

Augusta State University
College of Education
Department of Teacher Development

Course Title: Research in Science Education

Course Prefix and Number: EDTD 6151

Instructor:

Hours: 3 semester hours

Prerequisites: admission to graduate program and completion of EDTD 6010

Course Description: The students in this course will research current literature and initiatives concerning the teaching of science. Areas will include but not be limited to initiatives espoused by the American Association for the Advancement of Science (AAAS), and the National Science Teachers Association (NSTA). Other areas of study will include the results found by authors conducting research in k-12 classrooms. The results of this research will be compared to the recommendations made in the National Science Education Standards.

National Board Standards Addressed:

I. Teachers are committed to students and their learning

- uses multiple resources, including technology instruction and in guiding learning
- values student questions
- curricular activities rely on primary data sources and manipulative materials
- uses a variety of assessment procedures, techniques, and instruments
- focuses on meeting individual needs of learners
- focuses on meeting student developmental needs

II. Teachers know the subjects they teach and how to teach those subjects to students.

- focuses on real world connections and applications of content learning
- assesses student achievement or performance in situations that closely match the standards and challenges of the world outside the classroom
- flexible in all phases of instruction seeking the students' points of view in order to understand students' present conceptions/misconceptions for use in subsequent lessons
- acts as a facilitator of learning – questioning, guided discovery, problem based, inquiry to understand content
- engages students in active/interactive learning by mediating the environment for the students with discussion, role play, simulations, games, and student conducted research

IV. Teachers think systematically about their practice and learn from experience

- life long learning and reflection upon improved practice
- grounds practice on inquiry and research
- evaluation on impact on student learning to guide further instructional decisions

Teaching For Understanding Questions Addressed

3. How are standards-based curriculum and instruction reflective/suggestive of teaching for understanding; how do they support teaching for understanding?
4. What approaches to curriculum design support of promote teaching for understanding?
5. Why isn't activity-based instruction adequate to the task of teaching for understanding?
8. What kinds and quality of teacher knowledge does teaching for understanding require (subject matter, pedagogical, interpersonal, other) ? Explain.
10. What kind of quality of teacher knowledge does teaching for understanding require?