

EDUC 305 Instructional Strategies in Science**Credit Hours:** 3**Scheduled hours per week**

Lecture: 3

Lab: 0

Other: 0

Catalog Course Description: A course designed to facilitate the elementary education major in the teaching of science. The course will investigate the teaching of science through discovery and inquiry.

Pre-requisites: Admission to Teacher Education Program, BIOL101/103, 102/104, PSCI 101/101L

Co-requisites: None

Course Learning Outcomes:

1. To explore, what is science? How scientists work, scientists' attitudes, scientific inquiry and processes. (WVPTS 1A, 3A, 4A, 4B, 4D, 5I); (InTasc 4,5); (ACEI 1.0, 3.1, 3.2, 3.4, 3.5); (PRAXIS 5622 II.); (ISTE 1A, 1B,) (CAEP 1.1, 1.3,) (Assessment: *Philosophy Statement Assignment*)
2. To study how children develop mentally and the relevance of Piagetian and other cognitive theories to science teaching. (WVPTS 1B, 1D, 1E, 2A, 2D, 2F, 3B, 3D, 3F, 4A, 4B, 4C, 4D, 5C);(InTasc 5,6,7,8); (ACEI 3.3, 3.4); (PRAXIS 5622 I.); (ISTE 1A, 1B, 1C, 1D, 2B, 2C) (CAEP 1.1, 1.3, 1.4,) (Assessment: *Class Assignment*)
3. To consider science as a means of developing the decision-making processes. (WVPTSWVPTS 1D, 2E, 3A, 3C, 3D, 4A, 4B, 4C);(InTasc 1,4,9,10); (ACEI 2.2, 3.1, 3.2, 3.3, 3.4, 3.5, 4.0); (PRAXIS 5622 I.); (ISTE 1A, 1B, 1C, 1D, 2B, 2C) (CAEP 1.1, 1.3, 1.4,) (Assessment: *Quickie Starter activity, Exam*)
4. To develop aims, goals and objectives as a guide for science teaching with attention given to the statewide learning outcomes. (WVPTS 1C, 1D, 1E, 2B, 2C, 2D, 2E, 2F, 3B, 3D, 3E, 4A, 4B, 4C);(InTasc 2,6,7,8); (ACEI 2.2, 3.1, 3.2, 3.4, 3.5, 4.0); (PRAXIS 5622 I.); (ISTE 1A, 1B, 1C, 1D, 2B, 2C) (CAEP 1.1, 1.3, 1.4,) (Assessment: *Lesson Planning Assessment*)
5. To develop inquiry and guided discovery as a science teaching strategy. (WVPTS 1D, 1E, 2A, 2C, 2E, 3D, 4A, 4C, 4D);(InTasc 3,5); (ACEI 2.2, 3.1, 3.2, 3.4, 3.5, 4.0); (PRAXIS 5622 I.); (ISTE 1A, 1B, 1C, 1D, 2B, 2C) (CAEP 1.1, 1.3,) (Assessment: *Lesson Planning Assessment*)
6. To explore technology learning and skills in order to become effective science Teachers. (WVPTS 1D, 1E, 2A, 2B, 2C, 2D, 2E, 3B, 3C, 3D, 3E, 3F, 4A, 4B, 4C, 4D, 5B);(InTasc 9); (ACEI 3.3, 3.4, 3.5); (PRAXIS 5622 I.); (ISTE 1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D, 3B, 3C, 3D, 4A, 4B, 4C, 4D, 5A, 5B, 5C) (CAEP 1.1, 1.3, 1.4, 1,5) (Assessment: *Exam*)

Topics to be studied

1. Scientific method, observation, and classification
2. Study Physical, life, earth/space sciences and engineering
3. How to do in-class investigations
4. Developing lesson plans
5. Developing and presenting a "science day" event
6. Performing a long-term investigation
7. Developing and making teaching presentations

Relationship of Course to Program or Discipline Learning Outcomes:

EDUC 305 incorporates all facets of the philosophical framework of Architects of the Future. Planning, Teaching Skills, and Decision Making Skills are all integral parts of the teaching process. Students in the

course will plan and demonstrate activities and lessons in the course that address diversity. Interpersonal Skills relate to working together in cooperative teams to complete projects.

Relationship of Course to General Education Learning Outcomes:	
Composition and Rhetoric Students illustrate a fundamental understanding of the best practices of communicating in English and meet the writing standards of their college or program-based communication requirements.	X
Science & Technology Students successfully apply systematic methods of analysis to the natural and physical world, understand scientific knowledge as empirical, and refer to data as a basis for conclusions.	X
Mathematics & Quantitative Skills Students effectively use quantitative techniques and the practical application of numerical, symbolic, or spatial concepts.	X
Society, Diversity, & Connections Students demonstrate understanding of and a logical ability to successfully analyze human behavior, societal and political organization, or communication.	X
Human Inquiry & the Past Students interpret historical events or philosophical perspectives by identifying patterns, applying analytical reasoning, employing methods of critical inquiry, or expanding problem-solving skills.	X
The Arts & Creativity Students successfully articulate and apply methods and principles of critical and creative inquiry to the production or analysis of works of art.	
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Special requirements of the course:

1. Students will be required to perform and report the results of a long-term scientific investigation to the class.
2. Students will deliver two short in-class presentations to the students in class..
3. Students will be required to teach one module of a science lesson to a group of elementary school students.
4. The instructor will need to complete the Planning Assessment Rubrics in LiveText based on a collection of four lesson plans covering Physical, life, earth/space sciences and engineering utilizing college-and-career readiness standards.
5. Background Check
6. Have current Livetext (or affiliate) subscription and use Blackboard for course requirements.

Additional information:

NA

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Uniform Course
Collection

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