



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:** Principles of Engineering and Technology Education
4. **Course Number(s):** ETED 3000
5. **Course Title(s):** Principles of Engineering and Technology Education
6. **Effective Date:** Spring Year: 2014
7. **Brief Summary of Proposal:** Teacher candidates will examine the role of Engineering and Technology Education. Instruction will address technology standards and practice accepted as universal language within the global society. High priority is given to student skills development through hands-on laboratory experience
8. **Type of Proposal:** New Course If other, please describe: Click here to enter text.
9. **Impact on Library Holdings**
Existing: None
Additional: None
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: Click here to enter text.
Non-personnel: None
12. **Approvals:**
 - Department Curriculum Committee Signature _____ Date _____
 - Department Chair Signature _____ Date _____
 - College Curriculum Committee Signature *[Signature]* Date 11/15/13
 - College Dean Signature *[Signature]* Date 11/15/13
 - Vice President of Academic Affairs Signature _____ Date _____
(Chair of the New Programs and Curriculum Committee)
 - Faculty Senate Signature _____ Date _____

ETED 3000- Principles of Engineering and Technology Education

Savannah State University
School of Teacher Education

Course Number: ETED 3000

Instructor: Dr. Kisha R. Cunningham
Office: 110 Morgan Hall
Phone: 912-358-3068
Email: cunninghamk@savannahstate.edu

Course Title: Principles of Engineering and Technology Education
Office Hours: Monday- Friday 10am-12pm
Class Time: TBA
Room: Morgan Hall – Room TBD

Instructor's Education:

Ph.D. The Pennsylvania State University, 2006
M.S. North Carolina A&T State University, 1996
B.S. North Carolina A&T State University, 1995

Catalog Course Description:

This course is an introduction to Engineering and Technology Education. Emphasis will be placed upon the understanding of engineering and technology concepts including the philosophy, mission, content, facilities, and the development of teaching/learning activities that align with Technology Education Standards and student driven outcomes in Engineering and Technology.

Course Overview:

The purpose of this course is to offer the candidates a contextual view of education as a community of teachers and learners immersed in a complex system of institutions, norms, beliefs, regulations, and instructional practices. Interconnected to this view will be the role of Technology Education as it fits into this system. Instruction will address technology standards and practice accepted as universal language within the global society. High priority is given to student skills development through hands-on laboratory experience. Students will engage in modeling activities that will connect curriculum and pedagogical methods within lecture and laboratory environments. Course is required for students who are seeking teacher certification.

Semester Hours:

3 Credit Hours

Pre-requisites:

Admittance into Teacher Education

Required Texts:

Wright, Thomas, Brown, Ryan (2012). Exploring Design, Technology, & Engineering
Goodheart-Willcox.

Course Objective:

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

- Develop an understanding of the characteristics and scope of technology and engineering.
- Develop an understanding of the core concepts of technology and engineering.
- Develop an understanding of the relationships among technologies and the connections between technology and engineering.
- Develop an understanding of the cultural, social, economic, and political effects of technology.
- Develop an understanding of the effects of technology and engineering on the environment.
- Develop an understanding of the role of society in the development and use of technology.
- Develop an understanding of the influence of technology on history.
- Describe the steps of the engineering design process and the purpose of an engineering notebook.
- Develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.
- Students will develop abilities to apply the design process.
- Students will develop the abilities to use and maintain technological products and systems.
- Students will develop the abilities to assess the impact of products and systems as it relates to technology and engineering.
- Students will develop an understanding of and be able to select and use energy and power technologies; information and communication technologies; transportation technologies; manufacturing technologies; construction technologies; civil engineering; electrical engineering; medical technologies; and agricultural and related biotechnologies.

Recommended Optional 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.

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%
Special Problem in Technology/Engineering Education	10%
Research Assignment	10%
Technology Projects	20%
Quizzes	10%
Midterm	10%
Final	<u>20%</u>
Total	100%

Class Participation (20%)

Each student will lead a class discussion. Students are required to correspond on the Class bulletin board in Taskstream weekly during the semester to provide critical commentary and reflection. Students will reflect on how class discussion, class readings, class video affected the way in which they view the education profession. Weekly discussion questions will be posted on Taskstream every Monday and are due at 11:59pm on Friday.

Special Problems in Technology/Engineering Education (10%)

Each student will critically engage in meaningful design and problem solving activities that make a difference in society.

Research Assignment (10%)

Writing Assignments should be 4 pages in length, including references, and is to be submitted by 11:59pm on due date. No late papers will be accepted.

Technology Projects (20%)

Students will engage in their study of technology/engineering. Through projects students will 1) Gain a basic knowledge of technology, 2) Apply technology, 3) Assess technology; and 4) Develop leadership skills.

Quizzes (10 %)

Quizzes will be given periodically at beginning of class. There is NO make-up for quizzes. See course at a glance for week of Quizzes.

Midterm Exam (10%)

Test covers Week 1-7

Final Exam (20%)

Test covers all objectives

Evaluation:

ASSIGNMENT	Point Percent	Points Earned	Total
Class Participation	20		
Special Projects	10		
Research Paper	10		
Technology Projects	20		
Quizzes	10		
Midterm	10		
Final	20		
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 One

What Is Technology?
What Is Engineering?
Technology as a System
Context of Technology
People, Time, Money, and Technology

Week Two

Tools and Technology
Materials and Technology
Materials Engineering

Week Three

Energy and Technology
Energy-Conversion Technology
Electrical Engineering

Week Four

Information and Technology
Information and Communication Technology
Engineering Drawings

Week Five

Invention and Innovation/The Design Process
Engineering Notebooks

Schedule of Course Activities Continued

Week Six

Identifying Problems
Researching Problems

Week Seven

Midterm
Creating Solutions
Selecting and Refining Solutions

Week Eight

Modeling Solutions
Testing Solutions

Week Nine

Communicating Solutions
Improving Solutions
Computer Engineering

Week Ten

Agricultural and Related Technology
Medical Technology
Bioengineering

Week Eleven

Construction Technology
Civil Engineering

Week Twelve

Manufacturing Technology
Manufacturing Engineering

Week Thirteen

Chemical Engineering

Week Fourteen

Transportation Technology
Mechanical Engineering
Aerospace Engineering

Week Fifteen

Technological Impacts
Engineering Impacts
The Future of Technology & Engineering
Final Exam

Course Policies

1. Late and handwritten assignments will not be accepted.
2. All assignments must be professionally presented and documented according to APA style.
3. Because of the intensity of the course there is no provision for make-up work.
4. Students will adhere to Savannah to Savannah State University's Honor Code. Students committing acts of academic dishonesty is subject to disciplinary action.

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 each class and to remain until class is dismissed. Late 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

Incomplete Grades

Courses in which a student received a grade of "I" MUST be completed within the following semester, excluding summer sessions, otherwise these grades become "F". The responsibility rests with the student in making up the work required, or taking the examination to change an "I" within the allotted time.

Withdrawal from Course

A student may withdraw from a course during the first week of classes with no entry on his or her official college transcript. From the second through the tenth week of classes, a student may withdraw from a course with a grade of W on the transcript. A student MUST complete the proper form in the Registrar's Office.

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. If you are a student who is disabled as defined under the Americans with Disabilities Act and require assistance or support services, please seek assistance through the Center for Disability Services. The purpose of disability accommodation is to provide equal access to the academic material and equal access to demonstrate mastery of the material. Students with disabilities must meet all the academic requirements and standards of the class, including the attendance policy. *If you have a disability and need accommodations, please contact Amelia Castilian-Moore, Coordinator of Disability Services at (912) 358 3115 or moorea@savannahstate.edu. The Office of Counseling and Disability Services is located in King Frazier 233.* You will need to meet with Ms. Castilian-Moore, who can help you gather documentation of your disability or refer you to an appropriate resource for assessment. Once documentation of the disability is gathered and approved, Ms. Castilian-Moore will provide you with an Accommodation Letter, detailing the appropriate, approved accommodations, which you should present at the **BEGINNING OF THE TERM** so we can discuss and implement your accommodations.

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.

SYLLABUS ACKNOWLEDGEMENT FORM

- I have received a copy of the ETED 3000 course syllabus in person.
 - I have read and understand the content.

Name _____
(Please print)

Signature _____

Date _____

(You must submit this form to the instructor after the first week of class.)