Program Mission Statement

UNF graduates from the B.A.E program in Middle School Mathematics and Science Education develop an understanding of the disciplinary and interdisciplinary science and mathematics content as well as inquiry-based pedagogy. The program will provide the appropriate knowledge, skills, and dispositions needed to design experiences in curriculum, instruction and evaluation of ten-to-fourteen year old students in both mathematics and science.

Students who enroll in this program should expect to spend time in clinical/field settings working with children in classes. They will also go through a semester long of internship during which they will apply the teaching strategies learned from coursework and be trained to teach classes on a typical full work load under the mentoring of an experienced teacher.

As a result, UNF graduates of the program will develop competencies in instructional methods and curriculum and in selecting methods, resources, and assessment strategies for teaching science. The mission of the program is to prepare future science and math teachers for middle schools schools through candidates:

1) Developing an understanding of developmental, cultural, and pedagogical issues related to constructing scientific and mathematical knowledge by all students including those of varying sociocultural, economic, language, and special needs backgrounds;

2) Enhancing subject matter knowledge by emphasizing concepts and skills taught in middle school math and science classrooms;

3) Developing pedagogical content knowledge: how students learn math and science; how to plan lessons, how to organize a safe, stimulating classroom environment, how to connect math and science to other content areas and the community, how to assess learning authentically, and how to integrate technology into these lesson;

4) Observing and teaching scientific and mathematical content using inquiry and hands-on experiences;

5) Using experience and research to guide personal professional development through reflection;

6) Accessing, evaluating, and implementing appropriate resources to enrich science and math teaching and learning.

These core learning objectives of the Middle School Math and Science Education program conform to current reform models (American Association for the Advancement of Science), standards for science teacher preparation at the national (National Science Teachers Association and National Council of Teachers of Mathematics), and state (Subject Matter Content Standards for Florida Teachers and Florida Educator Accomplished Practices) levels. Additionally, the program has been reviewed by and conforms to the National Council for Accreditation of Teacher Education standards.

Student Learning Outcomes

Graduates will be able to:

Content/Discipline-Specific Knowledge/Skills

• Recognize applications of significant learning theories.

• Identify essential teaching strategies that can be employed in all instructional contexts.

• Employ traditional and alternative assessment strategies in determining student mastery of specific outcomes.

• Work to continue the development of her/his own background in instructional methodology, learning theories, second language acquisition theories, trends and subject matter.

• Use the materials and technologies of the subject field in developing learning activities (experiences) for students.

Communication Skills

• Communicate and cooperate with families, colleagues, and other school personnel to improve students' learning experiences.
• Create authentic tasks using technology tools and recognizes the need for learner-centered environment.
• Communicate knowledge of subject matter in a manner that enables students to learn.

Critical Thinking Skills
• Develop, select, and implement learning experiences, strategies, and materials that foster critical, creative, and higher order thinking skills.
• Help students develop concepts through a variety of methods.

Assessment Approaches
UNF graduates of the B.A.E program in Middle School Education (Math/Science) will demonstrate mastery of content knowledge and teaching skills through proficiency on course embedded assessments, activities, and critical task assessments in core, major, and clinical experiences at a proficiency level expected of a teacher candidate. It is expected that teacher candidates apply knowledge throughout the program by demonstrating understanding, competence, and effective implementation. Assessment strategies include: 1) assignments and formal assessments to demonstrate knowledge, skills and dispositions as described by NCATE program standards, 2) successful completion of critical tasks, 3) class discussions, reflections and critiques which provide a dynamic forum for developing ideas and demonstrating knowledge, and 4) analysis of teaching performances in field experiences and methods courses.