

EDUC 304. INSTRUCTIONAL STRATEGIES IN MATHEMATICS**Credit Hours:** 3**Scheduled hours per week**

Lecture: 3

Lab: 0

Other: 20 hours Field Experience

Catalog Course Description: EDUC 304. INSTRUCTIONAL STRATEGIES IN MATHEMATICS. Methods and content with respect to real numbers, algebra, geometry, graphing, problem solving, measurement, probability, and statistics.

Pre-requisites: C or better in MATH 121, MATH 126, and Admission to Teacher Ed Program

Co-requisites: 20 hr. Field Experience

Course Learning Outcomes:

1. Students will be able to effectively plan and implement an elementary mathematics lesson for grades K-6 utilizing college-and-career ready standards. (WVPTS 1A, 1B, 1C, 1D, 2A, 2F, 3A, 3C, 3D, 3E) (InTASC 1, 2, 3, 4, 5, 6, 7, 8) (ACEI 1.0, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 4.0) (Praxis 5622 I. C.1, C.2, C.3, C.4, II. A.1, A.2, A.3, A.4, A.5, A.6, A.7, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, B.10, B.11, B.12, C.2, C.3, C.4)(ISTE 2c, 3d) (CAEP 1.1, 1.3, 1.4,) (Assessment: Exam, Lesson Planning Assessment)
2. Students will be able to use a variety of instructional strategies, including integrating technology, in order to engage students in a mathematics lesson. (WVPTS 1A, 1B, 1C, 1D, 2F, 3A, 3C, 3D, 3E) (InTASC 1, 2, 3, 4, 5, 6, 7, 8) (ACEI 1.0, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 4.0) (Praxis 5622 I.C.1, C.2, C.3, C.4, II. A.1, A.2, A.3, A.4, A.5, A.6, A.7, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, B.10, B.11, B.12, C.2, C.3, C.4)(ISTE 2c, 3d, 5c, 6c, 7c) (CAEP 1.1, 1.3, 1.4, 1.5) (Assessment: Exam, Lesson Planning Assessment)
3. Students will be able to effectively differentiate their instruction and assessment so that all students have the opportunity to be successful. (WVPTS 2A, 3A, 3C, 3D, 3E, 4C) (InTASC 1, 2, 3, 4, 5, 6, 7, 8, 9) (ACEI 1.0, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 4.0) (Praxis 5622 I. B.1, B.3, B.4, B.5, B.6, C.1, C.2, C.3, C.4, II. A.1, A.2, A.3, A.4, A.5, A.6, A.7, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, B.10, B.11, B.12, C.2, C.3, C.4, D.1, D.2, D.3, D.4, III. A.1, A.2, A.3, A.4, A.6, B.1, B.2, B.3)(ISTE 2c, 3d, 5c, 6c, 7c) (CAEP 1.1, 1.3, 1.4, 2.3) (Assessment: Lesson Planning Assessment, Teacher Performance Assessment)
4. Students will be able to deliver rigorous mathematics content in a developmentally appropriate format. (WVPTS 1A, 1B, 1C, 1D, 2A, 3A, 3C, 3D, 3E) (InTASC 1, 2, 3, 4, 5, 6, 7, 8) (ACEI 1.0, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 4.0) (Praxis 5622 I. A.1, A.2, A.3, A.4, A.5, C.1, C.2, C.3, C.4, II. A.1, A.2, A.3, A.4, A.5, A.6, A.7, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, B.10, B.11, B.12, C.2, C.3, C.4) (CAEP 1.1, 1.3, 1.4, 2.3) (Assessment: Creating Assessment for Learning Activity)
5. Students will be able to evaluate their own instruction and reflect of the effectiveness of their lessons in order to make adjustments to their instruction. (WVPTS 3A, 4C, 5H, 5I) (InTASC 1, 2, 3, 4, 5, 6, 7, 8, 9, 10) (ACEI 1.0, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 4.0, 5.1, 5.2)(Praxis 5622 I. A.1, A.2, A.3, A.4, A.5, B.1, B.3, B.4, B.5, B.6, II. B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, B.10, B.11, B.12, D.1, D.2, D.3, D.4, III. A.1, A.2, A.3, A.4, A.6, VI. 1, 2, 3, 4, 7)(ISTE 1a, 1b, 7c) (CAEP 1.1, 1.2, 1.3, 1.4,2.3) (Assessment: Exam)

Topics to be studied:

1. NCTM Principles and Standards
2. Differentiated Instruction
3. Intervention Techniques
4. Mathematical instructional strategies
5. Classroom management as it applies to the mathematics classroom
6. Number Talks

Relationship of Course to Program or Discipline Learning Outcomes:

This course provides students hands on experience with a variety of mathematical instructional strategies relevant to grades K-6. Students will gain an understanding of the importance of planning, decision making skills, and interpersonal skills by designing math lessons that are rigorous, standards based, differentiated, and developmentally appropriate. They will apply the strategies they have learned in class to their work with students during their field experience. Diversity, teaching skills, and professional commitment will be addressed in this course through lesson presentations students will complete in front of their peers, student created work stations used with elementary students in their field placement, and student reflections on lessons and journals from their field experience.

This course meets the following General Education Outcome(s):	
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.	
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. Students will write lesson plans
2. Students will teach lessons
3. Students will complete a self-reflection after every lesson presentation
4. Students will complete a reflective journal for each observation in their elementary classroom field experience
5. Submit Planning Assessment in Livetext based on lessons in mathematic.
6. Use Livetext (or affiliate) and Blackboard
7. Background Check
8. Submit School Based Educator evaluation of field experience placement
9. Submit field experience paperwork

Additional information:

NA

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