Course Competency

MAE 3951 Project-Based Learning in Mathematics Education

Course Description

The student will learn and apply the principles of project-based learning by designing and implementing projects to explore real-world problems, questions, and challenges in the field of education. The student will develop their technology, critical, creative, and communication skills by producing products to share their findings and proposed solutions. This course requires approved clinical hours.

Course Competency	Learning Outcomes
Competency 1: Apply the evidence-based high impact teaching practice "project-based learning" by:	1. Critical thinking 2. Communication 3. Numbers / Data
1. Aligning the project focus with a purposeful problem that requires students to build their mathematics around the investigation of concepts they know while motivating them to develop and acquire new skills. 2. Applying critical and creative thinking skills to explore and recommend solutions to their project related problem or issue of concern. 3. Designing a project that develops their 21st Century Skills, such as critical thinking, problem solving, collaboration, and self-management. 4. Collaborating to present their findings orally and in written form for public discussion, critique, and evaluation.	
Competency 2: Apply the principles of social justice within education by:	1. Social Responsibility 2. Cultural / Global Perspective 3. Ethical Issues
1. Defining social justice in education as	

acting with fairness, dignity, and equality. 2. Designing projects that exemplify the principles of equity, equal access, and participation. 3. Utilizing the principles of social justice as a framework to addressing their identified problem or issue of concern.	
Competency 3: Develop their 21st Century mathematics teaching skills by:	1. Communication 2. Critical thinking 3. Information Literacy 4. Computer / Technology Usage
1. Creating and pursuing projects that require the following skills: problem solving, analytical thinking, creative thinking, collaboration, communication, ethics, action, and accountability. 2. Utilizing technology to research, document, and publish their work products. 3. Employing elements of social emotional learning such as self-awareness, self-management, and self-direction to set goals and to achieve mastery. 4. Employing elements of educational neuroscience by recognizing the benefits and strengths of teamwork, shared goals, and shared achievement.	

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