



**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:** Fall      **Year:** 2016
7. **Brief Summary of Proposal:** This course is designed to provide students with experience in the application of the principles of physics and mathematics as they relate to technological systems. Instruction covers seven technical principles: force, work, rate, resistance, energy, power, and force transformers, emphasizing how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems. Students will gain experience with preparing lessons that cover these principles. There is a 15 hour field experience component to this course.
8. **Type of Proposal:** Course Change 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 Lunnaylamo Date 4/17/16
  - Department Chair      Signature \_\_\_\_\_ Date \_\_\_\_\_
  - College Curriculum Committee      Signature [Signature] Date 4/17/16
  - College Dean      Signature [Signature] Date 4/18/16
  - Vice President of Academic Affairs      Signature [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 Change Page – Form IV**

**1. Course Number**

Current: ETED 3000

New: ETED 3000

**2. Course Title**

Current: Principles of Engineering and Technology Education

New: No Change

**3. Catalog Description**

Current: 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.

New: This course is designed to provide students with experience in the application of the principles of physics and mathematics as they relate to technological systems. Instruction covers seven technical principles: force, work, rate, resistance, energy, power, and force transformers, emphasizing how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems. There is a 15 hour field experience component.

**4. Rationale:** Emphasis on Engineering and Technology Education Standards

**5. Library Resource Statement**

Existing: N/A

Additional: Library Research Guide

Deletions: N/A

**6. Credit Hours**

Current: 3

New: 3

**7. Pre-requisites**

Current: [Click here to enter text](#)

New: ETED 2500

Deletions: N/A

**8. Syllabus:** See Attached

**9. Similarity to or Duplication of Existing Courses:** N/A

**10. Textbook Change (include title, author and ISBN#)**

Current: Wright, Thomas, (2012). Technology & Engineering. Goodheart-Willcox.

New: Wright, T. and Brown, R. (2012). Exploring Design, Technology, and Engineering. Goodheart-Willcox.

**11. Grading Method**

|          |           |        |        |        |           |
|----------|-----------|--------|--------|--------|-----------|
| Current: | 90-100 A  | 80-89B | 70-79C | 60-69D | Below 60F |
| New:     | No Change |        |        |        |           |

## 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](mailto:cunninghamk@savannahstate.edu)

Course Title: Principles of Engineering and Technology Education

### 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 designed to provide students with experience in the application of the principles of physics and mathematics as they relate to technological systems. Instruction covers seven technical principles: *force, work, rate, resistance, energy, power, and force transformers*, emphasizing how each principle plays a unifying role in the operation of mechanical, fluid, electrical, and thermal systems in high-tech equipment.

### Course Objectives:

Upon completion of this course students will be able to apply principles of technology to address design briefs in 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. There is a 15 hour field experience component to this course. Verification of professional liability insurance and a clear criminal background check is required prior to placement in the field experience. Course is required for students who are seeking teacher certification.

### Semester Hours:

3 Credit Hour

### Pre-requisites:

ETED 2500

### Required Texts:

Wright, T. and Brown, R. (2012). Exploring Design, Technology, and Engineering. Goodheart-Willcox.

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

- Build a simple product using secondary manufacturing processes
- Program a robot with a teach pendant.
- Create a balsa-wood bridge and determine its failure weight.
- Build a product using a continuous production line.
- Make a block cut relief image carrier to print an image.
- Develop a full digital storyboard for an advertisement to promote TSA, TEECA or ITEEA.
- Design a land vehicle (powered by a rubberband) that has all five vehicle systems.
- Build and fly a model rocket.
- Build a computer-controlled mechanical model representing controls.
- Build a land vehicle and develop an electric power system for the vehicle.
- Construct a simple device to change wind energy into rotating mechanical motion.
- Discuss the historical development and use of fermentation in food processing.
- Build a prosthetic limb.

#### 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.

#### 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 | 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            |               |       |
| 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 |

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

Processing Resources

#### Week 2

Manufacturing Products

#### Week 3

Constructing Structures

#### Week 4

Using and Servicing Products and Structures

#### Week 5

Using Technology to Communicate  
Printed Graphic Communication  
Photographic Communication

#### Week 6

Telecommunication  
Computer and Internet Communication



### Week 7 & 8

Using Technology to Transport  
Transportation Vehicles  
Operating Transportation Systems

### Week 9 - 11

Energy: The Foundation of Technology  
Energy-Conversion Systems  
Electronics

### Week 12

Agricultural and Related Biotechnologies  
Food Processing Technologies

### Week 13

Medical and Health Technologies

### 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.