



**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.

3. Proposal Title: Biology Literacy and Science Education Capstone

4. Course Number(s): BIED 4418

5. Course Title(s): Biology Literacy and Science Education Capstone

6. Effective Date: Fall ☒ Year: 2016

**7. Brief Summary of Proposal:**

This course will review content area concepts, biological literacy and science teaching principles, methods, and techniques in preparation for licensure. Teacher candidates will produce a final product and portfolio of teacher preparation materials.

8. Type of Proposal: New Course ☒ If other, please describe:

**9. Impact on Library Holdings**

Existing: Current holdings

Additional: New purchases as needed

Deletions:

**10. Impact on Existing Programs:**

This course is designed to meet GaPSC rules for teacher preparation and more specifically, biology 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: None

Non-personnel: None

**12. Approvals:**

- Department Curriculum Committee: Signature Krista R. Cunningham Date: 4/17/16

- Department Chair: Signature \_\_\_\_\_ Date: \_\_\_\_\_

- College Curriculum Committee: Signature [Signature] Date: 4/17/16

- College Dean: Signature [Signature] Date: 5/18/16

- Provost/VP 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 Addition Page – Form II**

1. **Course Number:** BIED 4418
2. **Course Title:** Biology Literacy and Science Education Capstone
3. **Catalogue Description:** This course will review content area concepts, biological literacy and science teaching principles, methods, and techniques in preparation for licensure. Teacher candidates will produce a final product and portfolio of teacher preparation materials.
4. **Rationale:** To provide teacher candidates experience/exposure to the tasks and skills of laboratory teachers to develop the skills and dispositions of effective biology teachers.
5. **Credit Hours:** 3
6. **Pre-requisites:** Admission to the School of Teacher Education, BIED 4416, BIED 4417, Biology Content Area Courses
7. **Syllabus:** attached
8. **Similarity to or duplication of Existing Courses:** None
9. **Textbook selection:** None
10. **Grading:** See syllabus

**BIED 4418 Biology Literacy and Science Education Capstone**  
**School of Teacher Education**  
**Savannah State University**  
**Spring 2015**

**Course Number:** BIED 4418  
**Section:** 01  
**Course Credit Hours:** 03  
**Class Meetings:** TBD  
**Class Location:** TBD

**Instructor & Title:** Andrea L. Moore, PhD  
**Office Location:** Drew-Griffith 125  
**Telephone:** 912-358-4441  
**e-Mail:** moorean@savannahstate.edu  
**Office Hours:** TBD

**PREREQUISITES:** Admission to the School of Teacher Education, BIED 4416, BIED 4417, Biology Content Area Courses

**COURSE DESCRIPTION:** This course will review content area concepts, biological literacy and science teaching principles, methods, and techniques in preparation for licensure. Teacher candidates will produce a final product and portfolio of teacher preparation materials

**STUDENT LEARNING OUTCOMES:**

By the end of the course, students will be able to:

- a) **demonstrate** competency in the core concepts for biological literacy and core competencies and disciplinary practice as outline in the Vision and Change for Undergraduate Biology Education Report and Georgia Teacher Certification Exam
- b) **demonstrate** competency in teaching praxis
- c) **compile** a teaching portfolio of demonstrated competencies

**PEDAGOGICAL APPROACH:** This is a blended course, which means that some instruction will be delivered face-to-face and some through electronic (online) format. Students will engage in traditional lectures and cooperative learning exercises such as discussions in class and/or web-based. Students will engage in hands-on and formative assessments in class each week. Mentors will be identified or assigned on or before the end of the first week of classes.

**REQUIRED MATERIALS:** Composition book, access to the electronic portfolio and classroom management system

**Core Concepts for Biological Literacy**

1. Evolution: The diversity of life evolved over time by processes of mutation, selection, and genetic change
2. Structure and function: Basic units of structure define the function of all living things.
3. Information flow, exchange, and storage: The growth and behavior of organisms are activated through the expression of genetic information in context.
4. Pathways and transformations of energy and matter: Biological systems grow and change by processes based upon chemical transformation pathways and are governed by the laws of thermodynamics.
5. Systems: Living systems are interconnected and interacting.

## Core Competencies and Disciplinary Practice

Knowledge of concepts and the development of competencies form the bases for the practice of any discipline, but particularly in the sciences. All students need to develop the following competencies:

1. Ability to apply the process of science
  - Formulate hypotheses
  - Design experiments with attention to controls
  - Test hypotheses using experiments and observations
  - Interpret and evaluate data
  - Participate in authentic research experiences
2. Ability to use quantitative reasoning, modeling, and simulation
  - Understand quantitative approaches to biology, including statistics, analysis of dynamic systems, and mathematical modeling
  - Understand how mathematical and computational tools can be used to describe complex living systems
  - Practice using quantitative skills and/or computer modeling to address biological problems
3. Ability to participate in interdisciplinary science
  - Understand how integrating across levels of biological organization can lead to greater insights into biological processes
  - Understand that other disciplines, including computer science and social science, can inform our understanding of biology
  - Apply concepts, both across biology and outside of biology, that demonstrate interdisciplinary understanding
  - Develop skills for participating in research teams
4. Ability to effectively collaborate and communicate in the scientific arena
  - Interpret and communicate complex biological concepts
  - Critically evaluate scientific literature and communicate research findings to broad audiences
  - Possess skills in effective communication, including writing, visual interpretation, and oral presentation
5. Ability to appreciate the feedbacks between science and society
  - Understand the need for biological research to address pressing societal concerns
  - Critically evaluate the impacts of discoveries on society
  - Participate in discussions on the ethical implications of biological research

“Vision and Change in Undergraduate Biology Education: A view for the 21st century.”

**GRADE DETERMINATION:**

Grades will be computed as follows:

Class Activities	20%
Resume/Curriculum Vitae and Job Search	20%
Certification Exam Practice Score	10%
Ethics Assessment	10%
e-Portfolio (and submission to edTPA)	30%

Final Grades will be based on the following rankings:

A	90-100%	B	80-90%	C	70-80%	D	60-70%	F	<60%
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**COURSE POLICIES****Attendance**

Attendance is mandatory. With the exception of University approved activities, it is expected that students should attend and be punctual to their classes, laboratories, and officially scheduled class requirements. Oversleeping, forgetting, scheduling other events (e.g. dentist appointments) are unexcused absences. For an absence to be excused, it must be brought to the instructor's attention and discussed/approved by the instructor prior to the day in which the student is to miss class, with the exception of emergencies. Whether you are present or not, you are responsible for all assigned material, and for all material presented in class. Please do not ask if it is okay for you to miss class or if what is covered in class on a given night is important; the decision to miss class is yours alone—you do not need nor will you receive my permission.

**Academic Integrity**

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, laboratory work, and writing papers, students are expected to perform honestly. Consequently, Savannah State has established policies for detected acts of academic dishonesty. See section on Academic Misconduct in the Student Handbook.

**Make Up and Late Assignments**

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 completed during the time allotted. All online assignments must be submitted by the deadline on the due date.

**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.