SCE: Science Education Courses

Courses

SCE 3905  Directed Study
1-12 sh (may be repeated indefinitely for credit)

SCE 4310  Teaching Science in the Elementary School
3 sh (may not be repeated for credit)
This course incorporates current research and best practices in
science education to prepare prospective teachers to foster meaningful
science learning in the elementary (K-6) classroom. In the course,
prospective teachers reflect on and develop their competence in the
three dimensions of science learning, and their understanding of
the nature of science. They also explore subject-specific pedagogy
with an emphasis on planning inquiry-based instruction that engages
elementary learners in experiencing and explaining phenomena, and
builds on their prior knowledge. Furthermore, the course develops
prospective teachers’ awareness of strategies to assess science
learning, and promote equitable participation of underrepresented
populations in science learning experiences. A material and supply fee
is assessed for an elementary science materials kit.

SCE 4320  Teaching Science in the Middle and Secondary Schools
3 sh (may not be repeated for credit)
Theory and methods of teaching science in the middle and secondary
schools; explores current research on approaches in teaching and
learning science; examines the practice of science, disciplinary core
ideas in specific science disciplines of choice (i.e. Biology, Earth/
Space, Chemistry, Physics), and crosscutting themes in science;
compares various models of teaching (i.e. direct instruction, inquiry,
project-based learning); Includes practices to effectively move student
thinking toward meaningful understanding focusing on best practices in
STEM disciplines.

SCE 4905  Directed Study
1-12 sh (may be repeated indefinitely for credit)

SCE 6017  Science Instruction in the Elementary School
3 sh (may not be repeated for credit)
Theory and practice of elementary school science education, including
history, philosophy, research, curricula, and instructional strategies.
Demonstration teaching, individualized instruction and action research.
Credit may not be received for both SCE 6017 and SCE 6117.

SCE 6265  Science Instruction in the Middle and Secondary School
3 sh (may not be repeated for credit)
Prerequisite: EDG 5309
This course is designed to assist preservice middle and secondary
science teachers in developing the pedagogical content knowledge
required to teach science in a manner consistent with current reform
efforts in science education. The course focuses on four components
related to teaching and learning science in grades 6-12: 1) how
students learn science, 2) science curriculum, 3) instructional methods
and strategies for teaching science, and 4) science assessment
practices.

SCE 6905  Directed Study
1-12 sh (may be repeated indefinitely for credit)