Course Descriptions

Scientist in the Classroom (3 graduate credits)

This course will provide students with a theoretical framework, practical knowledge, and skills required to successfully design, implement, and evaluate effective science learning. Starting with a survey of what content and skills teachers need in order to incorporate standards and FCAT testing criteria into their teaching practice, students will design and teach science based modules. Modules will include classroom or field-based activities that emphasize science as inquiry and teaching strategies for inquiry that model authentic science research. Topics to be covered include how people learn, national science standards and their implementation, effective educational assessment techniques, cooperative learning design, and inclusive learning strategies that engage all learners (e.g. marginalized). Guest lecturers, on-line resources, visits to classrooms, and field trips will be part of the course format. Course format may be modified to address the interests and needs of participating students.

Experiential Learning in Marine Science

(3 graduate credits; 4 Undergraduate credits)

This course examines marine science concepts and inquiry-based learning strategies through teambuilding, lab-based research experiences, and field explorations to local marine environments. Learning activities and research tools demonstrate how science concepts are integrated to address real world problems and questions. The science content standards for earth, life, and physical sciences as well as science as inquiry are embedded within the marine sciences. Students will exit able to plan and conduct classroom based research projects as scientific inquiries that incorporate near real-time data streams, fieldtrips, and other tools of science, and design problem based learning modules. National science education standards emphasize the importance of authentic research experiences, safe places to practice, and programs designed to suit students' individual interests and strengths. Marine science provides a unique opportunity to create such learning environments while focusing on real world problems with local relevance and global impact.

Teaching Marine Science I and II

(1-3 graduate credits; 3 Undergraduate credits)

This is a one-year series of courses designed to enhance participants' science teaching and science communication skills. The course will provide students with the opportunity to engage K-12 teachers and/or students in ocean science learning. Students will a) design and deliver learning opportunities that facilitate science as inquiry, and b) practice teaching strategies as inquiry using the 5E instructional model. Learning activities and research tools demonstrate how science concepts are integrated to address real world problems and questions. Students will plan and conduct classroom based research projects as scientific inquiries that incorporate near real-time data streams, fieldtrips, and other tools of science, and design problem based learning modules. Students will serve as science resource experts in K-12 classrooms for 10 hours a week during this course. Students will strengthen both science teaching and communication skills by developing unique marine science learning environments that focus on real world problems with local relevance and global impact.