readiness to work with communities to address public health problems.
2. Select and apply theoretically based interventions to address public health problems.
3. Apply appropriate research methods to address community health problems, particularly among rural and underserved populations.

Performance-Based Objectives

Upon completion of this course students should be able to:

1. Understand principles and foundations of public health and health services research and evaluation methods.
2. Design quantitative research/evaluation studies.
3. Identify appropriate quantitative methods for investigating common public health issues
4. Conduct quantitative data collection, management, and analysis.
5. Interpret and report quantitative data following current scientific standards.

(Turn to next page for course schedule)

Course Schedule:

Week	Topic	Readings & Activities	Assessment
1 Aug 12	Course Orientation Goals of Research and Evaluation	Syllabus Review Folio Course Orientation	
PART ONE: FOUNDATIONS OF HEALTH SERVICES AND EVALUATION RESEARCH			
2 Aug 17 & 19	Research Questions, Theory and Hypothesis & Ethics	Folio Module 1	Complete CITI Training
3 Aug 24 & 26	Research Study Designs	Folio Module 2	Complete CITI Training
4 Aug 31 & Sept 2	Sampling & Measurement	Folio Module 3	
PART TWO: QUANTITATIVE DATA COLLECTION			
5 Sept 7 & 9	Data Collection Approaches, Recruitment and Bias	Folio Module 4	Quiz 1 on Part One (Tuesday, first 30 mins of class)
6 Sept 14 & 16	Designing Surveys	Folio Module 5	
PART THREE: ANALYZING AND INTERPRETING QUANTITATIVE DATA			
7 Sept 21 & 23	Univariate Analysis & Bivariate Analysis	Folio Module 6	Quiz 2 on Part Two (Tuesday, first 30 mins of class)
8 Sept 28 & 30	Bivariate Analysis & Confounders, Mediation and Moderation	Folio Module 7	Assignment One Due (Thursday before class starts; Univariate Analysis)
9 Oct 5 & 7	Confounders, Mediation and Moderation	Folio Module 8	Assignment Two Due (Thursday before class starts; Bivariate Analysis)
10 Oct 12 & 14	Modeling –Linear Regression	Folio Module 9	
PART THREE: ANALYZING AND INTERPRETING QUANTITATIVE DATA			
11 Oct 19 & 21	Modeling – Logistic Regression	Folio Module 10	Assignment Three Due (Thursday before class)

Week	Topic	Readings & Activities	Assessment
			starts ; Linear and Logistic Regression)
12 Oct 26 & 28	Longitudinal Data Analysis	Folio Module 11	Research Project Draft 1 – Introduction and Methods
13 Nov 2 & 4	Dealing with Endogenous Variables	Folio Module 12	
14 Nov 9 & 11	Exploratory Factor Analysis, Confirmatory Factor Analysis & Structural Equation Modeling	Folio Module 13	Research Project Draft 2 – Results and Discussion
PART FOUR: APPLICATION TO EVALUATION RESEARCH			
15 Nov 16 & 18	Types and Approaches to Evaluation & Logic Models	Folio Module 14	Quiz 3 on Part 3 (Tuesday, first 30 minutes of class)
16 Nov 23 & 25	THANKSGIVING HOLIDAY	NO MODULE	NO ASSIGNMENT
17 Nov 30 – Dec 2	PROJECT PRESENTATIONS	NO MODULE	
18 Dec 7 & 9	FINAL PROJECT	NO MODULE	Research Manuscript Due

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.

Instructional Methods:

In-class meetings will be a combination of lecture, in-class discussion and labs. Generally, the first class meeting of the week will be dedicated to instruction, while the last meeting day of the week will be a lab. Class participation, written homework assignments, quizzes, and projects constitute the basis of student evaluation.

General Expectations

1. For every one-credit hour, you should expect to work roughly two hours outside the classroom each week. For example, for a three-credit hour course, during a regular fifteen-week semester, you should expect approximately ninety hours of work outside of class.

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 assessments, including exams.
4. Students are expected to produce quality work. Typos and grammar errors should be kept to a minimum. The format and readability of submissions will be taken into consideration when assigning a grade.
5. 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.

Response Times

During a typical workweek (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 a week of submission date.

Exceptions: I may 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.

All assignments will be promptly graded 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 complete any course requirement satisfactorily, 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.

Grading

Course Requirements:

- **Quizzes:** There will be at least three quizzes covering the concepts introduced in the class. Refer to course schedule for due dates.
- **Assignments:** There will be at least three assignments. Assignments will include data analysis assignments that apply the concepts covered. Refer to course schedule for due dates.
- **Research Project:** Students will work in groups to complete a quantitative research project using secondary data that the instructor will provide. Students are expected to apply skills and methods learned in the class to complete the project. Students are expected to develop

a research question, design a quantitative study, clean and analyze secondary data and report findings in the standard scientific format. The paper should be no more than 3000 words, and double-spaced. It should include a structured abstract (250 words), introduction, results, discussion, conclusion, and references (in APA style). Students will also **present** their findings to the class. Refer to course schedule for due dates.

- **Assignments:** Students will also complete several assignments throughout the semester. Each assignment tests students' mastery of the concepts and methodological approaches presented in the course.
- **Class Participation:** Discussion is an integral component of this course. Students are expected to engage in meaningful discussion with the instructor and peers over the course of the semester. Students will be expected to remain current with the readings, have completed the current week's assignments, ask questions, make comments, and agree/disagree with the professor and peers. Class participation will be evaluated based on the quality and frequency of such interactions, in addition to participation during in-class sessions. The instructor reserves the right to provide "pop-up" discussion assignments or quizzes that will count toward the class participation grade.

<u>Grade Weighting:</u>	Class Participation	10%
	Quizzes (3 *10%)	30%
	Labs and Assignments (3 * 10%)	30%
	Research Project	30%
Total		100%

<u>Grading Scale:</u>	90-100%	=	A
	80-89%	=	B
	70-79%	=	C
	60-69%	=	D
	0-59%	=	F

For calculation of your final grade, all grades above will be included.

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 complete any course requirement satisfactorily, please consult with the professor within a reasonable amount of time. *Nota Bene:* Extensions are not guaranteed and will be granted solely at the discretion of the professor. **NO EXTRA CREDIT PROJECTS WILL BE ASSIGNED!**

Policy on Late Submissions:

Students will be penalized for late submissions of assignments based on the following criteria:

- Assignment submitted within 24 hours after due date: 10% deduction
- Assignment submitted within 25-72 hours after due date: 25% deduction
- Assignment submitted within 73hours - 1 week after due date: 40% deduction
- Assignment submitted after one week: 50% deduction.

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. Attendance is required for in-class lectures.

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 ten days before 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)

Inclusive Excellence at Georgia Southern University

At Georgia Southern University, we are committed to supporting our students and fostering an environment that is free of bias, discrimination, and harassment in the classroom and in the broader University community. As such, we have an expectation that our learning community is inclusive and respectful. Our diversity may be reflected by differences in race, culture, age, religion, sexual orientation, gender identity, ability, political beliefs, socioeconomic background, and myriad other social identities and life experiences. The goal of inclusiveness, in a diverse community, encourages and appreciates expressions of different ideas, opinions, and beliefs, so that conversations and interactions that could potentially be divisive turn instead into opportunities for intellectual and personal enrichment.

We are a faculty that strives to model reflection, advocacy, and care for the community in order to work toward an equitable, democratic, and sustainable society. We value your participation in this process. If you believe that our courses, programs, or department fall short of this commitment, we encourage you to engage in dialogue with us.

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 Codebook, 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."

Disability-related Accommodations

Georgia Southern University is committed to providing reasonable accommodations to students with documented disabilities as required under federal law. Disabilities may include ADD or AD/HD, autism spectrum disorder, brain injury, chronic medical conditions, communication disorders, hearing loss, learning disabilities, mobility impairment, psychological disorders, visual impairment, or temporary injuries. The purpose of disability accommodation is to provide equal access to the academic material and equal access to demonstrate mastery of the material. If you have a disability and need accommodations, please contact the Student Accessibility Resource Center (SARC). You will need to meet with a SARC staff member who can help you gather documentation of your disability or refer you to an appropriate resource for assessment. Once documentation of the disability is approved, SARC staff will provide you with an accommodation letter detailing the approved accommodations which you should present to me so we can discuss and implement your accommodations. Disability accommodations work best starting at the beginning of the semester but can be approved and started at any point in the semester. Accommodations start at the time the accommodation letter is presented to faculty within reasonable timelines; accommodations are not given retroactively. SARC on the Statesboro campus is located on the second floor of Cone Hall and the phone number is (912) 478-1566. SARC for Savannah and Liberty campuses is located on the second floor of Memorial College Center and the phone number is (912) 344-2572.

Basic Needs Statement

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students Office for support. The Dean of Students Office web address is <https://students.georgiasouthern.edu/dean>. You may also reach the Dean of Students Office for the Statesboro campus at (912) 478-3326 or deanofstudents@georgiasouthern.edu. For the Armstrong and Liberty campuses, you can also reach the Dean of Students Office at (912) 344-2514 or rmdeanofstudents@georgiasouthern.edu. Furthermore, please notify the professor if you are comfortable in contacting the Dean of Students Office for support. This will enable the professor to provide any other resources that they may possess.

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/>

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.

STUDENT CONDUCT CODE

The Student Conduct Code is the official University publication governing student conduct and behavior. It is the responsibility of each student to become familiar with the rules and regulations governing student life. Student conduct procedures, appeal procedures, and disciplinary sanctions are found in the Student Conduct Code at <http://students.georgiasouthern.edu/conduct>. I acknowledge that I have read and understand this statement referencing the Student Conduct Code.

ACADEMIC DISHONESTY

The University goal is to foster an intellectual atmosphere that produces educated, literate people. Because cheating and plagiarism are at odds with that goal, they shall not be tolerated in any form. Students are expected to adhere to the rules and regulations as set forth in the Student Conduct Code. Therefore, all work submitted by a student must represent that student's own ideas and effort; when the work does not, the student has engaged in academic dishonesty. Plagiarism occurs when a person passes in another person's work as his or her own, borrows directly from another person's work without proper documentation, and resubmits his or her own work that has been previously submitted without explicit approval from the instructor. For example, academic dishonesty occurs whenever a student participates in any of the following: Cheating submitting material that is not yours as part of your course performance; using information or devices that are not allowed by the faculty; obtaining and/or using unauthorized materials; fabricating information, research, and/or results; violating procedures prescribed to protect the integrity of an assignment, test, or other evaluation; collaborating with others on assignments without the faculty's consent; cooperating with and/or helping another student to cheat; demonstrating any other forms of dishonest behavior. Plagiarism directly quoting the words of others without using quotation marks or indented format to identify them; using sources of information (published or unpublished) without identifying them; paraphrasing materials or ideas without identifying the source; self-plagiarism - resubmitting work previously submitted without explicit approval from the instructor; unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic material. NOTICE: The list above is intended only to provide general guidelines for recognizing and avoiding common types of academic dishonesty. It is in no way an exhaustive or comprehensive list of all the types of academic dishonesty. For more information about academic honesty, see the Student Conduct Code at <http://students.georgiasouthern.edu/conduct>. I acknowledge that I have read and understand the Academic Dishonesty Policy.

I have read the syllabus and understand the contents and course requirements.

Student Name (print)

Student Signature

Date