**EDUC 3385**

**Science Teaching Implementation**

**Course Description**

This course will use the Texas Essential Knowledge and Skills (TEKS) as a framework to examine content methodology, skills, and materials necessary to teach science to children in elementary and middle schools. Students will learn how to plan lessons utilizing research-based practices, implement lessons effectively, and reflect on their own science instruction. Course components include hands-on investigations, class discussions, readings, micro-teaching, science notebooks, and field placements with emphasis on developmentally appropriate practices in science instruction. Topics from life science, physical science, earth/space science and nature of science will be covered.

**Prerequisites**

Admission to the Teacher Education Program. Concurrent enrollment in EDUC 3331 or READ 4331.

**Intended Student Outcomes:**

At the conclusion of the course, the student will be able to:

Knowledge Outcomes

1) acquire science content knowledge necessary to teach science effectively in grades K-8 (life science, physical science, earth/space science, and the nature of science);
2) understand the significance of national and state standards in creating student learning objectives, lessons, and assessments;
3) understand the significance of the 5E lesson cycle in science instruction;
4) understand science as a way of knowing the world and involving a process of inquiry; and
5) understand the pedagogy skills of effective elementary and middle school science teachers in establishing a successful learning environment.

Skill Outcomes

1) utilize state and national standards to create effective science lessons that reflect accurate knowledge of content, the nature of science, science processing skills, technology, assessment, and pedagogy;
2) integrate content standards in a variety of curricula that are research-based, developmentally appropriate, interesting, and relevant to the learner;
3) create and implement 5E lessons that revolve around inquiry and connect with other content areas across the curriculum;
4) utilize interactive, science notebooks for the learning process in their own classroom;
5) reflect upon teaching experiences, noting areas of strength and weakness and develop plans to improve their practice;
6) develop informal and formal assessments in science methodology; and
7) analyze data to help inform instruction.

Values Outcomes

1) appreciate the prior knowledge, experiences, language, and practices that each learner contributes to the science classroom;
2) recognize the value of reflective practices to facilitate growth as a professional educator; and,
3) value the unique contributions of individuals and cultural groups in the field of science.