

North Carolina Central University - University Motto: "Truth and Service"

NCCU School of Education – H.M. Michaux, Jr. Building

Conceptual Framework:

"Preparing Educators for Diverse Cultural Contexts in the 21st Century"

Department of Educational Leadership

"Preparing School Leaders for Diverse Cultural Contexts and as Advocates for Social Justice in the 21st Century"

QEP Theme – Communicating to Succeed

Spring 2019 – Course Syllabus

EDGR 5910 - Introduction to Statistical Methods in Education

Andrew Jackl, Ph.D., Adjunct Professor

Contact Information

Office Phone: (919) 533-7731 or (919) 884-6331 (cellular) Classroom: School of Education Rm. **1079**

Email: ajackl@wcpss.net or ajackl@nccu.edu Face-to-Face Class Time: Mondays 7:00 – 9:30 PM

Office Hours: Mondays, Room 1079, 6:00 PM to 7:00 PM, and by appointment.

Course Description (EDGR 5910):

Introduction to Statistical Methods in Education is a graduate-level course in applied statistics relevant to education and social sciences. The course topics will include descriptive statistics, inferential statistics, and research designs, as well as data analysis using inferential statistical procedures. Candidates will compile, analyze, and interpret data in a culminating final paper. The course will prepare candidates to use statistical tools for making data-based decisions, and acquired skills will be directly applicable in multiple career fields.

Course Expectations:

Introduction to Statistical Methods in Education is a participatory, learning-centered course in which each member of the class is a learner and a teacher, a valuable source of knowledge, and is expected to contribute to the intellectual climate by elevating the level of inquiry and challenge in the course.

Required Textbook:

Gravetter, F.J. & Wallnau, L.G. (2013). Statistics for Behavioral Sciences (9th edition) by Wadsworth, Cengage Brain (ISBN 1133395716).

Additionally, various supplemental readings (mostly short) will be distributed by the instructor.

Foliotek Statement: Maintaining an electronic portfolio (i.e., 'Foliotek') is a REQUIREMENT for continued enrollment as a degree-seeking student in the School of Education at North Carolina Central University. You MUST maintain a Foliotek account while enrolled in the MSA Program, and you will be required to upload six capstone electronic evidences to the system. The university will use the information to track data and verify that you have met the competencies of your program of study – but more importantly – this system will serve as documentation of your proficiency in the standards for school executives and eligibility for licensure.

Course Goals

This course is designed to introduce students to the theory and application of statistical procedures in education clustered around the following topics: (1) descriptive statistics such as scales of measurement, central tendency, and standard deviation, (2) sampling, probability, and sampling distributions, and (3) inferential statistics, tests of significance (z, t, r, chi-square, etc.). Upon completing the course, students are expected to be able to calculate basic statistical tests, describe the statistical concepts examined in the course, and design and interpret research studies within their professional fields.

Student Learning Outcomes (SLO's)

Upon completion of this course, candidates will be able to:

1. Describe the meaning of major statistical concepts both verbally and computationally;
2. Compute frequencies, central tendency, variability, probability, z-score, t-tests (the one sample, two independent samples, and two related samples), correlations, and chi-square;
3. Conduct a hypothesis test using appropriate statistical procedures and understand the limitations of significance testing;
4. Design research studies using the t, r, and chi-square statistics;
5. Analyze data using statistical software and make data-based decisions;
6. Evaluate the quality, relevance, and utility of published educational research studies;
7. Become well-prepared for additional coursework in applied research methodologies.

Topics to be covered:

- A) Introduction to Educational Research
- B) Reviews and Critiques
- C) Sampling and Testing
- D1) Quantitative Research Methods
- D2) Qualitative Research Methods
- E) Surveys, Interviews, and Observations
- F) Statistical Analysis
- G) Experimentation
- H) Follow-up and Practical Applications

Assignments:

Three in-class exams, taken without books or notes @ 25 points each = 75 percent of grade
One written paper (research article critique) @ 15 points = 15 percent of grade
Class participation and punctual attendance @ 10 points = 10 percent of grade

Additional information about the written paper will be distributed by the instructor.

Evaluation & Grading Scale:

90 to 100 = A	
80 to 89 = B	<i>Time will pass.</i>
70 to 79 = C	<i>Will you?</i>
Below 70 = F	

Satisfactory Progress and Academic Dismissal

When a student's cumulative grade point average falls below 3.0, s/he is automatically put on academic probation for up to one calendar year. During that year, the student is to maintain contact with the Advisor, Department Chair, and/or the Associate Dean for graduate programs in the School of Education for advice and assistance. Failure to raise the cumulative grade point average to 3.0 within one calendar year will be cause for dismissal from your program of study.

If a student receives a grade of "C" in a course, s/he should meet with their advisor to develop a support plan before the next semester. A student who receives a grade of "F" or two "Cs" may not continue in graduate school unless his/her Department Chair submits in writing an acceptable recommendation to the Dean of the School of Education. If a student fails (earns a "C" or "F") a second time, s/he is dismissed from the degree program. The student may appeal the dismissal to the Graduate Council through the Dean of the School of Education.

Academic Integrity

As a center of learning, teaching, and research, North Carolina Central University charges its members, including students, to maintain patterns of behavior that enable these essential functions.

Academic Dishonesty Defined

Academic Dishonesty is defined as any conduct that is intended by the student to obtain for him/her or for others an unfair or false evaluation in connection with any examination or other work for academic credit. Cheating, fabrication, plagiarism, and complicity are examples of conduct that is academically dishonest.

Cheating is the unauthorized use of materials in connection with an examination or other work for academic credit, including, but not limited to:

- The use of books, notes, outlines, etc. during an examination where the instructor has not authorized use of such materials or information;
- Seeking unauthorized materials or information from others in connection with an examination;
- Giving or attempting to give unauthorized assistance to another person in connection with an examination;
- Obtaining or attempting to obtain unauthorized copies of examinations;
- Copying or attempting to copy from the work of another student during an examination;
- Bringing to an examination, or attempting to use during an examination, unauthorized answers which have been prepared prior to the examination; and
- Submitting for evaluation in a course, part or the whole of a work for which credit has been given previously.

Fabrication is the invention, counterfeiting, and/or alteration of quoted passages, data, procedures, experiments, sources, or other information in connection with any academic exercise.

Plagiarism is the use of the ideas, words, or works of another without attribution when the information provided is not common knowledge either in content or form and includes, but is not limited to:

- Quoting from the published or unpublished work of another without appropriate attribution;
- Paraphrasing or summarizing in one’s own work any portion of the published or unpublished materials of another without attribution; and
- Borrowing from another’s work, data, and facts that are not in the domain of common knowledge.

Complicity is the giving of assistance or the attempt to give assistance to another for the purpose of perpetrating academic dishonesty.

Confidentiality

Your experiences are an important part of your learning and you will be discussing them in this course. Please respect the privacy and dignity of the children and families with whom you work and use discretion. In casual conversations or social situations, do not relate stories from classrooms or schools that might be embarrassing to teachers or students, or that include sensitive information about a child or family. When discussing classroom situations in class, do so carefully. Mask the name of the student on any written or visual work shared in class or used in an assignment. If discussing teaching practice you have observed, be mindful of maintaining a tone of professional courtesy.

The Incomplete (I) Grade Policy

The Grade of I: The grade of “I” is assigned at the discretion of the instructor when a student who is otherwise passing (completed 75% of course work) and has not, due to circumstances beyond his/her control, completed all the work in the course. The missing work must be completed according to the written and signed agreement between the instructor and the student within the deadline set by the instructor, not to exceed one year from the end of the semester in which the “I” was assigned. The signed written agreement must be filed in the office of the department chair or dean, and a copy must also be placed in the instructor’s file at the same time that final grades are due. If the “I” is not removed during the specified time, it will automatically turn into an F or NP.

Attendance Policy

Attend class and be on time. Faithful, prompt attendance is expected for all regular class meetings in accordance with the University’s graduate class attendance policy. Absences and tardiness are not acceptable for future executives. A candidate can be dropped from the class roll when the candidate has been absent from class for the number of class meetings that equal a two weeks period. Time missed from class due to undocumented emergencies and illnesses, late arrivals, and early departures from class of more than 15 minutes are considered absences. Candidates representing the University on official business, which will require absences beyond the two-week period, must make pre-arrangements to be absent from the classes at the specific request of their university sponsor.

Cell Phone:

Cell phones and pagers should be silenced or turned off during class time.

Food and Drinks:

No food or drinks are allowed in computer labs, rooms with computers, or the Curriculum Media Center.

Recording Lectures:

Recording lectures (audio or video) is strictly prohibited.

Statement of Inclusion/Non-Discrimination

North Carolina Central University is committed to the principles of affirmative action and non-discrimination. The University welcomes diversity in its student body, its staff, its faculty, and its administration. The University admits, hires, evaluates, promotes, and rewards on the basis of the needs and relevant performance criteria without regard to race, color, national origin, ethnicity, sex, sexual orientation, gender identity, gender expression, age, disability, genetic information, veteran's status, or religion. It actively promotes diversity and respectfulness of each individual.

Student Accessibility Services (formerly Student Disability Services)

Students with disabilities (physical, learning, psychological, chronic or temporary medical conditions, etc.) who would like to request reasonable accommodations and services under the Americans with Disabilities Act must register with the Office of Student Accessibility Services (SAS) in Suite 120 in the Student Services Building. Students who are new to SAS or who are requesting new accommodations should contact SAS at (919) 530-6325 or sas@nccu.edu to discuss the programs and services offered by SAS. Students who are already registered with SAS and who would like to maintain their accommodations must renew previously granted accommodations by visiting the SAS website at www.nccu.edu/sas and logging into Eagle Accommodate. Students are expected to renew previously granted accommodations at the beginning of each semester, preferably during the first two (2) weeks of class. Reasonable accommodations can be requested at any time throughout the semester; however, they will not be effective retroactively. Students are strongly encouraged to contact their professors to discuss the testing and academic accommodations that they anticipate needing for each class.

Students identifying as pregnant or other pregnancy-related conditions who would like to request reasonable accommodations and services under Title IX must register with SAS.

Confidentiality and Mandatory Reporting

All forms of discrimination based on sex, including sexual misconduct, sexual assault, dating violence, domestic violence, and stalking offenses, are prohibited under NCCU's Sexual Misconduct Policy (POL 01.04.4). NCCU faculty and instructors are considered to be responsible employees and are required to report information regarding sexual misconduct to the University's Title IX Coordinator. The Sexual Misconduct Policy can be accessed through NCCU's Policies, Rules and Regulations website at www.nccu.edu/policies. Any individual may report a violation of the Sexual Misconduct Policy (including a third-party or anonymous report) by contacting the Title IX Coordinator at (919) 530-7944 or TitleIX@nccu.edu, or submitting the online form through the Title IX Reporting Form, located at www.nccu.edu/titleix.

Other Campus Programs, Services, Activities, and Resources

Other campus resources to support NCCU students include:

- **Student Advocacy Coordinator.** The Student Advocacy Coordinator is available to assist students in navigating unexpected life events (e.g. short-term illness/injury, loss of a loved one, personal crises) and guide them to the appropriate University or community resources. Students may also receive assistance with resolving some emergency financial concerns; understanding NCCU policies, rules and regulations; or general problem-solving strategies. Contact Information: Student Services Building, Room G19, (919) 530-7492, studentadvocacy@nccu.edu.
- **Counseling Center.** The NCCU Counseling Center is staffed by licensed psychologists and mental health professionals who provide individual and group counseling, crisis intervention, substance abuse prevention and intervention, anger management, and other services. The Counseling Center also provides confidential resources for students reporting a violation of NCCU's Sexual Misconduct Policy. Contact Information: Student Health Building, 2nd Floor, (919) 530-7646, counseling@nccu.edu.
- **University Police Department.** The University Police Department ensures that students, faculty and staff have a safe and secure environment in which they can live, learn, and work. The Department provides a full range of police services, including investigating all crimes committed in and around its jurisdiction, making arrests, providing crime prevention/community programs, enforcing parking regulations and traffic laws, and maintaining crowd control for campus special events. Contact Information: 2010 Fayetteville Street, (919) 530-6106, nccupdinfo@nccu.edu.

Writing Studio:

Dr. Karen Keaton Jackson, Director, kkjackson@nccu.edu, (919) 530-7554
339 Farrison-Newton Communications Building, writingstudio@nccu.edu

Email:

All candidates are expected and required to use their NCCU email addresses for communication with faculty and the university. Please check your email frequently, and at least 30 minutes before every class.

Inclement Weather and Unpredictable Events:

If weather conditions lead the NCCU administration to decide to cancel classes, our class will not meet. Call the Academic Affairs Office at (919) 560-6230 or listen to 90.7 FM if you want to verify any cancellations. If the instructor must miss class because of an emergency, you will be notified via email as soon as possible. You will be expected to use the scheduled class time to work on class assignments or evaluation requirements.

Students are encouraged to sign up for Eagle Alerts on the NCCU Emergency webpage.

Note: The last day to withdraw from the course with a grade of WC is **Wednesday, March 6, 2019.**

Tentative Course Schedule (Subject to Adjustment)

- Topic A:** Introduction to Educational Research
Topic B: Reviews and Critiques
Topic C: Sampling and Testing
Topic D: Quantitative (Part I) and Qualitative (Part II) Research Methods
Topic E: Surveys, Interviews, and Observations
Topic F: Statistical Analysis
Topic G: Experimentation
Topic H: Follow-up and Practical Applications

Date	Topic	Reading Assignment
M Jan 7	Course Overview Topic A	Chapter 1, Introduction to Statistics
M Jan 14	Topic B	Chapter 2, Frequency Distributions Chapter 3, Measures of Central Tendency
M Jan 21	UNIVERSITY HOLIDAY HONORING DR. MARTIN LUTHER KING – NO CLASS	
M Jan 28	Topic C	Chapter 4, Variability
M Feb 4	Topic C	Chapter 7, Distribution of Sampling Means
M Feb 11	Topic D, Part I Exam # 1, Topics A-C	Chapter 5, z-scores
M Feb 18	Topic D, Part II	Chapter 6, Probability
M Feb 25	Topic E, Part I	Chapter 9, Introduction to the <i>t</i> -statistic
M March 4	Topic E, Part II	Chapter 17, Chi-Square
M March 11	NCCU SPRING BREAK – NO CLASS	
M March 18	Topic F, Part I Exam # 2, Topics D-E	Chapter 10, <i>t</i> -test for Independent Samples
M March 25	Topic F, Part II	Chapter 11, <i>t</i> -test for Two Related Samples
M April 1	Topic G, Part I	Chapter 8, Introduction to Hypothesis Testing
M April 8	Topic G, Part II	Chapter 15, Correlation Chapter 17, The Chi-Square Statistic
M, April 15	Topic H, Part I	Chapter 18, The Binomial Test
M, April 22	Topic H, Part II	Chapter 19, Choosing the Right Statistics
M April 29	Scheduled Final Examination Day – 7:00 – 9:30 pm Exam # 3, Topics A-H – strong emphasis given to Topics F, G, & H Article Critiques Due	
F May 3	Final Grades Posted in Banner by 5:00 PM (deadline must be met for all graduating students)	