EDUC 390 Science Strategies for Middle School
Credit Hours: 2
Scheduled hours per week
Lecture: 2
Lab:
Other: 20 field experience hours

Catalog Course Description: Instructional strategies and curriculum materials appropriate for the teaching of science in grades 7-9 will be investigated. Students will prepare and use hands-on inquiry lessons in teaching experience with middle school students.

Pre-requisites: Admission to Teacher Education; All science requirements including EDUC 305

Co-requisites: Field Experience

Course Learning Outcomes:

1. To investigate the NSTA Science Content Standards and their implementation into middle school science curriculum. (*WVPTS 1A, 1C, 1D, 3A) (InTASC 4, 9) (ACEI 2.2) (PLT II.A.4) (CAEP 1.1, 1.2, 1.3 1.4) (Assessment: Lesson Plan Rubric, Problem Based Project)*
2. To investigate the college and career readiness standards of the West Virginia science program of study. (*WVPTS 1A, 1C, 1D, 3A, 3B) (InTASC 5) (ACEI 2.2, 3.1,)(PLT II.A.1, II.A.4) (CAEP 1.1, 1.2, 1.3 1.4) (Assessment: Lesson Plan Rubric, Problem Based Project)*
3. To investigate a variety of instructional strategies, curriculum materials, and equipment in a hands-on, inquiry learning environment. (*WVPTS 3B, 3C, 3D) (InTASC 1, 2, 5, 7, 8,) (ACEI 1.0, 2.2, 3.1, 3.2, 3.3, 3.4, 3.5) (PLT I.A.5, 1.B.1, II.A.6, II.B.4, II.B.8, II.C.1, II.C.2, II.C.3, II.C.4, II.C.5)(ISTE 4.b, 4.c, 5.a,5.b, 5.c,) (CAEP 1.1, 1.2, 1.3 1.4) (Assessment: Lesson Plan Rubric, Problem Based Project)*
4. To investigate mathematical and computer skills applicable to scientific investigation of phenomena and analysis of data. (*WVPTS 1A, 1D, 3A, 4A) (InTASC 1, 2, 5, 7) (ACEI 2.2, 3.1, 3.3, 3.4) ((PLT II.A.7)(ISTE 5.a, 5.b, 5.c, 6.a, 6.b, 6.c) (CAEP 1.1, 1.2, 1.3 1.4) (Assessment: Lesson Plan Rubric, Problem Based Project)*
5. To investigate standards and methods for maintaining safety in the science classroom. (*WVPTS 2A, 2D,2E, 2F,5I) (InTASC 3, 5, 7, 9) (ACEI 1.0,)(ISTE 6.a, 6.b, 6.c) (CAEP 1.1, 1.2, 1.3 1.4) (Assessment: Lesson Plan Rubric, Problem Based Project)*
6. To investigate methods of assessing student outcomes. (*WVPTS 1C, 1E, 3E, 3F) (InTASC 1, 6, 8, 9) (ACEI 4.0) (PLT II.A.5, II.B.9, III.A.1, III.A.2, III.A.3, III.A.4, III.A.5, III.A.6, III.B.1, III.B.2, III.B.3, III.B.4, III.B.5)(ISTE 6.a, 6.b, 7.a,7.b,7.c) (CAEP 1.1, 1.2, 1.3 1.4) (Assessment: Lesson Plan Rubric, Problem Based Project)*
7. To investigate effective classroom management techniques in an environment conducive to learning science. (*WVPTS 2A, 2B, 2C, 2D, 2E, 2F) (InTASC 3, 8) (ACEI 1.0, 3.2, 3.4, 3.5)(PLT I.C.2, I.C.3, I.C.4,II.B.4, II.B.7, II.D.1, II.D.2, II.D.3, II.D.4)(ISTE 6.a, 6.b, 6.c) (CAEP 1.1, 1.2, 1.3 1.4) (Assessment: Lesson Plan Rubric, Problem Based Project)*

Topics to be studied:

1. NSTA Science Content Standards
2. West Virginia College and Career Readiness Standards for Science
3. Instructional strategies, curriculum materials and equipment for hands-on study of science specific to middle school standards
4. Strategies appropriate to diverse learners
5. Mathematical and computer skills
6. Safety standards
7. Assessment of student outcomes
8. Classroom management techniques

Relationship of Course to Program or Discipline Learning Outcomes:
This course develops "Architects of the Future" by providing opportunities for teacher candidates to increase their understanding of the dimensions of the middle school science college and career readiness standards as well as knowledge of effective instructional and assessment materials and methods. The field experience component at the Professional Development Partnership School enables candidates to demonstrate commitment to the profession as they practice the skills of planning, teaching, interpersonal communication, decision-making and diversity.

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.	
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. Each student will be evaluated on a collection of lesson plans submitted in LiveText and instructors should consider the collection when completing the lesson plan rubric. Students will teach the lessons in the middle school classroom.
2. The Planning Assessment Rubric will be completed by the instructor based upon a collection of 3 lesson plans covering physical, life and earth/space sciences
3. Have a current LiveText (or affiliate) subscription and use BlackBoard for course requirements
4. Submit Background check
5. Submit field experience paperwork and admission to student teaching assessment (in LiveText or its affiliate)

Additional information:

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