Miami Dade College

Course Description

MAE3951 | Problem-based Learning in Mathematics Education | 2.00 credits

The teacher candidate 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. (2-hour lecture; this course requires approved clinical hours)

Course Competencies

Competency 1: Apply the evidence-based high impact teaching practice project-based learning by:

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: Promote fair and consistent and supportive practices in mathematics education by:

1. Describing fairness, dignity, and equal opportunity as they relate to teaching and learning
2. Designing instructional activities that support supportive participation and fair and consistent access to mathematical content
3. Applying principles of fairness and participation to address identified challenges or areas for improvement in the mathematics classroom

Competency 3: Develop their 21st century skills by:

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 student engagement and development 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