Instructor Information

Instructor:	
Email:	
Office Voice Mail Line:	
Campus office hours:	
Virtual Office Hours:	

Course Description

This course is designed to explore the use of science, technology, engineering, arts, and math (STEAM) in early childhood classrooms. The course will include subject-matter alignment, discipline integration, and project-based learning to incorporate problem-solving and critical thinking strategies.

Student Learning Outcomes

Upon successful completion of this course the student will:
1. Unpack TEKS and PKG and use the unpacking to write measurable objectives in STEAM content areas.
2. Work in a PLC to interpret assessment data.
3. Design integrated STEAM lessons with an emphasis on problem-solving and critical thinking.
4. Utilize the vocabulary, primary concepts, definitions, and models applicable to project-based STEAM education.
5. Develop innovative and alternative teaching methods and learning activities that promote STEAM education.

Pedagogy and Professional Responsibilities (PPR):

Knowledge	Skills
Standard 1: 1.2, 1.4, 1.8, 1.9, 1.10, 1.12, 1.13, 1.14, 1.16, 1.17, 1.20, 1.21, 1.22, 1.23	**Standard 1**: 1.1, 1.4, 1.7, 1.10, 1.11, 1.12, 1.15, 1.16
Standard 2: 2.3, 2.5, 2.7, 2.10, 2.13, 2.14, 2.16, 2.18, 2.19, 2.21	**Standard 2**: 2.3, 2.6, 2.7, 2.8, 2.10, 2.14, 2.18, 2.19, 2.20
Standard 3: 3.1, 3.6, 3.7, 3.8, 3.15, 3.16	**Standard 3**: 3.1, 3.4, 3.5, 3.6, 3.8, 3.9, 3.13, 3.18, 3.20

Science, Math, Arts TEKS K-3, PK Guidelines Domains V, VI, VIII, and X, and Technology standards

Textbooks
Quigley, C.F. & Herro, D. (2019). *An educator's guide to STEAM*. **Teachers College Press.**
and

Cohen, L.E. & Waite-Stupiansky, S. (2020). *STEM in early childhood education: how science, technology, engineering, and mathematics strengthen learning*. **Routledge.**

Course Evaluation

Course evaluation is determined by the following ratings:

Letter Grades & Percentages	Points
A = 100% - 90%	500-446
B = 89% - 80%	445-396
C = 79% - 70%	395-346
D = 69%-60%	345-300
F = 59% and below	299-0

Points are awarded as follows:

> Science Activities Kit – 80 points
> Technology Activities Kit – 80 points
> Engineering Activities Kit – 80 points
> Arts Actiities Kit – 80 points
> Mathematics Activities Kit – 80 points
> Field Experience Reflection Journal – 100 points

Unless students are informed otherwise, assignments will be graded within 7 days of due date.

Professional Dispositions for Educators

Over the course of their preparation program, students are evaluated to ensure they are upholding the standards spelled out in the Professional Dispositions for Educators. This policy will apply to those students pursuing the Bachelor of Applied Science (BAS) in Early Childhood Education (ECE).

The Midland College (MC) Education Division focuses on preparing educators who respect differences, celebrate diversity, and demonstrate the requisite skills, knowledge, and dispositions expected of a professional in fostering student-centered learning environments. Dispositions are a vital component of teacher preparation and are defined as the "professional attitudes, values, and beliefs demonstrated through both verbal and non-verbal behaviors as educators interact with students, families, colleagues, and communities." (InTASC Model Core Teaching Standards and

Learning Progressions for Teachers (2013), p.6). Prospective educators are expected to develop and practice these attitudes, values, and beliefs throughout their preparation.

Ethics

The MC BAS in ECE expects that its students will abide by the Code of Ethics and Standard Practices for Texas Educators (19 TAC Chapter 247) and as outlined in Domain IV: Fulfilling Professional Roles and Responsibilities of the Pedagogy and Professional Responsibilities (PPR) Texas Examination of Educator Standards (TExES).

Resources

- TExES Preparation Manuals: Certification Preparation Materials
- 161 Pedagogy and Professional Responsibilities EC-12
- Science of Teaching Reading
- EC-3 Content
- State Board of Educator Certification
- APA format for written work: APA format
- TEKS: Texas Essential Knowledge and Skills
- PKG: Texas Prekindergarten Guidelines

Course Technology

Consistent with the State of Texas Standards for Texas Teachers and International Society for Technology in Education (ISTE), this course will emphasize "Technology Applications Standards I-IV. See Educator Standards for Technology Applications. Students should be able to

- Use Canvas Management System
- Create Word and PowerPoint files using Microsoft Office Software
- Use email with attachments
- Use of appropriate antivirus utilities
- Have access to a media player

All interactions with other students and the instructor should be professional and courteous. See Core Rules of Netiquette

Course Communications

MC provides each student an email account to be used in communication with College personnel. This is the default e-mail used in Canvas unless changed by the student. Student are responsible for checking their e-mail, Canvas messaging and announcements.

The instructor will provide feedback on assignment submissions. Students are responsible for reviewing instructor feedback.

Student Responsibilities and Class Policies:

Attendance

Attendance is expected. Excused absences and make-up work require instructor approval. Excessive absences, even if excused, may result in course failure.

Assignment Submissions

Assignments must be submitted in Canvas. Students are responsible for ensuring that assignments can be read in Canvas.

Late Work

Late work will not be accepted without instructor approval. The instructor may deduct points from late work.

Scholastic Dishonesty

Students are expected to maintain high academic standards, including being responsible for submitting original work. Information on scholastic dishonesty and the discipline process is in the MC *Catalog and Student Handbook*, Scholastic Dishonesty section.

The instructor may use a tool called Turnitin to compare a student's work with multiple sources. The tool itself does not determine whether or not a paper has been plagiarized, that judgment will be made by the instructor.

Field Experiences

State law requires a background check for all individuals who work, volunteer, or have contact with children in a public school. The link is provided in the Canvas course. Students will not be able to schedule their field experiences until the background check is completed and approved.

After approval, students are responsible for scheduling appointments for field experiences. Students may schedule experiences only where assigned. During field experiences, students must wear an MC ID and follow all site rules and guidelines.

Title IX: Non-Discrimination Statement

MC does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following individual has been designated to handle inquiries regarding non-discrimination policies:

> Tana Baker, Title IX Coordinator/Compliance Officer, 3600 N. Garfield, SSC 131, Midland, Texas 79705, (432) 685-4781, tbaker@midland.edu

For further information on notice of non-discrimination, visit the ED.gov Office of Civil Rights website, or call 1 (800) 421-3481.

Americans with Disabilities Act (ADA) Statement

MC provides services for students with disabilities through Student Services. In order to receive accommodations, students must visit www.midland.edu/accommodation and complete the Application for Accommodation Services located under the Apply for Accommodations tab. Services or accommodations are not automatic, each student must apply and be approved to receive them. All documentation submitted will be reviewed and a "Notice of Accommodations" letter will be sent to instructors outlining any reasonable accommodations.

Support Our Students

The Support Our Students (SOS) program helps MC students enrolled in credit courses stay in school by assisting them with emergency non-academic needs. For more information on SOS services see the web site: https://www.midland.edu/services-resources/student-services/sos.php

Cell Phone Rules

All cell phones must be silenced during class. Students may not text during class. Instructor permission is required for audio or video recording of classes.

Grade Appeal

Procedures for grade appeal can be found in the MC *Catalog & Student Handbook*, Grievances and Complaints section.

Course Schedule

This is an estimate and is subject to the instructor's discretion and may be changed.

Week/ Student Learning Outcome(s) (SLO)	Readings and Preparation for this week's class:	In Class Activities	Assignment (Points)	Due Date
1 SLO: 1,	• Introductions • Part 1: Conceptualizing STEAM (13-28)	• Syllabus • Course Expectations • Ethics and Dispositions • Field Experience • Assignments • Unpacking the Conceptual Model to Guide STEAM Teaching • 21st century skills	• Introduction	

Week/ Student Learning Outcome(s) (SLO)	Readings and Preparation for this week's class:	In Class Activities	Assignment (Points)	Due Date
2 SLOs: 3, 4, 5	• Visioning, Planning, and Supporting STEAM instruction in schools (29-39) • Understanding the Rolel of Teaching across the Disciplines (61-78) •	• Understanding and Defining STEAM • Building a Foundation for STEAM • Authentic Discipline Integration • The Role of the Teacher		
3 SLOs: 3, 4, 5	• Making STEAM relevant to students (41-58)	• Designing a STEAM unit around interests • Creating problem scenarios		
4 SLOs: 3, 4, 5	• Science in Early Learning Environments	• Inquiry • Investigations over time • Science across domains		
5 SLOs: 3, 4, 5	• Technology in Early Learning Environments	• Appropriate and Intentional early childhood practices	• Science Activities Kit	Monday by midnight
6 SLOs: 3, 4, 5	• Engineering in Early Learning Environments	• Why engineering? Developmental Appropriateness? • Learning by making • Content and Pedagogy; learning about engineering vs. practicing engineering		
7 SLOs: 3, 4, 5	• Valuing the A in STEAM	• Continuum of Arts Integration • Value of ARTS in STEAM	• Technology Activities Kit	Monday by midnight

Week/ Student Learning Outcome(s) (SLO)	Readings and Preparation for this week's class:	In Class Activities	Assignment (Points)	Due Date
		• ART and Problem Solving		
8 SLOs: 3, 4, 5	• Mathematics in Early Learning Environments	• Myths and Misconceptions • Learning Trajectories •		
9 SLOs: 3, 4, 5	• STEAM and Higher Order Thinking Skills (81-118)	• Engineering Design during Play • Scaffolding engineering design • Ask, Imagine, Plan, Create, and Improve • Tinkering	• Engineering Activities Kit	Monday by midnight
10 SLOs: 2	• Part III: Making STEAM work (93-107)	• Assessment • Administrative Support • Buy-In • Vertical and Horizontal alignment		
11 SLO: 2	• Assessing STEAM learning	• Formative assessment • Authentic summative assessment • Peer and Self Assessment		
12 SLOs: 2	• STEAM across different school settings (109-119)	• STEAM schools • STEAM in traditional schools	• Arts Activities Kit	Monday by midnight
13 SLOs: 3, 4, 5	• STEAM beyond the classroom (139-182)	• Other learning environments		
14 SLO: 2	• Challenges to STEAM (121-130)	• Shifts in pedagogy and understanding • Planning and resource issues • Pacing issues		

Week/ Student Learning Outcome(s) (SLO)	Readings and Preparation for this week's class:	In Class Activities	Assignment (Points)	Due Date
		• Integration • Solutions to these challenges		
15	•	•	• Mathematics Activities Kit	Monday by midnight
16	• ePortfolio	•	• Field Experiences Reflection Journal	

Please note that the instructor reserves the right to change the syllabus.