STEM Proposal: Changes to Early Childhood-Middle Childhood
And Middle-Childhood Early Adolescent Programming

Overview: UW-Platteville School of Education has prided itself on being a leader in educational initiatives throughout its history. It is imperative that we adapt to the ever-changing technological and economic landscape of education. Thus, we have begun the STEM Certification initiative. In this new certification emphasis, ECMC (Early Childhood-Middle Childhood) and MCEA (Middle Childhood-Early Adolescent) students will have coursework with greater emphasis on the domains of learning associated with STEM: Science, Technology, Engineering and Mathematics.

In order to achieve such a program, the ECMC and MCEA programs are being redesigned with new pre- and co-requisites and new courses that engage students in classroom situations earlier in their course sequence. Additionally, other courses are being separated to allow for greater emphasis and depth.

NOTE: these changes will not impact current budget, resources, faculty, staffing or classroom needs

Summary of Changes:

- 18 courses have new pre- and/or co-requisites
- 5 courses have a change in credits associated with them, to either eliminate variable credits or to separate credits
- 2 new practicum courses are being added: Tchg 4000 Elementary Practicum (grades 1-6) and Tchg 4080 Early Childhood Practicum (birth – 4K)
  - This change occurred with the separation of the practicums originally associated with Tchg 3040 Reading, Literacy and Literature I, and Tchg 4040 Reading, Literacy and Literature II
- The ECMC, birth – 11 certification, is being revised creating the ECMC with STEM endorsement
  - Tchg 3130 K-4 Methods and Tchg 3640 Creative Development are being dropped as course options for birth - 11
- The MCEA, middle level STEM endorsement is being created to replace the current middle level, age 10 – 14, endorsement
Pre-Authorization: Notice of Intent

A. **Name of Proposed Degree**: STEM Middle Childhood- Early Adolescence (MC-EA) (grades 1-8) Education Major.
   The institutional setting is UW-Platteville School of Education,
   Mode of delivery is traditional on-campus that includes lab-based instruction
   Institutional contact information- Dr. Karen Stinson, Director of Education

B. The new STEM MC-EA Education major fits with the **institutional mission** to enable
   the university to “provide an outstanding education” including high impact practices in
   internships or practicum experiences. Graduates of the new STEM major will be critical
   thinkers who can teach higher order thinking skills and critical thinking in high need
   STEM areas of math, science and technology. This new major will also help meet the
   need of the mission statement of “seeking to serve the needs of all students and in
   particular needs of women, minority, disadvantaged and nontraditional students” with a
   concentration in very high-employment and extreme shortage teaching areas in math and
   science. The STEM major would directly meet three of the four 2013-2018 University
   **Strategic Plan** goals.

   - First and foremost, the STEM major will enrich the Tri State area by providing
     extremely-qualified teachers in math, science and technology. Candidates will have a
     broad background in educational theory and practice combined with pedagogy in
     higher order thinking in math and science and strong content with a minor or major.
     Since UW-Platteville is a STEM campus with a strong engineering program, teacher
     education candidates can learn their content skills from some of the best math and
     science professors in the state.

   - The STEM major will also “provide students who have a broader perspective, who
     are more literate, and intellectually more astute, ethically more sensitive, and to
     participate wisely in society as a competent professional and knowledgeable
     citizens.” This will be accomplished by combining a rich liberal arts education, with
     robust instruction in content and pedagogy in reading, language arts and social
     science with new comprehensive methods and content courses in mathematics,
     science, engineering and technology. Currently, our EC-MC education program
     provides 12 credits in teaching math methods, 12 credits in teaching reading methods
     and only 2 credits in teaching science methods. The new major would require strong
     STEM content knowledge and coursework with the required minors and additional
     methods courses in teaching science.
• The new STEM major will provide an outstanding education with many opportunities for candidates to participate in high impact practices in hands-on work in state of the art labs with their fellow students who are engineering and science majors. STEM majors will also have the opportunity to participate in clinical practices, and undergraduate research in science and mathematics.

C. **Program Description:** The STEM Major at the University of Wisconsin-Platteville provides opportunities to study educational theories and processes and the social and cultural factors that impact teaching and learning, integrated with increased knowledge in math and science content and methodology.

The Educational Studies major is a creative partnership between the School of Education, and other departments on campus with a shared vision of graduating students who can provide high quality education in math and science. The teacher education candidate and their advisor(s) will develop a program plan that includes at least 120 credits for graduation; 49-55 credits in general education coursework; 30-40 credits in education coursework; and at least a 24-30 credit minor with a recommendation for a minor in mathematics or science.

D. **Need for Program:** There is a growing need for graduates to go into high need areas in math and science education at all levels. The Nationwide Teacher Shortage Area [http://www2.ed.gov/about/offices/list/ope/pol/lsa.pdf](http://www2.ed.gov/about/offices/list/ope/pol/lsa.pdf) of March, 2013, lists high need teaching areas in *career and technical education including business, family and technology education, in addition to math, science*, special education, ESL, foreign language, library media, music, and reading. The new STEM majors could study and minor in several high needs areas: math, science, foreign language, special education or TESOL which are already offered on the UW-Platteville campus.

The graduates from the STEM education major will have stronger skills in math and science and will also have developed a *diverse view of the world through their liberal arts courses and interactions*. The School of Education also has as a mission towards the “education of individuals who understand the needs of students and families, who understand the education system, and who can meet the compelling need for highly trained individuals to serve in leadership roles and work cooperatively within educational systems”.

In addition, it is a goal of the university to recruit more diverse candidates, particularly in education. Because we are already identified as a STEM campus, many students with a strong interest in sciences and math are already interested in UW-Platteville. This new STEM major has the potential to provide a new generation of very highly qualified math and science elementary teachers for the next generation and beyond, greatly increasing the knowledge and skills of the elementary students in the tri-state area.