



**Savannah State University**  
**New Programs and Curriculum Committee**  
**Summary Page – Form I**

1. **Submitting College:** SOTE
2. **Department(s) Generating The Proposal:** Choose an item.  
Choose an item. (if needed)
3. **Proposal Title:** Research Methods in Engineering and Technology Education
4. **Course Number(s):** ETED 2202
5. **Course Title(s):** Research Methods in Engineering and Technology Education
6. **Effective Date:** Fall Year: 2016
7. **Brief Summary of Proposal:** The course covers the fundamentals of research in Engineering and Technology Education, different research methods (such as qualitative, quantitative, hybrid, etc.), the research process, ethical issues in research, research communication (academic writing, presentations, and oral communications), and related issues.
8. **Type of Proposal:** New Course If other, please describe: Click here to enter text.
9. **Impact on Library Holdings**  
Existing: Current holdings  
Additional: New purchases as needed  
Deletions: N/A
10. **Impact on Existing Programs:** None. This course is designed to meet GaPSC Rules for Teacher Preparation and more specifically the technology requirements of all education majors,. The specific rules satisfied by this course are 505-3-.01 REQUIREMENTS AND STANDARDS FOR APPROVING PROFESSIONAL EDUCATION UNITS AND EDUCATOR PREPARATION PROGRAMS and 505-2-.16 CERTIFICATION BY STATE-APPROVED PROGRAMS .
11. **Additional Resources Required**  
Personnel: N/A  
Non-personnel: N/A
12. **Approvals:**
  - Department Curriculum Committee Signature Kisha R. Cunningham Date 4/17/16
  - Department Chair Signature \_\_\_\_\_ Date \_\_\_\_\_
  - College Curriculum Committee Signature K. Ma Date 4/17/16
  - College Dean Signature [Signature] Date 04/18/16
  - Vice President of Academic Affairs Signature K. Holman Date 5/2/16  
(Chair of the New Programs and Curriculum Committee)

- Faculty Senate

Signature

Kenneth G. J. [Signature]

Date

5/3/16





**Savannah State University  
New Programs and Curriculum Committee  
Course Addition Page – Form II**

1. **Course Number:** ETED 2202
2. **Course Title:** Research Methods in Engineering and Technology Education
3. **Catalogue Description:** This course will examine research methods in Engineering and Technology Education. Students will be introduced to basic vocabulary, concepts, and methods of educational research. Students will learn the language of research, various methods for conducting research, how to identify and synthesize research literature, how to plan a research study that improves the practice of education or training, and how to formally report research findings.
4. **Rationale:** New Course to address Tech Ed Standard "Engineering Technology Systems"
5. **Credit Hours:** 2
6. **Pre-requisites:** None
7. **Syllabus:** See Attached
8. **Similarity to or duplication of Existing Courses:** N/A
9. **Textbook selection:** American Psychological Association (2010). Publication manual of the American Psychological Association (6th ed.). Washington, DC: Author Wiersma, W. & Jurs, S. (2009). Research Methods in Education: An Introduction. Boston: Pearson.
10. **Grading:** 90-100 A 80-89B 70-79C 60-69D Below 60F



**ETED 2202 – Research Methods in Engineering and Technology Education**  
Savannah State University  
School of Teacher Education

**Course Number:** ETED 2202

**Instructor:** Dr. Kisha R. Cunningham  
Office: 402 Hubert D  
Phone: 912-358-4180  
Email: [cunninghamk@savannahstate.edu](mailto:cunninghamk@savannahstate.edu)

**Course Title:** Research Methods in Engineering and Technology Education

**Office Hours:** TBD  
**Class Time:** TBD  
**Room:** TBD

**Instructor's Education:**

Ph.D. Workforce Education & Training Development, Pennsylvania State University, 2006  
M.S. Technology Education, North Carolina A&T State University, 1996  
B.S. Technology Education, North Carolina A&T State University, 1995

**Catalog Course Description:**

The course covers the fundamentals of research, different research methods (such as qualitative, quantitative, hybrid, etc.), the research process, ethical issues in research, research communication (academic writing, presentations, and oral communications), and related issues. In addition, writing and presentation skills would be systematically developed through lectures, homework assignments and term project.

**Course Objectives:**

This course is designed to introduce the student of education to qualitative and quantitative methods in Engineering and Technology Education. It is designed to provide theoretical and experiential knowledge involving collecting information about human actions and behaviors in classroom teaching and learning environments. All of the topics to be covered will be studied from the general engineering perspective applied to education. The course will foster an environment of academic exchange in the multi-disciplinary field of Engineering Technology Education.

**Semester Hours:**

**2 Credit Hour**

**Pre-requisites:**

**None**

Student Learning Outcomes: Upon Completion of this course, students will be able to:

- Understand basic concepts and definitions of educational research.
- Select a tentative research problem that will be subsequently developed into a research proposal.
- **Interpret** meanings of statistical information found in articles.
- **Demonstrate** writing skill using the American Psychological Association style format. (6th edition)
- **Critique** a research articles using knowledge of research methods.
- Engage in continued personal research, reading, and study of engineering and technology education.
- Review data analysis software to collect and analyze data.
- Define the concepts of validity and reliability and relate their role in the construction, selection, interpretation and use of survey instruments.
- Define and interpret types of validity, methods of estimating reliability, and standard error of measurement.
- Tabulate frequency data, graph data, and calculate measures of central tendency and variability, standard scores and correlation.
- **Demonstrate** use of SPSS for calculation of descriptive and inferential statistics.

**Required Texts:**

American Psychological Association (2010). Publication manual of the American Psychological Association (6<sup>th</sup> ed.). Washington, DC: Author

Fellows R. and Liu A. (2008), Research Methods for Construction, 3rd Edition, Wiley-Blackwell, Oxford, UK.

IM, NAE and NAS. 1995. "On Being a Scientist: Responsible Conduct in Research." Institute of Medicine (IM), National Academy of Engineering (NAE), and National Academy of Science (NAS).

McCuen, R. H. 1996. "The Elements of Academic Research." American Society of Civil Engineers (on reserve in the Engr. Library).

**Additional Readings (Readings will be available in D2L)**

Babbie, E. (1990). Survey research methods. (2<sup>nd</sup> ed.). Belmont, CA: Wadsworth.

Bem, D. (1987). Writing the empirical journal article. In M. Zanna & J. Darley (Eds.), The complete academic: A practical guide for the beginning social scientist (pp. 171-201). New York: Random House.

Creswell, J.W. (2003). Research Design: Qualitative, Quantitative, and Mixed Method California: Sage.

**Supplemental Materials/References**

Further readings from the approved reading list, newsletters and periodical from professional education organizations (e.g. NASSP, NAESP, NMSA, ASCD).

### Instructional Methods and Requirements:

This course will utilize various methods of instructions, i.e., lecture notes, small group analysis, class discussion and resolution of current educational issues. Students will also be responsible for class and online discussion based upon readings, lectures and videos. Students will further develop skills of reflection and practice in decision making, communication, group leadership, conflict resolution, and evaluative skills.

Students are expected to come to class prepared to discuss readings, and use computer technology and research for course assignments and final research paper. **ALL CLASS ASSIGNMENTS MUST BE TYPED AND PRESENTED TO THE INSTRUCTOR BEFORE CONCLUSION OF CLASS. ALL ONLINE ASSIGNMENTS MUST BE SUBMITTED BY 11:59PM ON DUE DATE. LATE PAPERS WILL BE DEDUCTED TWO POINTS FOR EACH DAY LATE.** Assignments stress critical thinking skills and emphasize concepts and ideas rather than memorization of facts.

### Grading Scale

The grading scale below will be used to determine your final grade:

90-100	A
80-89	B
70-79	C
60-69	D
Below 60	F

### Grading

Class Participation	10%
Writing Assignments	15%
Research Assignment	20%
Applied Projects	30%
Quizzes	5%
Midterm	10%
Final	10%
Total	100%

### Evaluation:

Mastery of the course objectives will be assessed via a combination written exams, abstract writing, presentations and performance-based assignments.

### Applied Projects

Applied projects and activities will be assigned throughout the course. Projects will be objectively assessed with regard to specific criteria. Projects are used to supplement and enrich each topic. All projects and activities must be completed to receive a final grade for the course.

### Chapter Exams

Exams cover content from class sessions and the chapters in the textbook. The questions will consist of short-answer questions (e.g., multiple-choice questions, true-false, matching) and a few essay questions. [If you are absent, the quiz MUST be taken NO LATER than Monday of the following week].



### Class Participation

Students are expected to arrive on time and stay for the duration of each class. Some portions of this course will demand that students participate in group discussions and activities. Students will be expected to contribute equally to such assignments, and to have completed individually assigned activities and readings in a timely fashion. Active participation is also expected during class discussion. At periodic intervals, open-ended *reflection questions*, or prompts, will be provided to students in class by the instructor. Students will respond to the questions in the form of typed *reflection entries* that will be posted on the course D2L Management site unless otherwise specified.

### Final Exam

The final exam will provide you an opportunity to synthesize important concepts in the course. The final will address ideas from readings, class discussions, assignments, and the lab.

### Midterm Exam

The midterm exam will provide you an opportunity to synthesize important concepts midway through the course. The midterm will address ideas from readings, class discussions, assignments, and the lab.

### Research Papers

Students will be assigned several research topics throughout the semester. For each paper, student will conduct a presentation to the class in an effort to reinforce content knowledge and academic language.

### Written Assignments

Written Assignments are comprised of written assignments completed in and outside of class. These assignments are designed to both help you understand and highlight the main points of the content you are reading. This is a very important part of your grade – it is there to help you but can also definitely hurt your grade if not done. You must post answers to assignments in the Assignment Inbox of D2L by the due date. The information covered in the article work for that week will be covered in the lectures and class work for that session. Writing Assignments **MUST** be submitted by 11:59pm on due date.

ASSIGNMENT	Point Percent	Points Earned	Total
Class Participation	10		
Writing Assignments	15		
Research Paper	20		
Applied Projects	30		
Quizzes	5		
Midterm	10		
Final	10		
<b>Total</b>	<b>100</b>		

All assignments must be professionally presented and documented according to APA style. Because of the intensity of the course there is no provision for make-up work.

### Schedule of Course Activities

Course calendar of activities, rubric, syllabus and related course material are posted in Desire2Learn (D2L) Course Management System.

- Week 1: Educational Research: Its Nature and Characteristics
- Week 2: Identification of a Research Problem and the Review of the Literature
- Week 3: Communicating and Evaluating Research Reports
- Week 4: Research Design in Quantitative Research
- Week 5: Experimental, Quasi-experimental, and Non-experimental Quantitative Research
- Week 6: Research Design in Qualitative Research
- Week 7: Historical Research
- Week 8: Ethnographic Research
- Week 9: Mixed, Modeling and Delphi Methods
- Week 10: Sampling Designs
- Week 11: Measurement and Data Collection
- Week 12: Data Analysis: Descriptive Statistics
- Week 13: Data Analysis: Inferential Statistics

### Course Policies

Students will adhere to the following course policies.

#### Absence Policy

Class attendance is important for the benefit of students. Students should attend every class for which the student is scheduled and should be held responsible for all work covered in the courses taken. In each case, the instructor should decide when the class absence constitutes a danger to the student's scholastic attainment and should make this fact known to the student at once. A student whose irregular attendance causes him or her, in the judgment of the instructor, to become deficient scholastically, may run the risk of receiving a failing grade or receiving a lower grade than the student might have secured had the student been in regular attendance.

Instructor will provide, within reason, opportunity to make up work for students who miss classes for other legitimate but unavoidable reasons. Legitimate, unavoidable reasons are those such as illness, injury, family emergency, or religious observance. If an evaluative event will be missed due to an unavoidable absence, the student should contact the instructor as soon as the unavoidable absence is known to discuss ways to make up the work. An instructor might not consider an unavoidable absence legitimate if the student does not contact the instructor before the evaluative event. Students will be held responsible for using only legitimate, unavoidable reasons for requesting a make-up in the event of a missed class or evaluative event. Requests for missing class or an evaluative event due to reasons that are based on false claims may be considered violations of the policy on Academic Integrity.

#### Tardy Arrival/Early Departure Policy:

You are expected to arrive on time for arrivals (and early departures) disrupt the class.

#### Course Amendments:

The instructor reserves the right to amend any aspects of the course outline as deemed necessary and useful to the goals of the course as well as the students' progress and success.

#### Savannah State University Policies

Students will adhere to Savannah to Savannah State University's Honor Code. Students committing acts of academic dishonesty is subject to disciplinary action.

#### Academic Dishonesty Policy

This policy is listed in the Student Handbook.

"Students are expected to demonstrate a high standard of academic honesty in all phases of academic work and college life. Academic dishonesty represents an attack on intellectual integrity without which there can be no true education. In taking tests and examinations, completing homework, projectory work, and writing papers, students are expected to perform honestly. Consequently, Savannah State has established the following policies for detected acts of academic dishonesty.

1. All cases of detected academic dishonesty will be reported by the faculty to the Vice President for Academic Affairs.
2. Plagiarism or cheating in any academic work will result in a recorded grade of "F" for that work.
3. A second offense during the course of a student's academic career at Savannah State will result in an "F" for the course in which the academic dishonesty has occurred. In addition, students who have committed a second offense of academic dishonesty during their academic career at Savannah State will be placed on academic probation for a minimum of one semester.
4. A third incidence of academic dishonesty during a student's career at Savannah State will result in immediate dismissal from the College."

#### American with Disabilities Act Statement/Special Services

Savannah State University is committed to providing reasonable accommodations to students with documented disabilities, as required under federal law. Disabilities may include learning disabilities, ADD, psychological disorders, brain injury, Autism spectrum disorders, serious chronic medical illnesses, mobility impairment, vision or hearing loss or temporary injuries. SSU also provides free, professional, confidential, individual and group counseling, homeless services and referrals. The Counseling and Disability Centers are located in King Frazier 233, 8a.m. - 5p.m. 912 358 3129. Another resource for mental health emergencies is the GA Crisis and Access Line, available 24 hours a day at 1-800-715-4225.

#### Statement of Non-Discrimination

Savannah State University supports the Civil Rights Act of 1964, Executive Order #11246, Title IX of the Educational Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act. No person shall, on the basis of age, race, religion, color, gender, national origin or disability, be excluded

from participation in, or be denied the benefits of, or be subjected to discrimination under any program or activity of the college.

Any individual with a grievance related to the enforcement of any of the above provisions should contact the Assistant Director of Human Resources, Ombudsperson.

Affirmative Action Statement

Savannah State University is an equal opportunity employer which assures that no person shall, on the grounds of race, creed, color, national origin, sex, age, or disability, be excluded from employment or participation in, be denied the benefits of, or otherwise be subjected to discrimination under any program or activity the institution conducts. Savannah State University complies with all state and federal affirmative action guidelines and criteria in its employment and hiring procedures and practices.

Equal Opportunity Statement

Savannah State University is an equal employment opportunity institution. The institution's policy is that all recruiting, hiring, and promotion in all categories will be accomplished without regard to race, creed, color, national origin, sex, sexual orientation, handicap, or age. All personnel policies and employees benefits will be administered in a nondiscriminatory manner. As a part of this policy, an equal employment opportunity/affirmative action office is maintained on campus.