

## **UNDERGRADUATE SECONDARY SCIENCE EDUCATION PROGRAM**

### **PURPOSE AND NATURE OF THE CURRICULUM:**

The Undergraduate Secondary Science Initial Licensure Programs are designed to prepare candidates to help secondary school students become active, informed, scientifically literate, and responsible citizens. Program candidates will interpret and understand how the sciences increase students' awareness of the physical and natural world. Program candidates will help secondary students acquire and perfect the skills of individual and group inquiry and help students examine a broad range of science concepts. In addition, program candidates will acquire the knowledge, skills, attitudes, and values that will enable them to assist secondary students in their efforts at being problem-solvers, good decision-makers, and wise planners.

### **GOALS OF THE PROGRAM:**

- 1) The program will enhance the development of initial science teachers through participation in a planned curriculum resulting in an initial licensure in secondary science.
- 2) The program will develop candidates who understand the philosophy and mission of secondary science education.
- 3) The program will develop candidates who understand human development and the implications for secondary education.
- 4) The program will develop candidates who critically evaluate the historical and contemporary conceptualizations of the sciences.
- 5) The program will provide for the development of skills required to formulate objectives, use resources, select content, use effective teaching strategies, evaluate learning outcomes, and interact with students, parents, and the community.
- 6) The program will develop the candidate's awareness of the necessity for continuing education and professional development.

### **PROGRAM IN INTEGRATED SCIENCE:**

The new baccalaureate program in integrated science provides an opportunity for students to develop a knowledge base in the sciences, explore one science area in depth, and study the interconnectedness of the sciences in real world situations. The program will be the foundation for a comprehensive science teacher licensure program, and provides a valuable undergraduate program for students interested in a technical foundation to accompany a liberal education. It will serve students interested in technical writing, science policy, patent law, and even professional school - a student who selects the biology or chemistry focus would complete almost all of the core courses recommended for pre-professional preparation. The program includes foundation courses in biology, chemistry, earth science, and physics. Students take at least three upper level courses in one science area, and several courses that investigate the nature scientific discovery, development of scientific knowledge, and the applications of science.

Student Learning Objectives:

1. Provide strong foundational knowledge in the traditional disciplines of biology, chemistry, earth science and physics
2. Provide opportunities for students to explore science as it integrates across the traditional disciplines
3. Evaluate real world problems that require interdisciplinary knowledge of the sciences
4. Provide a program for students preparing for licensure in comprehensive science at the secondary level

### **PROFESSIONAL EDUCATION REQUIREMENTS:**

- 1) STEP Courses
- 2) Secondary Science Licensure Competencies:
  - For Biology Majors: GEO 103; one from GEO 111, 205, 311, 314; MAT 151 or 191; and PHY 211 and 212 or PHY 291 and 292.
  - For Chemistry Majors: BIO 111; BIO 112; GEO 103; and one from GEO 111, 205, 311, 314.
  - For Physics Majors: BIO 111; BIO 112; GEO 103; and one from GEO 111, 205, 311, 314.