### COURSE REQUEST ROUTING FORM

**FLORIDA A&M UNIVERSITY**

**DATE:** 3/25/14

Department Submitting Request: Secondary Education, Technology Education & Foundations

**Type of Request:** New course [X]  Course change [ ]  Course termination [ ]

Proposed listing (new course / course change):

**Title:** INTRODUCTION TO STEM EDUCATION  
**Prefix & number:** ETE 2210C

Current listing (course change / course termination):

**Title:**  
**Prefix & number:**

Submitted by:  
Chairperson/Division Director:  
Date: 3/25/14

Approved by:  
Academic Unit Curricular Committee:  
Date: 3/30/14

Dean Academic Unit:  
Date: 4/25/14

University Committee Chair:  
Date: 5/1/14

President, Faculty Senate:  
Date: 5/12/14

Provost or Designee:  
Date:  

* Academic Unit is the Department's / Division's College, School or Institute.

*Initials: 1/15/14
Return completed form to:
Statewide Course Numbering System
Florida Department of Education
335 West Gaines Street, Room 1454
Tallahassee, Florida 32399-0400
(850) 488-6402, SunCom 778-6402

Florida Department of Education
Statewide Course Numbering System
NEW COURSE TRANSMITTAL FORM
(See instructions on reverse side)

PART I: NEW COURSE INFORMATION TO BE COMPLETED BY THE INSTITUTION

<table>
<thead>
<tr>
<th>Institution Name</th>
<th>Institution Code</th>
<th>Instructional Unit or Department</th>
</tr>
</thead>
<tbody>
<tr>
<td>Florida A&amp;M University</td>
<td>001480</td>
<td>College of Education</td>
</tr>
</tbody>
</table>

Recommended SCNS Course Identification:
Discipline (SMA) 2 5 Prefix E T B Level 2 Course Number X X X Lab Code C

Institution's Course Title: Introduction to Stem Education

Effective Date (first date course will be offered):

<table>
<thead>
<tr>
<th>Amount of Credit</th>
<th>Type of Credit</th>
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</thead>
<tbody>
<tr>
<td>3</td>
<td>College</td>
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Total Clock Hours: 3

Course Description (Course syllabus must be attached): This laboratory based course is an introduction to STEM and the technologies that can be implemented in K-6 classrooms. This course is designed for students who are education majors as well as technology education majors. The overarching goals of this course are to offer each student the opportunity to design and build teaching and learning activities that integrate concepts related to Science, Technology and Mathematics (STEM) principles and standards, communication, reading literacy, and social science with technology.

Prerequisites:

Corequisites:

All faculty teaching this course have completed at least 18 graduate semester hours in the teaching discipline and hold at least a masters degree.

<table>
<thead>
<tr>
<th>Degree Type (Mark all that apply):</th>
<th>Yes</th>
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<tbody>
<tr>
<td>V.C. (PSAV)</td>
<td></td>
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<tr>
<td>A.T.C.</td>
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<td>A.A.S.</td>
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<td>T.C.</td>
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<tr>
<td>A.S.</td>
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Gordon Rule Course?

Other (specify):

Number of Words

General Education Requirement (check all applicable):

<table>
<thead>
<tr>
<th>Communications</th>
<th>Math</th>
<th>Social Sciences</th>
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<tr>
<td>Humanities</td>
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<td>Natural Science</td>
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Category of Instruction:

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<tr>
<th>Introductory</th>
<th>Intermediate</th>
<th>Advanced</th>
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Name of Faculty Contact and Telephone Number

Signature of Institution Contact

Date Signed

PART II: TO BE COMPLETED BY FACULTY DISCIPLINE COMMITTEE REPRESENTATIVE

<table>
<thead>
<tr>
<th>Gordon Rule Course?</th>
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</thead>
</table>

Signature, Faculty Discipline Committee Representative

Date

PART III: SCNS STAFF USE ONLY

<table>
<thead>
<tr>
<th>Signature, SCNS Staff</th>
<th>Date Entered</th>
<th>Correspondence Number</th>
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</thead>
</table>
Course Number and Title: ETE 2210C Introduction to STEM Education

Catalog Data: This laboratory-based course is an introduction to STEM and the technologies that can be implemented in K-6 classrooms. The course is designed for students who are education majors as well as technology education majors. The overarching goals of the course are to offer each student the opportunity to design and build teaching/learning activities that integrate concepts related to Science, Technology, Engineering, and Mathematics (STEM) principles and standards, communication, reading literacy, and social science, with technology.

Textbook: TBA & Online Resources
Instructor: Dr. David W. White

Objectives:
1. Identify, explain and analyze the five criteria selected by the Technology Education for Children Council, as essential components for a quality STEM education program.
2. Identify and contrast the learning psychology and developmental ability of elementary students as compared with secondary students.
3. Identify at least six technological models of teaching that are most appropriate for organizing learning activities at the elementary level.
4. Describe and give several examples of how the study of STEM concepts at the primary and secondary levels can serve as methods of integrating the study of all subject areas, and is not an area of study unto itself.
5. Utilize the Florida Technology Education, national Standards for Technological Literacy, and other content standards for curriculum development throughout the course.
6. Develop and diagram a simple taxonomic analysis of the study of integrative STEM concepts.
7. Identify, plan, organize and write one lesson plan and SLA (STEM Learning Activity) for each of the four technical systems.
8. Build an operational prototype that would be representative of what a K-12 student might build as part of each of the above names four teaching plans.
9. Demonstrate an attitude indicating a very high level of concern for student safety while using tools.
10. Demonstrate the ability to identify, gather and adapt inexpensive materials from which prototypes can be built.
11. Select, analyze and evaluate readings for appropriateness in age, level, and content.

Topics Covered:
Outline of the Course
1. Introduction to the Study of STEM Concepts
2. Primary Learning Constructs for the Elementary and Secondary Students
3. The Psychology of Learning and Teaching for Elementary and Secondary Students
4. The Classroom as a STEM Laboratory: Organizational Paradigms
5. Creating, Organizing, Planning and Implementing STEM Learning Activities
6. Prototype Design, Development, Production and Evaluation
7. Technological Literacy for K-12 Children

Level of computer usage: Elementary/Intermediate
Modes of Instruction: Lecture/Lab Discussion Blackboard
Core Curriculum Course: No
Availability to other Majors: Education Majors Only