Co-Major in Mathematics Education

The STEMTeach KU Mathematics program is an academic area that is collaboratively managed with the College of Liberal Arts and Sciences. The STEMTeach KU program's mission aligns and echoes that of the School of Education and Human Sciences. Our purpose is to prepare professional math teachers who educate children and youth about both the nature and process of science and knowledge of the natural world. In addition, these teachers become model teachers and leaders in their professional communities, including the fields of math education and general education.

The Mathematics Education Co-Major allows students who are majoring in a STEM content area to explore teaching as a career option while completing a major in a STEM content area. The courses in the co-major align with those found in the major content program as well as those needed for the completion of STEMTeach KU. After successful completion of the STEMTeach KU co-major program, candidates will be eligible to apply to obtain a secondary teaching license from the Kansas Department of Education in their content area.

- Admission to the College of Liberal Arts and Sciences BA in Mathematics program or BS in Mathematics program;
- Satisfactory completion (minimum grade of C) of C&T 292; and
- Submission of a signed Program Agreement, obtained after enrollment in C&T 360.

To earn a Mathematics Education Co-Major, a student must satisfy the degree requirements for a BA in Mathematics or a BS in Mathematics and successfully complete the following courses:

Code	Title	Hours
The following courses must be completed in the order listed.		
C&T 292	Introduction to Secondary Science and Mathematics Teaching (must earn a grade of C or higher)	3
C&T 360	Knowing and Learning in Mathematics and Science (must submit a signed Program Agreement at the beginning of this class)	3
C&T 366	Classroom Interactions in Mathematics and Science	3
C&T 460	Project Based Instruction in Mathematics and Science	3
C&T 490	Student Teaching	6
C&T 495	Seminar: Developing the Teaching Portfolio	3
In addition to the above courses, the following courses are also required.		
MATH 209	Functions and Modeling	3
MATH 411	Geometry and History of Mathematics for Teachers	3
C&T 359	Literacy in the Content Areas	1
CHEM 598	Research Methods	3
or BIOL 598	Research Methods	
Total Hours		**31**

At the completion of this program, students will be able to:

- demonstrate through practice a variety of effective instructional strategies that emphasize inquiry teaching methods using appropriate instructional technologies. These instructional strategies will be informed by timely and appropriate analysis of secondary student learning.
- demonstrate deep content knowledge in their chosen STEM field of study. To foster a deep conceptual understanding in their own students a teacher must develop that understanding of this content themselves. Expectations are for fluid and accurate communication of the content.
- translate educational theory into teaching practice through participation in varied field experiences embedded through the STEMTeach course work. Current educational research, learning theory, and national and state standards, provides for the basis for instructional and professional decisions.
- apply their knowledge of how people learn to facilitate their own learning in their content area. Teachers who are skilled learners foster these traits in their students.
- integrate the breadth of STEM content into their teaching practices. Course work allows STEMTeach students to explore the relationships between science, technology, engineering, and mathematics content and how that content is learned. All students will have a working knowledge of math and science standards.
- design, conduct and then analyze the data/results from formal research projects. This immersion into actual hands-on research projects provides the STEMTeach students and understanding of the process by which scientists and mathematicians arrive at new knowledge and techniques in their field.
- develop strategies that promote an environment of respect and diversity. Rapport among students and teachers fosters a positive climate that promotes equity and excellence in learning.
- demonstrate strong oral and written communication skills. Students will be able to generate, explore, organize, and convey ideas. Teachers use spoken and written language and other media (for example, digital, text images, graphs) to communicate effectively. Communicating with others, goth in writing and orally, lies at the heart of personal ad professional growth and success.
- be critical thinkers and reflective practitioners exhibiting an appreciation for the power of collaboration, taking leadership roles with the school and within the profession. STEMTeach graduates are passionate about their field, student learning, and the education profession.