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: EDM 6944* OR ESE 6944*
Assists middle and secondary level teachers to develop theoretical understanding and skills necessary to teach in a manner consistent with current reform efforts in science education. Focuses on three components of understanding science teaching and learning: 1) the nature of science, its history and philosophy, 2) how students learn science, and 3) the role of the teacher in creating a safe learning environment. Admission to Teacher Education and permission is required. Credit may not be received in both SCE 6265 and SCE 6625. Material and Supply Fee will be assessed.

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

* This course may be taken prior to or during the same term.