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:** **Qualitative and Quantitative Research Methods in Mathematics Education**

4. **Course Number(s):** MAED 3001

5. **Course Title(s):** Qualitative and Quantitative Research Methods in Mathematics Education

6. **Effective Date:** Fall **Year: 2016**

7. **Brief Summary of Proposal:** This course will examine qualitative and quantitative methods. In qualitative research, interviewing, observations and document analysis will be the major source of data for understanding the phenomenon under study. Observations will involve collecting qualitative information about human actions and behaviors in classroom teaching and learning environments. This course will also advance the students ability to use scientific methods for quantitative data collection and analysis.

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: NA

10. **Impact on Existing Programs:** This course is offering an actual overview on mathematics education research methods. It contains a full description of the role of mathematics educational research in educational improvement. Identifies ethical and legal considerations involved in conducting and reporting research and demonstrates effective use of library and its resources as part of the research process. This course follow the School of Teacher Education mission to achieve excellence by guiding individuals as they develop the proficiency, expertise, and leadership consistent with their professional roles as teachers and satisfy 505-3-.27 MATHEMATICS EDUCATION PROGRAM rule (6) Professional Knowledge and Skills requirments (Candidates of secondary mathematics are lifelong learners and recognize that learning is often collaborative. They participate in professional development experiences specific to mathematics and mathematics education, draw upon mathematics education research to inform practice, continuously reflect on their practice, and utilize resources from professional mathematics organizations).

11. **Additional Resources Required**
    Personnel: None
    Non-personnel: None

12. **Approvals:**
    Department Curriculum Committee Krishna N Cunningham 4/19/16

SAVANNAH STATE UNIVERSITY

New Programs and Curriculum Committee
Course Addition Page- Form II

1. **Course Number:** MAED 3001

2. **Course Title:** Qualitative and Quantitative Research Methods in Mathematics Education

3. **Catalog Description:**

This course will examine qualitative methods and quantitative methods. In qualitative research, interviewing, observations and document analysis will be the major source of the qualitative data for understanding the phenomenon under study. Observations will involve collecting qualitative information about human actions and behaviors in classroom teaching and learning environments. This course will also advance the student's ability to use scientific methods for quantitative data collection and analysis.

4. **Rationale:**

This course is offering an actual overview on mathematics education research methods. It contains a full description of the role of mathematics educational research in educational improvement. Identifies ethical and legal considerations involved in conducting and reporting research and demonstrates effective use of library and its resources as part of the research process. This course follow the School of Teacher Education mission to achieve excellence by guiding individuals as they develop the proficiency, expertise, and leadership consistent with their professional roles as teachers and satisfy 505-3-.27 MATHEMATICS EDUCATION PROGRAM rule (6) Professional Knowledge and Skills requirements (Candidates of secondary mathematics are lifelong learners and recognize that learning is often collaborative. They participate in professional development experiences specific to mathematics

5. **Credit Hours:** 3 Credit Hours

6. **Pre-requisites:** Admission to School of Teacher Education

7. **Syllabus:** See attached

8. **Similarity to or duplication of Existing Courses:**

N/A

9. **Textbook Selection:**

Educational Research: Quantitative, Qualitative, and Mixed Approaches Authors: Burke Johnson and Larry Christensen Publisher: Sage Publication ISBN: 978-1-4129-5456-3. NCTM Journal for Research in Mathematics Ed

10. **Grading:**

Grading Scale: A (90-100); B (80-89); C (70-79); 0(60-69); F (Below 60)

Continuation of Rationale: and mathematics education, draw upon mathematics education research to inform practice, continuously reflect on their practice, and utilize resources from professional mathematics organizations).

16. Calculate basic statistical operations related to quantitative research.
17. Demonstrate use of SPSS for calculation of descriptive and inferential statistics.
18. Interpret meanings of statistical information found in articles.
19. Demonstrate writing skill using the American Psychological Association style format. (6thedition)
20. Critique a research articles using knowledge of research methods.
21. Write an applied research proposal.

Required Texts:

Title: Educational Research: Quantitative, Qualitative, and Mixed Approaches
Authors: Burke Johnson and Larry Christensen
Publisher: Sage Publication

ISBN: 978-1-4129-5456-3

Additional Readings (Readings will be available in D2L)

Recommended Texts

Title: Publication Manual of the American Psychological Association (6th edition)
Author American Psychological Association (Second Printing Only)
www.apastyle.org NCTM Journal for Research in Mathematics Education
All *assignments must be written according to APA style.* NOTE: 10 points will be deducted from assignments that do not follow APA style (5th or 6th edition). Please read the sections on referencing and plagiarism.

Assessments and Grading:

Methodology Discussions
Students will participate in a discussion each week covering a preassigned research method. Students are encouraged to be creative, yet thorough, in the presentation of the methodology. You should address the following questions regarding the research method: When is the method used? How is it used and what types of questions will it answer? What type of data collection is used? What type data analysis is most appropriate? How do you insure reliability and validity with this method? Keep in mind the concepts of internal and external validity and explain how they may or may not pertain to the method you are describing.

Be prepared to give examples of some research using this method. State the pros and cons regarding the use of each methodology. These questions are designed to help you get started.

Research Proposal
The applied research proposal will allow you to demonstrate your understanding of APA formatting, research design, data collection, and analysis as it pertains to data driven educational decisions. The paper is to be written in 12pt. Font (Times New Roman). A minimum of 15 pages will be needed to complete your paper. Your paper will include at least 15 references. Plagiarism (including copying work from another student, present or former) is strictly prohibited. You will be working on your proposal independently.

Formal Presentation of Research
A formal presentation of your research proposal will be due . You may use overheads or power point. The format will be consistent with presentations prepared for a professional meeting. Presentation slides will include, but are not limited to (a) Name and Affiliation, (b) Title, (c) Statement of the Problem or Purpose, (d) Review or Seminal articles, (e) Hypothesis, (f)

Activities:

- Select dates for Oral Critiques and
- Methodology
- SPSS
- Library in-service

Week2

Chapter 1: Introduction to Educational Research
Chapter 2: Quantitative, Qualitative and Mixed Research

- Strategic Reading
- Other Reading Strategies
- Guided Reading

Chapter 20: Research Report
Activities

- Parts of a research article.
- Critiquing an article. Group Work for critiquing practice
- Why Educational Method.
- Scientific Method Objectives of Scientific Research.
- Over View of Research in Mathematics Education

Week3

Chapter 3: Reviewing Literature and Developing Questions
Chapter 4: How to Write a Research Proposal

- Historical Method.

Activities:

- Introduction with Literature Review
- Explain how to identify problem for research/ Getting Focus
- Characteristics of quantitative, qualitative and mixed research.
- Discussion of three research paradigms.
- Article Critique
- APA formatting of a research proposal.

Week4

Chapter 5: Research Ethics

- Ethnographic Research Method

Activities:

Discussions on:

- IRB and Human Subjects
- Explanation of "The Code."
- Importance of Informed Consent.

Week5

Chapter 6: Standardized Measurement and Assessment

- Phenomenology Research

Week 10 Chapter 13: **Nonexperimental Research**
Chapter 16: **Mixed Research**
Activities:

Article Critique and Program Evaluation Research:

- Explain use of nonexperimental research in education.
- Examine extraneous variables.
- Causal relationships, strengths and weaknesses

Week 11 Chapter 17: **Descriptive Statistics**
Method Chapter 18: **Inferential Statistics. Statistics Practice Assignment**
Activities:

- Statistics used in data organization.
- Explanation of computation by hand and using SPSS.
- Things to Ponder.

Weeks 12&13 Power Point Presentations 15-20 minutes each.
Evaluate Presentations

Week 14 **All Work Due: Written critique and proposal**
Final Exam

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

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.