Our masters degree program has a focus on preparing candidates for the 21st century, linked through four organizing phases: Experience, Exploration, Implementation, and Inquiry. Candidates successful in this program understand and have the ability to work collaboratively with others, apply theory and knowledge, and pursue the development of their own expertise as it relates to teaching, learning, and school development. M.Ed. candidates bring their own unique academic experiences and work with an advisor to ensure the connection of those experiences to their Masters Core coursework.

Note: M.Ed. STEM with a Mathematics Instructional Added Authorization (MIAA) embedded is also an option.

Innovative Collaborative Affordable

Program Overview
The Science, Technology, Engineering and Mathematics (STEM) M.Ed. concentration at TCSJ embraces the premise that 21st century educators and school leaders will have expertise in the design of learning environments that enable their TK-12 students to approach solutions to problems with the mindset of STEM professionals. Our integrative approaches to STEM education sets us apart from the traditional mindset that views STEM as discreet topics.

Coursework (33 units)
- CURR341 Preparing Students to be College and Career Ready in the 21st Century: Exploration (3)
- CURR343 Curriculum for the 21st Century (3)
- CURR344 The Lesson Study (2)
- CURR345 Teacher Action Research (3)
- CURR384 Writing the Literature Review (2)
- STEM385 Masters Project (4)
- STEM310 Introduction to STEM (2)
- STEM320 Research in the STEM Classroom (3)
- STEM330 Technology and Tools in STEM Education (2)
- STEM350 STEM I (2)
- STEM352 STEM II (3)
- STEM360 STEM Lab (4)

How to Apply
- Application for Masters in Education Program
- Official transcripts from each institution attended (a transcript MUST show the bachelor’s degree conferred)
- Letter of Candidate Introduction
- Two recommendation forms (within application)
- Emergency Contact Form (within application)
- $50 non-refundable application fee

MIAA credential candidates require additional admissions criteria

2018-2019 Tuition Rate: $460/unit
Classes held in-person at TCSJ:
2857 Transworld Drive, Stockton
CURR341 Preparing Students to be College and Career Ready in the 21st Century: Exploration (3)
Exploration of the context of 21st century learning environments are researched, observed, and evaluated. The recent reforms and innovations in TK-12 education, especially focusing on college and career readiness initiatives and implications to schools, are examined. Design Thinking is used to challenge candidates to reimagine solutions to complex educational issues and invent innovative models of schools and classrooms. What would a truly innovative, reform oriented, 21st century classroom look like? What are the implications to teachers who need to prepare students to be engaged in civics and global awareness? These issues are among the topics and questions considered in this course.

CURR343 Curriculum for the 21st Century (3)
Candidates extend their understanding of how to transition from conventional teaching strategies appropriate for 21st century learning environments. Application of Design Thinking for the development of integrated, real-life, inquiry based Project Based Learning units, along with a deep look at authentic assessment, reflect the candidates’ understanding of the need to reinvent how TK-12 students are prepared for their futures.

CURR344 Lesson Study (2)
This course focuses on the sequence of stages teachers attend to in an instructional cycle, or learning cycle, which helps candidates develop a full understanding of a lesson concept. Co-teaching, co-planning, and reflecting deeply on student evidence of learning within a lesson provides opportunities for combining theory and components of effective lesson design.

CURR345 Teacher Action Research (3)
The purpose of the Teacher Action Research course is to help candidates understand a research that is defined to be any effort towards reflective and disciplined inquiry. Course content includes learning the processes of action research, how to conduct action research, and that research can involve a wide array of methods derived from both the quantitative and qualitative domains. The focus of the action research project will be defined by the candidate and will follow guidelines related to the teaching and learning process, be within an appropriate scope of influence, and with a purpose of initiating action to understand or solve a problem.

CURR346 Writing the Literature Review (2)
Students will participate in conversations with faculty, experts and colleagues on a variety of topics related to the development of a literature review. Specific attention will be paid to topic development, keyword searches, adequate sources, writing style, development of an outline, and correct citing of research with American Psychological Association (APA).

STEM310 Introduction to STEM (2)
This course provides an overview of the attributes of the powerful learning environment provided in an integrated STEM classroom. Candidates experience true integration of topics from science, technology, engineering and mathematics taught in a purposeful, meaningful manner. Emphasis will be placed on shifting paradigms and practice regarding ‘failure’ and reflecting on what practices inspire students to engage in learning. The topics covered in this introductory course also include designing strategies for developing partnerships with STEM professionals in industry, developing new pedagogies and making curricular connections to real-world situations.

STEM320 Research in the STEM Classroom (3)
Research in the STEM Classroom prepares teachers to deepen their understanding of research and develop strategies for implementing student-directed research as part of their curriculum. Instruction in each stage of research and how to communicate results through effective writing comprise a substantial portion of the coursework.

STEM330 Technology and Tools in STEM Education (2)
The course takes a wide lens on computer science by covering topics such as programming, physical computing, and data. Students are empowered to create authentic artifacts and engage with Computer Science as a medium for creativity, communication, problem solving, and fun. How to use technology and tools to advance learning, collaboration, creativity, data management, and problem solving in a STEM setting comprise most of the coursework. Infusion of the techniques and ideas learned in this course is expected within the subsequent STEM courses.

STEM340 STEM I (2)
STEM I provides opportunities for candidates to experience, analyze, and design inquiry-based activities that can be incorporated into STEM units of learning and are aligned to the California Common Core State Standards and the Next Generation Science Standards. Identification of useful community and everyday resources that will enhance the quality of STEM units of learning, whether they be problem or project-based, is a focus embedded in the coursework. Other topics covered in the course include the consideration of assessments, student discourse and presentation, management of technology and tools.

STEM342 STEM II (3)
The capstone of this course is the development and implementation of an integrated STEM unit that utilizes Design Thinking to stimulate innovation and draw on methods from engineering and design. STEM II considers content from the Biological and Life Sciences Disciplinary Core Idea described within the NGSS. The course includes opportunities to plan K-12 curriculum that embeds specialized pedagogy for facilitating learning within effective integrated STEM education. Methods for effective implementation of labs and special consideration of classroom management of NGSS aligned lessons provides the framework of the course.

STEM346 STEM LAB (4)
The STEM Lab is a 21st century learning space that is designed to advance candidates’ knowledge of varied content within the STEM disciplines and challenge them to design, plan, and build their personal innovations within a STEM framework. Examples of some topics in the course include coding, robotics, App design, gaming, and virtual reality. Candidates will also learn to use state of the art technology in the SJCOE DEC center. Candidates will also explore and develop understanding of current advancements in biotechnology and microscopy.