

EDUC 3350-110/120 SCIENCE INSTRUCTION FOR CLASSROOM TEACHERS

Spring 2018

Texas A&M University - Central Texas

PROFESSOR CONTACT INFORMATION

Instructor: Carl Juenke, PhD

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Office Hours: M (8:30 – 10:30 a.m.); T (8:30 – 11:30 a.m.); Th (8:30 – 11:30 a.m.) and by appointment.

Mode of instruction and course access:

This course meets face-to-face and utilizes TAMUCT Canvas Learning Management System: [<https://tamuct.instructure.com>]. It is highly recommended that you check your Canvas daily to ensure you do not miss any requirements or announcements. It is your responsibility to stay up with the requirements of the course.

Student-Professor interaction:

The best learning environment is a result of the efforts of both students and the professor. We can all learn a lot from one another, but we must each recognize our responsibilities to the group and our work this semester. You can reach me at any time during my office hours, by email, or by phone. If you would like to request a conference, please email me and I will get back to you with available times.

911 Cellular:

Emergency Warning System for Texas A&M University – Central Texas

911Cellular is an emergency notification service that gives Texas A&M University-Central Texas the ability to communicate health and safety emergency information quickly via email, text message, and social media. All students are automatically enrolled in 911 Cellular through their myCT email account.

Connect at [911Cellular](https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management) [<https://portal.publicsafetycloud.net/Texas-AM-Central/alert-management>] to change where you receive your alerts or to opt out. By staying enrolled in 911Cellular, university officials can quickly pass on safety-related information, regardless of your location.

COURSE INFORMATION

Course Overview and Description:

This methods course is concerned with providing experience for pre-service educators to plan, organize, deliver, and evaluate developmentally appropriate educational strategies and instructional techniques in teaching science to diverse learners. The students design responsive instruction appropriate for all learners which reflects an understanding of relevant science content, promotes active engagement, and is based on continuous and appropriate assessment.

Course Objective:

This course is designed to prepare teacher educators to design and implement standards-based EC-6 science instruction that includes effective instructional strategies for a diverse population of learners. The teacher educator will be prepared to demonstrate the following student learning outcomes (SLO's).

Required Reading and Textbooks:

Tweed, A. (2009). Designing effective science instruction: What works in science classrooms.

Arlington, VA: National Science Teachers Association Press.

Chitman-Booker, L., & Kopp, K. (2013). The 5Es of inquiry-based science. Huntington Beach, CA:

Shell Education.

Science TEKS: <http://ritter.tea.state.tx.us/rules/tac/chapter112/ch112a.html>

COMPETENCY STANDARDS

Texas Educator Standards and Student Learning Outcomes (SLO's):

Science Generalist EC-6:

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.

COURSE REQUIREMENTS

Science in the classroom reflection – 10% Students will write a 2 to 3 page paper reflecting on personal experiences with science instruction. This paper may include personal experiences as a student in a science classroom, personal experiences observing science instruction or personal experiences teaching science lessons. The reflection should include the importance of science instruction and its impact on students, both positively and negatively and must include 2 citations. APA format is required.

5 E Lesson Plans – 20%

Students will develop four (4) lesson plans utilizing components of the 5 E Lesson Plan model. The lesson plan must include the TEKS to be addressed, instructional strategies to be implemented and the assessment opportunities to be provided for students to demonstrate their knowledge and understanding of the TEKS.

Science Micro-teach – 20%

Students will prepare and teach one 20 minutes science lesson to the class on an assigned topic on an assigned date.

Science Lesson Reflections- 10%

Students will write a 1-2 page reflection over all lessons presented to the class. Reflections will include delivery, planning, strengths, areas of improvement, and collaboration if applicable. APA format required.

Science Lab Notebook – 10%

Students will be required to keep a science lab notebook during all science inquiries and collection of information.

Quizzes – 10%

Quizzes will be given over the assigned reading. These quizzes will be accessed through Canvas. Quiz dates will be provided one week prior to date quiz is due.

Final Exam -10%

The exam will consist of content, process, and pedagogy related questions. It is designed to assess the SLO's of the course.

Professionalism & Participation- 10%

Students must attend class and actively participate in class related activities and labs.

*Grading rubrics will be provided and discussed in class.

Grading Criteria Due Dates:

Assignment	Percent
Science in the classroom reflection	10%
5 E Lesson Plans	20%
Science Micro-teach	20%
Science Lesson Reflections	10%
Science Lab Notebook	10%
Quizzes	10%
Final Exam	10%
Professionalism & Participation	10%
Total	100%

Posting of Grades:

All grades will be posted in Canvas within a week of the due date. However, large projects or assignments may require more time to evaluate. It is encouraged that students monitor their status throughout the semester. Final grades will be posted to Canvas by May 15, 2018.

COURSE OUTLINE AND CALENDAR

Complete Course Calendar:

Date	Assignment/Activity	Assessment
Week 1	Introductions; Syllabus and Course Overview	Read Syllabus Bring Spiral Notebook
Week 2	Unpacking the Science TEKS	Small Group/Large Group Activity
Week 3	What Science Content Do I Know? Process vs. Content	Take Grade 5 Science STAAR test in class Ch. 1 Tweed
Week 4	Exploring the 5E Model of Science Instruction	Ch. 1 Chitman-Booker Small Group/Large Group Activity (5E Components)
Week 5	Identifying the Content to Teach	Concept Mapping/Strand Mapping Ch. 2 Tweed
Week 6	Building Teacher Science Content Knowledge: Lab Safety/Tools	In Class Lab Activity
Week 7	Inquiry-Based Lesson: Lab Safety Tools Using 5E components	Ch. 3 Tweed
Week 8	Building Teacher Science Content Knowledge: Physical Science	Ch. 3 Tweed 5E Lesson Plan on Lab Safety/Tools Due
Week 9	Inquiry-Based Lesson: Physical Science Using 5E components	
Week 10	Building Teacher Science Content Knowledge: Life Science	5E Lesson Plan on Physical Science Due
Week 11	Inquiry-Based Lesson: Life Science Using 5E components	

Date	Assignment/Activity	Assessment
Week 12	Building Teacher Science Content Knowledge: Earth & Space Science	5E Lesson Plan on Life Science Due
Week 13	Inquiry-Based Lesson: Earth & Space Science Using 5E components	
Week 14	Student in Class Lesson Presentations Review Final Exam	5E Lesson Plan on Earth & Space Science Due
Week 15	Final Exam	In Class

PROFESSOR POLICIES

Late Work: Unless otherwise specified, all assignments for this course are due at the beginning of the class period. **No late work** will be accepted except under extenuating circumstances which are communicated with the professor in a timely manner. If extension is granted, the late work will be subjected to deduction of points up to 10% each day past the due date.

Attendance: Professional behavior and commitment to teaching are the expectations. Attendance and punctuality are required. **Three class absences** for any reason will result in lowering the final grade by a letter grade. **Four or more absences** will result in failure of the class. All tardies will result in the loss of participation points. **Students missing class will be responsible for notes, handouts, assignments and any changes in schedules.** I will not provide "make-up" work. You may access this work on your own through Canvas or through collaboration with peers. Your commitment to becoming the best teacher possible includes regular, timely attendance and participation.

Class Participation: Being prepared to participate includes completing assigned reading and bringing necessary textbooks, assignments and materials to class. You are expected to read before the class session, actively participate in classroom assignments and discussions, and fully participate in online work. Any in-class reflections, presentations, and activities cannot be made-up. The use of technology, to include cell phones and any other electronic device, can enhance learning and the educational experiences; however, it can also become a distraction to the learning tasks at hand. Off-task technology usage may result in deduction in professionalism points.

Cell phones: Cell phones must be silenced during class. The use of cell phones, smart phones, or other mobile communication devices is disruptive and is therefore prohibited during class. Except in:

1. emergency situations - please make prior arrangements with the professor
2. acceptable use - the professor will direct you to utilize your cell phone, smart phone, or other mobile device for educational purposes

Copyright Notice.

Students should assume that all course material is copyrighted by the respective author(s). Reproduction of course material is prohibited without consent by the author and/or course professor. Violation of copyright is against the law and Texas A&M University-Central Texas' Code of Academic Honesty. All alleged violations will be reported to the Office of Student Conduct.

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TECHNOLOGY REQUIREMENTS AND SUPPORT

Technology Requirements.

This course will use the TAMUCT Instructure Canvas learning management system.

Logon to TAMUCT Canvas [<https://tamuct.instructure.com>]

Username: Your MyCT username

(xx123 or everything before the "@" in your MyCT e-mail address)

Password: Your MyCT password

Canvas Support

Use the Canvas Help link, located at the bottom of the left-hand menu, for issues with Canvas. You can select "Chat with Canvas Support," submit a support request through "Report a Problem," or call the Canvas support line: 1-844-757-0953.

For issues related to course content and requirements, contact your professor.

Other Technology Support.

For log-in problems, students should contact Help Desk Central.

24 hours a day, 7 days a week:

Email: helpdesk@tamu.edu

Phone: (254) 519-5466

[Web Chat](http://hdc.tamu.edu): <http://hdc.tamu.edu>.

UNIVERSITY RESOURCES, PROCEDURES, AND GUIDELINES

Drop Policy.

If you discover that you need to drop this class, you must complete a [Drop Request Form](https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf) [https://www.tamuct.edu/registrar/docs/Drop_Request_Form.pdf].

Professors cannot drop students; this is always the responsibility of the student. The Registrar's Office will provide a deadline on the University Calendar for which the form must be completed, signed and returned. Once you return the signed form to the Registrar's Office, you must go into Warrior Web and confirm that you are no longer enrolled. If you still show as enrolled, FOLLOW-UP with the Registrar's Office immediately. You are to attend class until the procedure is complete to avoid penalty for absence. Should you miss the drop deadline or fail to follow the procedure, you will receive an F in the course, which may affect your financial aid and/or VA educational benefits.

Academic Integrity.

Texas A&M University -Central Texas values the integrity of the academic enterprise and strives for the highest standards of academic conduct. A&M-Central Texas expects its students, faculty, and staff to support the adherence to high standards of personal and scholarly conduct to preserve the honor and integrity of the creative community. Academic integrity is defined as a commitment to honesty, trust, fairness, respect, and responsibility. Any deviation by students from this expectation may result in a failing grade for the assignment and potentially a failing grade for the course. Academic misconduct is any act that improperly affects a true and honest evaluation of a student's academic performance and includes, but is not limited to, cheating on an examination or other academic work, plagiarism and improper citation of sources, using another student's work, collusion, and the abuse of resource materials. All academic misconduct concerns will be reported to the university's Office of Student Conduct. Ignorance of the university's standards and expectations is never an excuse to act with a lack of integrity. When in doubt on collaboration, citation, or any issue, please contact your professor before taking a course of action.

Academic Accommodations.

At Texas A&M University-Central Texas, we value an inclusive learning environment where every student has an equal chance to succeed and has the right to a barrier free education. The Department of Access and Inclusion is responsible for ensuring that students with a disability receive equal access to the University's programs, services and activities. If you believe you have a disability requiring reasonable accommodations please contact the Department of Access and Inclusion at (254) 501-5831. Any information you provide is private and confidential and will be treated as such.

For more information please visit our [Access & Inclusion](https://www.tamuct.edu/student-affairs/access-inclusion.html) webpage [<https://www.tamuct.edu/student-affairs/access-inclusion.html>].

Texas A&M University-Central Texas supports students who are pregnant and/or parenting. In accordance with requirements of Title IX and guidance from US Department of Education's Office of Civil Rights, the Dean of Student Affairs' Office can assist students who are pregnant and/or parenting in seeking

accommodations related to pregnancy and/or parenting. For more information, please visit <https://www.tamuct.departments/index.php>. Students may also contact the institution's Title IX Coordinator. If you would like to read more about these [requirements and guidelines](#) online, please visit the website [<http://www2.ed.gov/about/offices/list/ocr/docs/pregnancy.pdf>].

Title IX of the Education Amendments Act of 1972 prohibits discrimination on the basis of sex and gender – including pregnancy, parenting, and all related conditions. A&M-Central Texas is able to provide flexible and individualized reasonable accommodation to pregnant and parenting students. All pregnant and parenting students should contact the Division of Student Affairs at 254-501-5909 to seek out assistance. Students may also contact the University's Title IX Coordinator.

A Note about Sexual Violence at A&M-Central Texas

Sexual violence is a serious safety, social justice, and public health issue. The university offers support for anyone struggling with these issues. University faculty are mandated reporters, so if someone discloses that they were sexually assaulted (or a victim of Domestic/Dating Violence or Stalking) while a student at TAMUCT, faculty members are required to inform the Title IX Office. If you want to discuss any of these issues confidentially, you can do so through Student Counseling (254-501-5955) located on the second floor of Warrior Hall (207L).

Sexual violence can occur on our campus because predators often feel emboldened, and victims often feel silenced or shamed. It is incumbent on ALL of us to find ways to actively create environments that tell predators we don't agree with their behaviors and tell survivors we will support them. Your actions matter. Don't be a bystander; be an agent of change. For additional information on campus policy and resources visit the [Title IX webpage](#) [<https://www.tamuct.edu/departments/compliance/titleix.php>].

Tutoring.

Tutoring is available to all A&M-Central Texas students, both on-campus and online. On-campus subjects tutored include Accounting, Advanced Math, Biology, Finance, Statistics, Mathematics, and Study Skills. Tutors are available at the Tutoring Center in Warrior Hall, Suite 111.

If you have a question regarding tutor schedules, need to schedule a tutoring session, are interested in becoming a tutor, or any other question, contact Academic Support Programs at 254-519-5796, or by emailing Dr. DeEadra Albert-Green at deeadra.albertgreen@tamuct.edu.

Chat live with a tutor 24/7 for almost any subject on your computer! Tutor.com is an online tutoring platform that enables A&M-Central Texas students to log-in and receive FREE online tutoring and writing support. This tool provides tutoring in over forty subject areas. Access Tutor.com through Canvas.

The University Writing Center.

Located in 416 Warrior Hall, the University Writing Center (UWC) at Texas A&M University-Central Texas is a free workspace open to all TAMUCT students from 10am-5pm Monday-Thursday with satellite hours in the University Library on Monday-Thursday from 6:00-9:00pm. Students may arrange a one-on-one session with a trained and experienced writing tutor by visiting the UWC during normal operating hours (both half-hour and hour sessions are available) or by making an appointment via [WCOnline at](#) [<https://tamuct.mywconline.com/>]. In addition, you can email Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu to schedule an online tutoring session. Tutors are prepared to help writers of all levels and abilities at any stage of the writing process.

While tutors will not write, edit, or grade papers, they will assist students in developing more effective composing practices. By providing a practice audience for students' ideas and writing, our tutors highlight the ways in which they read and interpret students' texts, offering guidance and support throughout the various stages of the writing process. In addition, students may work independently in the UWC by checking out a laptop that runs the Microsoft Office suite and connects to WIFI, or by consulting our resources on writing, including all of the relevant style guides. Whether you need help brainstorming ideas, organizing an essay, proofreading, understanding proper citation practices, or just want a quiet place to work, the University Writing Center is here to help!

If you have any questions about the University Writing Center, please do not hesitate to contact Dr. Bruce Bowles Jr. at bruce.bowles@tamuct.edu.

University Library.

The University Library provides many services in support of research across campus and at a distance. We offer over 200 electronic databases containing approximately 250,000 eBooks and 82,000 journals, in addition to the 72,000 items in our print collection, which can be mailed to students who live more than 50 miles from campus. Research guides for each subject taught at A&M-Central Texas are available through our website to help students navigate these resources. On-campus, the library offers technology including cameras, laptops, microphones, webcams, and digital sound recorders.

Research assistance from a librarian is also available twenty-four hours a day through our online chat service, and at the reference desk when the library is open. Research sessions can be scheduled for more comprehensive assistance, and may take place on Skype or in-person at the library. Assistance may cover many topics, including how to find articles in peer-reviewed journals, how to cite resources, and how to piece together research for written assignments.

Our 27,000-square-foot facility on the A&M-Central Texas main campus includes student lounges, private study rooms, group work spaces, computer labs, family areas suitable for all ages, and many other features. Services such as interlibrary loan, TexShare, binding, and laminating are available. The library frequently offers workshops, tours, readings, and other events. For more information, please visit our [Library website](https://tamuct.libguides.com/) [https://tamuct.libguides.com/].