Education-Sci, Tech, Engineering, Math (ESTM)

Courses

ESTM 5114. Technology and Engineering in STEM Education. Units: 3

Study of technology and engineering tools, practices, and standards that contribute to K-12 Science, Technology, Engineering, and Mathematics (STEM) education.

ESTM 6104. Foundations of STEM Education. Units: 3

Overview of philosophy, perspectives, and standards of Science, Technology, Engineering, and Mathematics (STEM) education that contribute to an integrated view of STEM education. Formerly offered as ESTM 510.

ESTM 6134. Assessment in STEM Education. Units: 3

Quarter Prerequisite: ESTM 510 or consent of program coordinator
Introduction to assessment strategies that enhance learning in STEM education. Topics include formative and summative assessment, student feedback, development and analysis of assessment item, measurement methods, and data driven decision making. Previously offered as ESTM 613.

ESTM 6203. Advanced Teaching Methods in STEM Education. Units: 3

Emphasis is on curricular connections across topics, disciplines and grade levels, fostering scientific and mathematical thinking and practices, STEM integration, and equitable teaching strategies.

ESTM 6234. Teaching Science in STEM Education. Units: 3

Emphasis is on curricular connections across topics and grade levels, fostering scientific thinking and practices, STEM integration, research and trends in science education that impact teaching and learning of science.

ESTM 6244. Teaching Mathematics in STEM Education. Units: 3

Quarter Prerequisite: ESTM 510, ESTM 511, MATH 115 or equivalent, MATH 301A, MATH 301B, MATH 301C, and MATH 308 or consent of program coordinator
The emphasis is on curricular connections across topics and grade levels, fostering mathematical thinking and practices, STEM integration, research and trends in mathematics education that impact teaching and learning of mathematics.

ESTM 6284. Equity in STEM Education. Units: 3

An examination of the issues of diverse student groups based on race, ethnicity, language, socio-economic status, gender, and special needs in STEM education. Emphasis is on approaches to ensure equity in STEM education, such as differentiation strategies and culturally relevant teaching.

ESTM 6344. Research Methods in STEM Education. Units: 3

Quarter Prerequisite: ESTM 510 or consent of the instructor
Introduction to the major educational research methods and paradigms with an emphasis on reflective, practitioner-directed inquiry. Formerly offered as ESTM 634.

ESTM 6920. Practicum in STEM Education. Units: 3

Prerequisites: Consent of the instructor
Practicum course including application of research-based STEM Education practices in formal and informal educational settings. Consent of the instructor.

ESTM 6930. Advanced Disciplinary Topics in STEM Education. Units: 3

Advanced study of subject matter pedagogy in STEM-related disciplines to enable candidates to incorporate current and relevant content knowledge in STEM Education. Consent of the instructor.

ESTM 6954. Advanced topics in STEM Education. Units: 3

Semester Prerequisite: Advancement to candidacy and approval from program coordinator
Culminating experience for STEM Education master's students. Synthesis of current trends and practices in STEM Education in the local and national context.

ESTM 6963. STEM Education Master Project. Units: 3

Semester Prerequisite: Prerequisites: ESTM 6344, advancement to candidacy, and approval of project proposal by the student's advisory committee
Independent graduate project in STEM Education conducted under the direction of the student's advisory committee.

ESTM 6973. STEM Education Master Thesis. Units: 3

Semester Prerequisite: ESTM 6344, advancement to candidacy, and approval of thesis proposal by the student's advisory committee
Independent graduate research related to issues in STEM Education conducted under the direction of thesis committee.

ESTM 6980. STEM Education: Comprehensive Examination. Units: 0

Semester Prerequisite: Completion of course work in the master's program, advancement to candidacy, in good academic standing and approval of the program coordinator. Quarter Corequisite: ESTM 681.
Quarter Prerequisite: ESTM 680, completion of course work in the master's program, advanced to candidacy, approval of the department, and in good academic standing
Semester Corequisite: ESTM 6954
An assessment of the student's ability to integrate the knowledge of STEM education, show critical and independent thinking and demonstrate mastery of the subject matter.

ESTM 6990. Continuous Enrollment for Graduate Candidacy Standing. Units: 0

Quarter Prerequisite: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies

Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. Continuous Enrollment for Graduate Candidacy Standing is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

ESTM 6991. Continuous Enrollment for Graduate Candidacy Standing. Unit: 1

Quarter Prerequisite: Advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies

Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. Continuous Enrollment for Graduate Candidacy Standing is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

ESTM 6992. Continuous Enrollment for Graduate Candidacy Standing. Units: 2

Quarter Prerequisite: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies

Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. Continuous Enrollment for Graduate Candidacy Standing is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

ESTM 6993. Continuous Enrollment for Graduate Candidacy Standing. Units: 3

Quarter Prerequisite: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies

Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. Continuous Enrollment for Graduate Candidacy Standing is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

ESTM 6994. Continuous Enrollment for Graduate Candidacy Standing. Units: 4

Quarter Prerequisite: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies

Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. Continuous Enrollment for Graduate Candidacy Standing is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

ESTM 6995. Continuous Enrollment for Graduate Candidacy Standing. Units: 5

Quarter Prerequisite: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies

Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. Continuous Enrollment for Graduate Candidacy Standing is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

ESTM 6996. Continuous Enrollment for Graduate Candidacy Standing. Units: 6

Quarter Prerequisite: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies

Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in a Continuous Enrollment for Graduate Candidacy Standing course each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. Continuous Enrollment for Graduate Candidacy Standing is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.