

# SCIENCE, TECHNOLOGY, ENGINEERING & MATH EDUCATION (STME)

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STME 5001 - Planning for Learning in Mathematics and Science (3 Credits)

This course explores aspects of complex curriculum and instructional concepts through the lens of mathematics and science educators. A focus will include: Socio-cultural learning theory in Math and Science; standards-based instruction; instructional design; formative & summative assessment, and differentiation so that meaningful instruction becomes accessible to all students. Cross-listed with STME 4001. Max hours: 3 Credits.

Grading Basis: Letter Grade

STME 5020 - Learning and Assessment in STEM: Embracing Design Thinking (3 Credits)

This course emphasizes student-centered, wonder-driven STEM education. Explore Design Thinking's integration for enriched inquiry-based learning in math, science, engineering, and technology. Learn strategies for inclusivity, differentiation, and accommodations. Master formative, summative assessments, including handling high-stakes evaluations. Cross-listed with STME 4020. Max hours: 3 Credits.

Grading Basis: Letter Grade

STME 5030 - Exploring Approaches to STEM Education: Making Student Learning Visible (3 Credits)

This course delves into inventive STEM education, merging Design Thinking principles. Emphasis on playful, visible learning, and interdisciplinary connections. Online format fosters collaborative, flexible digital atelier experiences. Cross-listed with STME 4030. Max hours: 3 Credits.

Grading Basis: Letter Grade

STME 5051 - STEM Capstone: Secondary Education (3 Credits)

This course provides Secondary STEM Education students with a capstone learning experience that integrates knowledge of STEM content, students, and school context into socially-just and culturally responsive practices. Cross-listed with STME 4051. Restriction: Restricted to students in the Teacher MA or undergraduates in the BAMA. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: TCHR-MA plan or BMA subplan.

STME 6010 - Community-Engaged STEM Leadership (3 Credits)

In this learning opportunity, we will explore ways to think about informal and formal learning spaces with a lens of STEM Leadership. Restriction: Graduate level students. Cross-listed with STME 7010. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Graduate level students.

STME 6030 - Decolonizing STEM spaces: Beyond Equity and Access (3 Credits)

In this course we will extend the equity and access conversations in educational spaces including STEM education by focusing on indigenous knowledge systems and ways of knowing. We will explore the epistemological frameworks and knowledge claims within this space. Max hours: 3 Credits.

Grading Basis: Letter Grade

STME 6110 - Science and Math Curriculum Studies (3 Credits)

Students examine frameworks for curriculum design, discuss the psychological and philosophical foundations of curricula, and analyze the curriculum that they use in their own teaching. Students synthesize what teachers must do in order to effectively implement curricula. Prereq: Graduate student status. Cross-listed with STME 7110. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Graduate level students.

STME 7010 - Community-Engaged STEM Leadership (3 Credits)

In this learning opportunity, we will explore ways to think about informal and formal learning spaces with a lens of STEM Leadership. Restriction: Restricted to EDHD-PhD and LDRE-EDd majors within the School of Education and Human Development. Cross-listed with STME 6010. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Restricted to EDHD-PhD and LDRE-EDd majors within the School of Education and Human Development.

STME 7020 - Power of Data (3 Credits)

In this course we will focus on uncovering the biases in research and data, support students in using data for public good, and employ methodological frameworks which help make sense of the complex intersectionalities between race, gender, and socioeconomic class.

Restriction: Restricted to graduate students. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Restricted to graduate students and graduate non-degree seeking students.

Typically Offered: Spring.

STME 7030 - Decolonizing STEM spaces: Beyond Equity and Access (3 Credits)

In this course we will extend the equity and access conversations in educational spaces including STEM education by focusing on indigenous knowledge systems and ways of knowing. We will explore the epistemological frameworks and knowledge claims within this space.

Max hours: 3 Credits.

Grading Basis: Letter Grade

STME 7110 - Science Math Curriculum Study (3 Credits)

Students examine frameworks for curriculum design, discuss the psychological and philosophical foundations of curricula, and analyze the curriculum that they use in their own teaching. Students synthesize what teachers must do in order to effectively implement curricula. Restriction: Graduate student status. Cross-listed with STME 6110. Max hours: 3 Credits.

Grading Basis: Letter Grade

Restriction: Graduate level students.