Teaching Science EC-6_EDEE-3330_006

Welcome to the EDEE 3330 course! This syllabus is designed to help you become successful while in class and after taking the course.

Instructor Information

Course Name	Teaching Science EC-6_001_Tuesday (9:00 AM-11:50AM)
Instructors' Name	Dr. Mila Rosa L. Carden
Office Location	Matthews Hall 218-H
Office Hours	Monday: 9AM -12NN; Tues: 1:00 PM- 3:00 PM; 4:00Pm-5:00 PM (Zoom meeting (by appointment) Zoom link: https://unt.zoom.us/my/mlcunt
	Email: milarosa.carden@unt.edu

Course Description

Teaching Science EC-6. Introduces students to the scope and sequence of science education in an elementary school setting, to lesson plans and lesson design inside both formal and informal learning settings, and to the contributions of scientists of from various backgrounds, race, ethnicities. Focuses on ways to make science accessible for all and use scientific knowledge to make informed decisions. Must be taken in Block A. Prerequisite(s): Admission to teacher education program. Corequisite(s): EDRE 3350 and EDEE 3340.

Course Structure

EDEE 3330-Teaching EC-6 a is a face-to-face, 15-week course, 2hrs and 50-minute long per session. All assignments have due dates; please refer to the course schedule included in this syllabus. All sessions will be at Matthews Hall, Rm 111 (change of venue will be promptly communicated). Each session includes one module with a focused topic that will last for a week. If there are meritorious reasons (e.g., suspension of classes), module coverage will be extended to the next session/s. All readings will be uploaded to Canvas.

Course Objectives:

By the end of this course, and with the support of your instructor, you will:

1. demonstrate professional skills, knowledge, and attitudes as outlined in the Texas Teachers Proficiencies
2. identify appropriate science materials, lessons, and strategies for your selected grade level to plan and teach Science Content in the Texas Essential Knowledge and Skills.
3. incorporate evidence-based science practices and safe science practices in lesson plans and implementations.
4. design/modify activities to support equitable and inclusive science learning.
5. demonstrate understanding of the nature of science through your 5E lesson plans and microteaching.

Course Requirements

Homework		5%
Science and Me (HW and completion assignment)	20	
Nature of Science Survey	20 (pre); 20 (post)	
Safety Training	50	
Microteaching Reflection	50	
In-Class assignments (IA) part of participation		5%
In- Class activities Line of Learning (Exit Ticket) 5-10 pt quiz	TBD	
Major Requirements		70% /2
5E Try it lesson plans Phases: Engage, Explore, Explain, Elaborate, Evaluate (20 pts each phase)	60	35%
Final Lesson Plan	60	
Microteaching	100	35%
FINAL EXAM	100	10%
Attendance and Professionalism		10 %
Professionalism	10	
Attendance	10	
Total Points Possible	500	100%

There are **two major requirements** in this course: Writing a **lesson plan** within an inquiry approach and a **microteaching** (teaching your lesson to your peers). To successfully

accomplish these requirements, you will have to complete in-class assignments (IA) and home-based assignments (homework).

In-Class Assignment (IA): This assignment must be completed and submitted at the end of the class session. This assignment may be completed as an individual, a paired, or a small group work. Most of the in-class assignments are completion assignments. You get a perfect score if you address the questions completely and appropriately. Some will be graded based on rubric.

*Line of Learning (LOL): This is a self-assessment task in which you must answer a specific prompt (an open-ended question) at the end of each session. The aim of this LOL time is to help you reflect on what you have learned during the session.

Homework (HW): This assignment will be mostly individual work. You will be given a week or longer (as appropriate) to complete the task, therefore, due dates will vary.

Late Assignments

You are expected to turn in quality work; therefore, if you need more time to work on a particular assignment, you can submit your work two (2) days after the due date. Please use the extension coupon available in your Canvas course. If you surpass the two-day extension, you can only receive a maximum passing grade of C. Reserve this extension coupon for major assignments (up to two extension requests only). NO late submission for in-class assignments unless we ran out of time during our class session. If you are sick or have other meritorious reason for missing the due date, send me a message and explain your reason and provide documentation if necessary.

Please be responsible for managing your time. Set priorities and plan well.

Course Schedule: *Please note that this schedule **may change** to meet students' needs or due to unprecedented circumstances.*

Wk	Date	Topic	Assignments (all due dates in Canvas)
1	Jan 13	Course Introduction: Syllabus Discussion including course requirements	
2	Jan 20	Introduction to Science Education	• HW: Nature of Science survey (pre) • HW: Science and Me Story Due date: Jan 20
3	Jan 27	Standards for Science Education • TEKS • NGSS Three-Dimensional Learning	• In class Activities
4	Feb 3	Making Science Experience Meaningful in your Classroom: Models of Teaching Science • Engage/Explore	• In class Activities

5	Feb 10	Making Science Experience Meaningful in your Classroom: Models of Teaching Science Explain/Elaborate	• In class Activities
6	Feb 17	Making Science Experience Meaningful in your Classroom: Models of Teaching Science 5E Learning Cycle: Modelling Lesson (Evaluate)	• In class Activities • HW: Try it #1 Engage (Due Date: Feb 16)
7	Feb 24	Making Science Experience Meaningful in your Classroom: Models of Teaching Science	• In class Activities • HW: Safety Module (submit certificate)
8	Mar 3	Making Science Experience Meaningful in your Classroom: Models of Teaching Science	• In class Activities • HW: Try it # 2: Explore (Due date: Mar 2)
9	Mar 9-15	SPRING BREAK	
10	Mar 17	Making Science Accessible for All: Accommodations and Modifications for Science Teaching for all Learners	• In- Class Activities • HW Try it # 3: Explain and Elaborate (Due date: March 16)
11	Mar 24	STEM Teaching Practices and Socioscientific Issues	• In-Class Activities
12	Mar 31	Microteaching Group 1(8 students)	• In- Class Activities • HW: Try it # 4 Evaluate, Accommodations and Modifications (Due Date: March 30)
13	Apr 7	Microteaching Group 2 (8 students)	• HW: Full Lesson Plan Draft (optional) • HW: Microteaching Group 1 Reflection due date: April 7
14	Apr 14	Microteaching Group 3 (8 students)	• In-Class Activity: Science Attitude Survey • HW: Microteaching Group 2 Reflection due date: April 14
15	Apr 21	Asynchronous	• HW: NOS survey (post) • HW: Microteaching Group 2 Reflection due date: April 14
16	April 28	Ambitious Science Teaching	• FINAL LESSON PLAN (Due: May 1) In Class Activities
17	May 4-8	Final Exam-Online	• Final Exam (May 4) • HW: Microteaching Group 3 Reflection due date: May 5

Classroom Policies

For laboratory activities, please be informed of the following safety procedures and guidelines:

While working in laboratory sessions, you are required to follow proper safety procedures and guidelines in all activities requiring lifting, climbing, walking on slippery surfaces, using equipment and tools, handling chemical solutions and hot and cold products. Students should be aware that UNT is not liable for injuries incurred while students are participating in class activities. All students are encouraged to secure adequate insurance coverage in the event of accidental injury. Students who do not have insurance coverage should consider obtaining Student Health Insurance. Brochures for student insurance are available in the UNT Student Health and Wellness Center. Students who are injured during class activities may seek medical attention at the Student Health and Wellness Center at rates that are reduced compared to other medical facilities. If students have an insurance plan other than Student Health Insurance at UNT, they should be sure that the plan covers treatment at this facility. If students choose not to go to the UNT Student Health and Wellness Center, they may be transported to an emergency room at a local hospital. Students are responsible for expenses incurred there.

To ensure that you understand safety measures, you will have to complete the Texas Education Agency Safety Training Course. See Canvas for details. In addition, you will read and sign the safety contract found in this link. I will provide a hard copy on the first day of the class.

Specific Laboratory rules during class:

- No eating is allowed inside the laboratory.
- Place all drinks in the designated corner of the room.
- Always wear your apron and goggles during laboratory activities.
- Seek assistance from the professor if needed.
- Report any accidents to the professor immediately

How to Succeed in this Course

I always start my class with "science and me" storytelling. Your stories provide me a window to your past and present science learning experiences, including negative and positive attitudes toward science and apprehensions about teaching science. Knowing your stories will help me get to know you, thus helping me better support your learning. As future science teachers, it is important that you are confident in how to teach science. To help you gain this confidence, you will be "lead learners' in class. My hope is that you will have a sense of self-value as a source of scientific knowledge in and out of the classroom. Throughout the course, I want you to not just learn and do science but learn *about* science. After the course, you should be able to address these questions: ***How is scientific knowledge constructed? Why do we teach science?***

One of the critical indicators of your success in this class is communication. I prefer to address your concerns about the class (e.g., assignments, readings) and/or personal concerns about this class during my consultation hours: Monday: 9AM -12NN;Tues: 1PM- 3PM;4PM-5PM; Zoom/Team meeting (by appointment). I will also allot the last 15-20 minutes of the class as Q and A session.

If these days and times do not fit with your schedule, please email me and I will respond within 48 hours. If it is urgent, please indicate it in the SUBJECT of your email. I prefer in-person meetings, but if unforeseen events happen and you cannot come for in-person consultation hours, you can arrange a Zoom meeting with me. For Zoom meetings, make an appointment two days before your desired meeting. Please come on time during in-person and Zoom consultation/meetings.

Your success is important to me, so I HIGHLY encourage you to use these consultation hours for all your class-related concerns.

Source: Online Communication Tips (https://clear.unt.edu/online-communication-tips)
Attendance: This course is designed and organized to be highly collaborative and interactive. Our sessions will involve small and whole group activities and discussions. Therefore, your attendance and participation are essential to the learning of everyone on our course. It is very difficult to be enriched by discussions and collaborations if you are not physically present or prepared for class. Per university policy 06.039, an excused absence falls under the following categories:

- religious holy day, including travel for that purpose;
- active military service, including travel for that purpose;
- participation in an official university function;
- illness or other extenuating circumstances;
- pregnancy and parenting under Title IX; and
- when the University is officially closed.

Examples of absences considered extenuating circumstances include:

- Temporary disability or injury
- Extended medical absence or hospitalization
- Illness of a dependent family member
- Major illness or death of a loved one, which may include immediate family members of the student, spouses/partners, and others as deemed appropriate by the Dean of Students office
- Car accident that takes away transportation
- Housing emergencies
- Significant mental health concerns

For absences related to significant illness or extenuating circumstances, faculty can request that verification/documentation of absence go through the Dean of Students office.

Examples of extenuating circumstances considered to be a matter between the faculty member and student include:

- Professional school interviews
- Conference attendance
- Receiving academic awards such as scholarships or other academic honors
- Missing class due to being waitlisted (only applicable prior to census date)

- Personal travel
- Short-term illnesses and doctor appointments (Flu, covid, strep, cold, etc.)

If you cannot attend a class for any reason (including those not listed above), please notify me **as soon as possible**. Likewise, for reasons not listed above where a missing class is unavoidable, please let me know so we can devise an alternate plan. You must communicate with me as soon as you can (preferrable within ten after the occurrence).
Attendance and participation in this class are required. Our class time will consist of many small groups and a whole class discussion. You are a vital part of a learning community, and Your contributions are part of the knowledge that we create in our classroom. Therefore, we need you here as often as you are able.
If you are unable to attend the class, I expect you to inform me in advance whenever possible. Missing more than two classes or missing any class without contacting the instructor will affect your participation grade and may warrant further administrative action. *You are still responsible for turning in assigned work if you are absent. If you are absent for more than* ***3 consecutive or accumulated excused absences****, I will refer your case to the Dean of Student affairs to assess your attendance. Additionally, you will provide valid documentation such as medical certificate.*

0 – 1 unexcused absence 10 points
2 unexcused absences 7 points
3 unexcused absences 3 points
4 unexcused absences F in the course

You are also expected to arrive at class on time and not leave before the end of the course. **Three instances of arriving more than 15 minutes late or leaving 15 minutes early will result in one unexcused absence**. Coming to class late or leaving early for the reasons listed above for excused absences will be counted as excused. Again, be sure to communicate with me in those instances.

"A student is responsible for requesting an excused absence in writing, providing satisfactory evidence to the faculty member to substantiate excused absence, and delivering the request personally to the faculty member assigned to the course for which the student will be absent. (Reference: 06.039 Student Attendance and Authorized Absences, p. 2)
"When an absence is excused, the faculty member will provide a reasonable time after the absence for the student to complete an assignment or examination missed." (Reference: 06.039 Student Attendance and Authorized Absences, p. 2) NOTE: Reasonable time means at least 10 days.

Late Assignments:

Observation of Religious Holy Days

If you plan to observe a religious holy day that coincides with a class day, please notify your instructor as soon as possible.

Late Assignments

You are expected to turn in quality work; therefore, if you need more time to work on your assignment, you can submit your work a day after the due date. If you surpass the two-day extension, you can only receive a maximum passing grade of C. NO late submission for in-class assignments unless we ran out of time during our class session. Please be responsible for managing your time. Set priorities and plan well. I will provide an "assignment extension coupon" if the one-day extension is still not enough for you to finish the work.

Supporting Your Success and Creating an Inclusive Learning Environment

We all come to this course with different perspectives influenced by our personal cultural background and diverse learning styles and level of abilities. Therefore, I expect each of you and including me to be respectful all the time. Below are my expectations and non-negotiable rules in class.

Use of Digital Devices (e.g., Laptop, cell phone, iPad)

- As a matter of professional courtesy, I require that *any cell phone(s) be set* in *silent mode* before class begins and keep them in this mode until class is over, no texting. If you need to take an emergency call, please step out of the room to take the call, and let me know about it.
- The use of laptops may take your attention away from meaningful classroom experiences. Please be responsible when using your laptops and iPads.
  You can only use your laptops/devises during class for online resources/ technology-based activities and if needed.

"UNT strives to offer you a high-quality education and a supportive environment, so you learn and grow. As a faculty member, I am committed to helping you be successful as a student. To learn more about campus resources and information on how you can be successful at UNT, go to unt.edu/success and explore unt.edu/wellness. To get all your enrollment and student financial-related questions answered, go to scrappysays.unt.edu."

Assessing Your Work

Grading
A = 90%-100%
B = 80-89
C = 70-79
D = 60-69

F = below 60%

Academic Integrity and Academic Dishonesty

Academic Integrity is defined in the UNT Policy on Student Standards for Academic Integrity. Academic Dishonesty includes cheating, plagiarism, forgery, fabrication, facilitating academic dishonesty, and sabotage. Any suspected case of Academic Dishonesty will be handled in accordance with university policy and procedures. Possible academic penalties range from a verbal or written admonition to a grade of "F" in the course. Further sanctions may apply to incidents involving major violations. The policy and procedures are available at: Academic Integrity Policy (PDF) (https://policy.unt.edu/policy/06-003).

In this course, I want you to engage deeply with the materials and develop your own critical thinking and writing skills. For this reason, the use of Generative AI (GenAI) tools like Claude, ChatGPT, and Gemini is not permitted. While these tools can be helpful in some contexts, they do not align with our goal of fostering the development of your independent thinking. **Using GenAI to complete any part of an assignment will be considered a violation of academic integrity**, as it prevents the development of your own skills, and will be addressed according to the Student Academic Integrity policy (https://policy.unt.edu/policy/06-003).

Generated AI Policy (GenAI)

What is GenAI?

"Generative Artificial Intelligence (GenAI) refers to software systems and platforms that create new content, such as text, images, audio or video using generative models. These models identify patterns from large datasets, enabling them to generate data in response to specific prompts, which in many ways can resemble human-created content." (UNT Academic Integrity Guidance on GenAI, 2021, p.1)

Limited Use

Throughout the semester, you will or may use specific Generative AI (GenAI) tools for certain assignments, with guidance on responsible use. These assignments help build ethical resilience and GenAI literacy, preparing you for careers in a GenAI-oriented workforce.

In accordance with the UNT Honor Code, unauthorized use of GenAI tools is prohibited. Using GenAI content without proper credit or substituting your own work with GenAI undermines the learning process and violates UNT academic integrity

Declaration Statement (UNT)

I use GenAI to [insert action(s) here, e.g., enhance materials, streamline tasks, generate prompts, create scenarios, draft syllabi, build study guides, analyze performance]. I will always disclose how I use GenAI, and I expect the same from

you.

AI Use Guidelines:

- You can use this as reference but DO NOT submit generated AI work.
- UNT policies apply to any form of cheating and plagiarism.
- Declare use of AI

Online Resources/Courses to learn more about AI use:

AI FUNDAMENTALS PART 1: DEMYSTIFYING AI

AI FUNDAMENTALS PART 2: HOW YOU CAN USE AI

MORE UNT POLICIES:

Acceptable Student Behavior

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the class and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at UNT Policy 07.012 Code of Student Conduct.

EagleConnect

All UNT students should activate and regularly check their EagleConnect (e-mail) account. EagleConnect is used for official communication from the University to students. Many important announcements for the University and College are sent to students via EagleConnect. For information about EagleConnect, including how to activate an account and how to have EagleConnect forwarded to another e-mail address, visit https://eagleconnect.unt.edu. This is the main electronic contact for all course-related information and/or material.

Emergency Notifications and Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Retention of Student Records

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about students' records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy.

Sexual Discrimination, Harassment, & Assault

UNT is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these acts of aggression, please know that you are not alone. The federal Title IX law makes it clear that violence and harassment based on sex and gender are Civil Rights offenses. Because of Texas Senate Bill 212, as a UNT employee, I am required by law to report sexual misconduct, relationship violence, stalking, and crimes. I cannot keep those things confidential if you reveal any of those to me. If you need a confidential resource available on campus or in the local community then I can refer you.
UNT has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more.

UNT's Dean of Students' website offers a range of on-campus and off-campus resources to help support survivors, depending on their unique needs: http://deanofstudents.unt.edu/resources_0. UNT's Student Advocate can be reached through e-mail at SurvivorAdvocate@unt.edu or by calling the Dean of Students' office at 940-565-2648. You are not alone. We are here to help.

Student Perceptions of Teaching (SPOT)

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13 and 14 of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via *IASystem* Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey, they will receive a confirmation email that the survey has been submitted. For additional information, please visit the spot website at www.spot.unt.edu or email spot@unt.edu.

EDUCATOR STANDARDS

In order to recommend a candidate to the Texas Education Agency, the UNT Educator Preparation Program curriculum includes alignment to standards identified by the State Board of Educator Certification (SBEC). These standards are assessed throughout your preparation and through the TExES Certification exams required for your teaching certificate. The Texas State Board for Educator Certification creates standards for beginning educators. These standards are focused upon the Texas Essential Knowledge and Skills, the required statewide school curriculum. Additionally, the Commissioner of TEA (Texas Education Agency) has adopted rules pertaining to Texas teaching standards:

TEXAS TEACHING STANDARDS

Standards required for all Texas beginning teachers fall into the following 6 broad categories:

(1) Standard 1-Instructional Planning and Delivery.

a. Standard 1Ai, ii, iv

b. Standard 1Bi, ii (Lesson design)

(2) Standard 2--Knowledge of Students and Student Learning

(3) Standard 3--Content Knowledge and Expertise

(4) Standard 4--Learning Environment

(5) Standard 5--Data-Driven Practice

(6) Standard 6--Professional Practices and Responsibilities Full description of the standards and competencies can be accessed using this link: Texas Teaching Standards Adopted in Chapter 149

EDUCATOR STANDARDS FOR EC-6 CORE SUBJECTS:

A full description of the standards and competencies can be accessed using this link: https://tea.texas.gov/texas-educators/preparation-and-continuing-education/approved-educator-standards

SCIENCE GENERALIST EC–6 STANDARDS

· Standard I. The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

· Standard II. The science teacher understands the correct use of tools, materials, equipment, and technologies.

· Standard III. The science teacher understands the process of scientific inquiry and its role in science instruction.

· Standard IV. The science teacher has theoretical and practical knowledge about teaching science and about how students learn science.

· Standard V. The science teacher knows the varied and appropriate assessments and assessment practices to monitor science learning.

· Standard VI. The science teacher understands the history and nature of science.

· Standard VII. The science teacher understands how science affects the daily lives of students and how science interacts with and influences personal and societal decisions.

· Standard VIII. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in physical science.

· Standard IX. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in life science.

· Standard X. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in Earth and space science.

· Standard XI. The science teacher knows unifying concepts and processes that are common to all sciences.

TEXAS ESSENTIAL KNOWLEDGE AND SKILLS

The following TEKS are addressed in this course. The Texas Essential Knowledge and Skills can be accessed on the Texas Education Agency Web site using the A-Z index at the following URL: https://tea.texas.gov/academics/curriculum-standards https://tea.texas.gov/academics/subject-areas/science

ENGLISH LANGUAGE PROFICIENCY STANDARDS (ELPS)

This course incorporates the ELPS in lesson planning and instructional delivery to improve language acquisition and content area knowledge of students who are English learners. The ELPs will be implemented by teacher candidates during instruction of the subject area for students who are English learners. The ELPs can be accessed via the Texas Education Agency using the following link: http://ritter.tea.state.tx.us/rules/tac/chapter074/ch074a.html#74.4.

TEXAS COLLEGE AND CAREER READINESS STANDARDS

The Texas College and Career Readiness Standards can be accessed at the Texas Higher Education Coordinating Board Web site using the following link:
http://www.thecb.state.tx.us/index.cfm?objectid=EADF962E-0E3E-DA80-BAAD2496062F3CD8

TExES CORE Subjects EC-6 (391): SCIENCE

This semester, you will receive access to 240 Tutoring, an online study platform designed to help you prepare for and pass your certification exams. You will receive an email to your UNT email address with a link to enroll and claim your access. Once you have activated your account, enroll in the TExES CORE Subjects EC-6 (391): Science study course.

How to Use the Course

1. Start with the Overview Video and Test-Taking Strategies.
2. Take the "Plan to Pass" practice test to identify your areas of strength and areas needing improvement.
3. The course will automatically highlight priority concepts based on your results.
4. Work through each content module, focusing especially on your priority areas.
5. Use the quizzes in each section to check your understanding. If you do not pass a quiz, review the material again before moving on.
6. Use the flashcards to build and reinforce vocabulary and key terms. Study Time & Practice Exam Requirement You must complete a minimum of six clock hours of study within the instructional content of the course.

After completing your study time, take a full-length practice exam. Download a PDF copy of your score report and submit it to your instructor. If you score 80 or higher, also send the score report to the TExES Success Office at COE-TSO@unt.edu so it can be counted toward your official practice exam requirement.

WELCOME TO THE CLASS!

DR. CARDEN