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:** Connections in P-12 Engineering by Design

4. **Course Number(s):** ETED 3211

5. **Course Title(s):** **Connections in P-12 Engineering by Design**

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

7. **Brief Summary of Proposal:** This course bridges connections of all sorts: those between different technological systems; engineering and science; and engineering/ technology and the real world of people, business and everyday life. The course integrates technology through the use of lab equipment and computers, which students use to design and create; validate findings; and investigate concepts, problems, and projects in greater depth. The emphasis on writing and the use of alternative types of assessment in this course is designed to help the student teachers to adapt their teaching strategies in order to meet every student's need.

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:** 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 [illegible] Date 4/17/16

- College Dean Signature _____ Date 04/18/16
- Vice President of Academic Affairs Signature _____ Date 5/2/16
  (Chair of the New Programs and Curriculum Committee)
- Faculty Senate Signature Kenneth A. Jordan Date 5/3/16

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

1. **Course Number**: ETED 3211

2. **Course Title**: Connections in P-12 Engineering by Design

3. **Catalogue Description**: This course bridges connections of all sorts: those between different technological systems; engineering and science; and engineering/ technology and the real world of people, business and everyday life. The course integrates technology through the use of lab equipment and computers, which students use to make design and create; validate findings; and investigate concepts, problems, and projects in greater depth. The emphasis on writing and the use of alternative types of assessment in this course is designed to help the student teachers to adapt their teaching strategies in order to meet every student's need.

4. **Rationale**: New Course to address Tech Ed Standard "Engineering Design in P-12"

5. **Credit Hours**: 4

6. **Pre-requisites**: ETED 3000

7. **Syllabus**: See Attached

8. **Similarity to or duplication of Existing Courses**: N/A

9. **Textbook selection**: Brown, Ryan, Brown, Joshua and Berkeihiser, Michael (2014). Engineering Fundamentals: Design, Principles, and Careers.

10. **Grading**: 90-100 A 80-89B 70-79C 60-69D Below 60F

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

- Discuss relationships among technologies and connections with other fields of study.
- Apply attributes of engineering design.
- Discuss measurable attributes of objects and the units, systems and processes of measurement.
- Formulate questions that can be addressed with data and collect, organize and display relevant data to answer them.
- Use and maintain technological products and systems.
- Select and use manufacturing technologies.
- Apply appropriate techniques, tools and formulas to determine measurements
- Select and use appropriate statistical methods to analyze data

Supplemental Materials/References

Further readings from the approved reading list, newsletters and periodical from professional education organizations (e.g. IWITIS, ITEEA, TSA, NSTA, ASEE,JETS, SAE, Technology Teacher, TIES, Tech Directions, CITE Yearbook, Robotbooks.com, Technology Review & Cambridge University Press).

Instructional Methods and Requirements:

This course will utilize various methods of instructions, i.e., lecture notes, small group analysis, and projects. 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.

Expectations

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

Class Participation	20%
Projects	50%
Quizzes	10%
Midterm	10%
Final	10%
Total	100%

ASSIGNMENT	Point Percent	Points Earned	Total
Class Participation	20		
Projects	50		
Quizzes	10		
Midterm	10		
Final	10		
Total	100		

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

Schedule of Course Activities

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

Week 1-3: Principles of Design – There are fundamental principles that impact human thinking and actions when engaged in the process of designing technological products. A combination of personal qualities such as creativity and resourcefulness and design constraints imposed by numerous factors are employed in a formal process to create new or refined technologies.

Human Factors Affecting Design
Environmental Factors Affecting Design
Industrial Factors Affecting Design
Design Through Research
Design – Market and Profit Influence
Design a Formal Process
Prioritizing Design Constraints
Refining Design
Design Requirements

Week 4-7: Engineering Resources - There are "core technologies" that involve "systems" within a range of sophistication critical to all technological innovations. These include: mechanical, structural, fluid, optical, electrical, electronic, thermal, biotechnical, and material. In order to acquire deeper understanding of these core technologies, mathematical and scientific concepts and calculations are used and documented via industry resources to guide specific applications in engineering design work. These documents are valuable reference materials used to ensure high quality designs.

Technology Transfer
Patent Process

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, projectoratory 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."