Course Syllabus: Teaching Science in Elementary School

College of Education
EDUC 4503 Section X10
Spring 2026

Contact Information

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Course Description

This field-based course focuses on elementary school science pedagogy with emphasis on instructional strategies and models, the use of technology in the learning/teaching process, effective practices, professionalism, curriculum, and lesson design. Different teaching strategies include appropriate use of creative approaches to the learning/teaching process, cooperative learning, direct instruction, inquiry, concept attainment, etc. An important component of this field-based block of classes is the course time spent in active participation in field (classroom) experiences.

Textbook & Instructional Materials

Open Education resource materials will be used in the class. There is no required textbook for the class.

Study Hours and Tutoring Assistance

Located in Moffett Library, The Office of Tutoring and Academic Support Programs (TASP) offers a variety of resources designed to help students meet the demands of the college classroom. Their mission is to provide the necessary support to help students achieve academic success. This can be completing in-person and through distance learning. Visit the website MSU-Texas-Tutoring for more information.

Student Handbook

Refer to: Student Handbook

Academic Misconduct Policy & Procedures

Academic Dishonesty: Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individuals to whom credit is given). Additional guidelines on procedures in these matters may be found in the Office of Student Conduct. Office of Student Conduct

Moffett Library

Moffett Library provides resources and services to support student's studies and assignments, including books, peer-reviewed journals, databases, and multimedia materials accessible both on campus and remotely. The library offers media equipment checkout, reservable study rooms, and research assistance from librarians to help students effectively find, evaluate, and use information. Get started on this Moffett Library webpage to explore these resources and learn how to best utilize the library.

Grading

Course Grade – There are 6 module synthesis assignments, 2 required Zoom conferences before and after the Science Classroom Teaching Experience, 1 formal science lesson plan to use during the Science Classroom Teaching Experience, and a grade for timeliness and professionalism. There is 1 performance-based assignment, the Science Classroom Teaching Experience, worth 500 total points, or 1/2 of the final grade.

Table 1: Points allocated to each assignment

Assignments	*Points*
Introduction Module	25
Module Synthesis Assignments (6 x 75pts. Each)	450
1 Zoom Pre-Teaching Conference and 1 Zoom Post- Teaching Conferences (2 x 50 points)	100
1 Formal Science Lesson Plan	100
1 Post-Teaching Reflection	75
1 Performance Assessment – Science Classroom Teaching Experience (submit video to D2L)	225
Timeliness & professionalism	25
Total Points	1000

Table 2: Total points for final grade.

Grade	*Points*
A	900 to 1000
B	800 to 899
C	700 to 799
D	600 to 699
F	Less than 600

Homework

Each module will have a synthesis assignment that will assess your ability to synthesize and apply the module's learning goal. To receive full credit for a synthesis assignment, you must review all the documents, videos, activities, etc. for the Module in D2L and submit the assignment on the due date. Assignments are due by 11:59pm. There are some written assignments in this course that build your understanding of thinking about the nature of science and prepare you to become aware of research-based practices in teaching science. Details for assignments will be on D2L. Any questions can be asked via email or during a Zoom appointment.

Expectations for Written Work

Correct grammar, punctuation, and spelling are expected on all written assignments (although web discussions are not held to the high standard of a research project or other written assignment).

Written Assignments Should Be

Done in Microsoft Word and turned in as an attachment in Dropbox on D2L (do not submit assignments as PDF because it limits my ability to give constructive feedback). Discussions (if applicable) should be completed within the D2L discussion space and NOT uploaded as an attachment.

Performance Assessment

The performance assessment for this course is a Science Classroom Teaching Experience using inquiry-based instruction. Students will research, identify, design, and implement an inquiry-based science lesson in a mainstream science classroom setting. This is a requirement for course credit.

All grade levels are examined within the TEKs to determine what knowledge, skills, and abilities are addressed at the different grade levels. Students are to determine how the standards are connected.

Students will identify the basic ideas behind constructivism. They will explore several resources on constructivism and methods to scaffold learning in a science classroom.

Students will then dive deeper into inquiry-based instructional practices. They will explore research-based strategies and practices that acknowledge and

respect diversity in the science classroom. They will examine teachers using strategies for teaching culturally diverse students, culturally responsive pedagogy, and read research regarding this practice.

Students will explore the content areas necessary to teach science. They will first explore the nature of science, how science is a unique academic discipline, and basic ideas for teaching and learning in science. They will next explore the techniques and strategies of teaching physical science, life science, and earth/space science.

Students will write an original inquiry-based lesson plan. They will plan an instructional experience which demonstrates their knowledge and skills in the following areas: Learner Development, Learner Differences, Learning Environment, Content Knowledge, Application of Content, Assessment, Planning for Instruction, Instructional Strategies, and Professional Learning and Ethical

Practice (West College of Education Handbook of Policies and Clinical Experiences; In TASC Standards). The student must achieve a Developing or Above on all criteria- failure to achieve a Developing or above will result in teaching a mini-lesson that specifically addresses the deficit(s).

Extra Credit

There are no plans for extra credit on assignments, however, students may be provided an opportunity to revise an assignment in order to improve their grade.

Late Work

Because all assignments are available and submitted online, "make up" work should not be an issue. The D2L Dropbox will close at 11:59pm on the due date. If there are any issues or you are confused about an assignment, contact Dr. Brown *BEFORE* the assignment is due (at least 24 to 48 hours before the assignment is due). Time shown on D2L, or email will be used. Late work will not be accepted unless a written medical or equally extenuating circumstance is provided. Late work will not be accepted more than one week after the due date UNLESS you communicate with me via email and document why an assignment is missing. If you have a life event that impacts your ability to submit an assignment on time, it is up to the student to communicate with me as soon as possible. When in doubt, send an email and explain your situation – do not avoid tough conversations to the detriment of your grade.

Important Dates

- Last day for term schedule changes: January 23rd, 2026.
  Check date on Academic Calendar.
- Deadline to file for graduation: February 16th, 2026.
  Check date on Academic Calendar.
- Last Day to drop with a grade of "W": April 29th, 2026.
  Check date on Academic Calendar.

- Refer to: Drops, Withdrawals & Void

Desire-to-Learn (D2L)

Extensive use of the MSU D2L program is a part of this course. Each student is expected to be familiar with this program as it provides a primary source of communication regarding assignments, examination materials, and general course information. You can log into D2L through the MSU Homepage. If you experience difficulties, please contact the technicians listed for the program or contact your instructor.

Attendance

Students are expected to attend all meetings of the classes in which they are enrolled. Although in general students are graded on intellectual effort and performance rather than attendance, absences may lower the student's grade where class attendance and class participation are deemed essential by the faculty member. In those classes where attendance is considered as part of the grade, the instructor should so inform students of the specifics in writing at the beginning of the semester in a syllabus or separate attendance policy statement. An instructor who has an attendance policy must keep records on a daily basis. The instructor must give the student a verbal or written warning prior to being dropped from the class. Instructor's records will stand as evidence of absences. A student with excessive absences may be dropped from a course by the instructor. Any individual faculty member or college has the authority to establish an attendance policy, providing the policy is in accordance with the General University Policies.

Online Computer Requirements

Taking an online class requires you to have access to a computer (with Internet access) to complete and upload your assignments. It is your responsibility to have (or have access to) a working computer in this class. ***Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.*** Computers are available on campus in various areas of the buildings as well as the Academic Success Center. ***Your computer being down is not an excuse for missing a deadline!!** There are many places to access your class! Our online classes can be accessed from any computer in the world which is connected to the internet. Contact your instructor immediately upon having computer trouble If you have technical difficulties in the course, there is also a student helpdesk available to you. The college cannot work directly on student computers due to both liability and resource limitations however they are able to help you get connected to our online services. For help, log into D2L**.**

Instructor Class Policies

Cheating, collusion, and plagiarism (the act of using source material of other persons, either published or unpublished, without following the accepted techniques of crediting, or the submission for credit of work not the individuals to whom credit is given) will not be considered. Turnitin will be used for the written assignments and D2L directly syncs with it (you do not have to do anything). You will be able to see the plagiarism percentage and are welcome to make changes and resubmit *BEFORE* the due date. *Any plagiarism of 30% and above is too much! Your plagiarized assignment will not be graded, receive a zero, and no make-up allowed.

Self-plagiarism refers to submitting work for credit that is the same or substantially similar to work prepared or submitted for another course without appropriate citation. This includes reusing previous assignments, papers, presentations, or other submissions without instructor approval. Self-plagiarism gives the impression of original work when, in fact, the content has already been submitted for assessment elsewhere. To avoid self-plagiarism, communicate openly with your instructor about building on existing work or repurposing prior submissions. Provide proper citations for any previous work referenced. Unless the instructor indicates otherwise, all assignments submitted for this course must be newly prepared by you and you alone for this specific class. Any self-plagiarism of 30% and above is too much! Your plagiarized assignment will not be graded, receive a zero, and no make-up allowed.

Advances in Artificial Intelligence (AI) have now provided generative and creative applications such as Chat GPT, Google Bard, Guru, Microsoft Copilot, and others. Certainly, these tools can be quite useful in the learning process; however, the content they generate does not represent the effort and learning of the student. Since writing, analytical, and critical thinking skills are part of the learning outcomes of this course, all writing assignments should be prepared by the student. Developing strong competencies in this area will prepare you for a competitive workplace. Submitting AI generated work in place of the original and genuine work of the student will be considered a form of academic misconduct. Therefore, AI-generated submissions are not permitted and will be treated as plagiarism. Any AI generated work of 30% and above is too much! Your assignment will not be graded, receive a zero, and no make- up allowed.

You may type a question into ChatGPT, you may not exactly copy and paste its response and turn it in as your own. If you use ChatGPT or any AI, please use it in ways that are ethical, accurate, and useful.

Any instance of plagiarism, AI-generated content, and/or self-plagiarism will be subject to disciplinary action in accordance with the Academic Integrity Policy

outlined in the Student Handbook. It's important to remember that the consequences of violating this policy are serious and can have a lasting impact on your academic record. By enrolling in this course, you acknowledge and agree to comply with this plagiarism and AI-generated content policy. You're understanding and commitment to academic integrity are crucial to our learning community.

Change of Schedule

A student dropping a course (but not withdrawing from the University) within the first 12 class days of a regular semester or the first four class days of a summer semester is eligible for a100% refund of applicable tuition and fees. Dates are published in the Schedule of Classes each semester.

Refund and Repayment Policy

A student who withdraws or is administratively withdrawn from Midwestern State University (MSU) may be eligible to receive a refund for all or a portion of the tuition, fees and room/board charges that were paid to MSU for the semester. HOWEVER, if the student received financial aid (federal/state/institutional grants, loans and/or scholarships), all or a portion of the refund may be returned to the financial aid programs. As described below, two formulas (federal and state) exists in determining the amount of the refund. (Examples of each refund calculation will be made available upon request).

Services for Students with Disabilities

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable accommodations to ensure equal opportunity for qualified persons with disabilities to participate in all educational, social, and recreational programs and activities. After notification of acceptance, students requiring accommodations should make application for such assistance through Disability Support Services, located in the Student Wellness Center, (940) 397-4140. Current documentation of a disability will be required in order to provide appropriate services, and each request will be individually reviewed. For more details, please go to Disability Support Services.

College Policies

Campus Carry Rules/Policies

Refer to: Campus Carry Rules and Policies

Smoking/Tobacco Policy

College policy strictly prohibits the use of tobacco products in any building owned or operated by WATC. Adult students may smoke only in the outside designated-smoking areas at each location.

Alcohol and Drug Policy

To comply with the Drug Free Schools and Communities Act of 1989 and subsequent amendments, students and employees of Midwestern State are informed that strictly enforced policies are in place which prohibits the unlawful possession, use or distribution of any illicit drugs, including alcohol, on university property or as part of any university-sponsored activity. Students and employees are also subject to all applicable legal sanctions under local, state and federal law for any offenses involving illicit drugs on University property or at University-sponsored activities.

Campus Carry

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes has prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License to Carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit Campus Carry.

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit MSUReady – Active Shooter. Students are encouraged to watch the video entitled "*Run. Hide. Fight.*" which may be electronically accessed via the University police department's webpage: *"Run. Hide. Fight."*

Grade Appeal Process

Update as needed. Students who wish to appeal a grade should consult the Midwestern State University MSU Catalog

*__Notice:__ Changes in the course syllabus, procedure, assignments, and schedule may be made at the discretion of the instructor.

Course Schedule:

Week	*Activities/Assignments/Exams*	*Due Date*
Jan 20-25	Intro Module	Sunday 25th by 11:59 pm
Jan 26- Feb 4	Module 1: Nature of Science Writing Assignment #1	Sunday 4th by 11:59 pm
Feb 6-15	Module 2: Constructivism & Science Teaching Discussion Post #1	Sunday 15th by 11:59 pm
Feb 17-26	Module 3: TEKS Alignment & Content Knowledge Assignment #1	Sunday 26th by 11:59 pm
March 1-31	Module 4: Planning & Teaching a Science Lesson • 5E Lesson Plan • Classroom Observation Grade • Observation Reflection	*Week of March 1:* Pre-conferences *March 16-27:* Teaching *March 30 & 31:* Post-conferences
April 1-10	Module 5: Teaching Physical Science for Understanding Assessment #1	Sunday 10th by 11:59 pm
April 12-21	Module 6: Teaching Life Science for Understanding Assessment #2	Sunday 21st by 11:59 pm
April 23- May 2	Module 7: Teaching Earth/Space Science for Understanding Assessment #3	Sunday 2nd by 11:59 pm
May 4- 13	Module 8: Final Project	Sunday 13th by 11:59 pm