



On-Campus Course Syllabus

EDU 406, L1.SP

EC-6th Science Instructional Methods

Spring 2021

Class Information

Day and Time: Thursday 7:30 pm to 10:00 pm

Room Number: E 202

Contact Information

Instructor Name: Ms. Karen Y. Gosby, M.Ed.

Instructor Email: kgosby@criswell.edu

Instructor Phone: 214.796.0965

Instructor Office Hours: Thursdays: By Appointment

Course Description and Prerequisites

Emphasizes the instructional strategies specifically used in teaching science content according to EC-6th grade Texas Essential Knowledge and Skills (TEKS) in physical science, life science, earth and space science, and universal processes that are common to all sciences. The course also includes the supervision of labs and activities in a safe and professional way, appropriate assessment practices to monitor science learning, and guided individual and group inquiry. **Nine clock hours of field experience are required for this course.**

(Prerequisite: EDU 301)

Course Objectives

1. Survey the history of science education and how it has developed for elementary teaching.
2. Gain an understanding of the goals and objectives for science instruction in Texas elementary schools.
3. Use the skills and understanding of science concepts necessary to be an effective EC-6th grade science teacher.
4. Use appropriate teaching strategies to meet the developmental learning needs of EC-6th grade learners.
5. Become familiar with the names and contributions of scientist and their relevance to students.
6. Plan appropriate and differentiated instruction and assessment based on the developmental characteristics of learners.
7. Plan a unit of science instruction for a selected group of EC-6th grade learners.
8. Incorporate a rich reading and writing experiences in the study of the science through the incorporation of children's literature.
9. Become familiar with safety issues and practices in the EC-6th grade science classroom.
10. Develop a list of scriptures that support various scientific concepts.

Required Textbooks

Victor, E. & Kellough, R.D., *Science K-8: An Integrated Approach*, 11th edition, New Jersey: Pearson/Merrill Prentice Hall, 2004. ISBN: 978-0131992108

Course Requirements and Assignments

*****This course requires a minimum of NINE (9) clock hours of on-site teaching sessions during a Field Experience.*****

*****Late Work Class Policy: Work is due at the beginning of class on the date designated unless otherwise stated by the professor. Late work will not be accepted.*****

1. Sciencing Research Paper: You will choose a topic which concerns “sciencing” in the elementary or middle schools. This is to be a two (2) page research paper. This paper must be typed, double spaced, and 12cpi. You will be expected to share what you have learned.

DUE: 1/28/21

POINTS: 5 points

2. Scriptural Topic Index: You will be given **God’s Truth in Science**. You are to choose one verse for each topic and type that verse out and include the reference. You are to include the science topic and subtopics.

DUE: 2/4/21

POINTS: 5 points

3. Resource Pack: This assignment is to aid you in developing your own list of resources which are available to you as a science educator. You will collect **10 resources** in each of the following categories: museums, children’s literature, field trip opportunities, films and videos, Internet sites, and computer software. Your Resource Pack is to be typed with one category on each page. They are to be in a folder with a title page.

DUE 2/25/21

POINTS: 5 points

4-9. Concept Lesson Plans: You will write a lesson plan for 6 of the 13 science topics in your text. These are to be typed and in correct form. You will **teach** these lessons as part of your 9 hours of field experience. Each lesson is to be student-centered, hands-on, and interactive. Writing and children’s literature are to be key components of each lesson.

DUE: 3/11/21 to 4/22/21

POINTS: 10 points each=60 points total

10. Technology Plan: You will design and teach a science lesson that incorporates technology into the teaching. The students must be the ones who use the technology during the lesson. You will **teach** these lessons as part of your 9 hours of field experience.

DUE: 4/29/21

POINTS: 5 points

11. Field Experience Journal: You will keep a field experience journal, recording your observations and responses to your taught science lessons. Focus questions will guide your responses and will be provided by the instructor. You will turn in a total of six (6) entries. The journal will be shared with your peers and the instructor. It must be typed.

DUE: 5/6/21

POINTS: 10 points

12. Teaching Unit Plan: After investigating what constitutes a quality science program, you will design a Science unit of study. You will choose the appropriate grade level for your unit. It may range from K through 6th grade. The unit is to consist of five (5) lesson plans (one plan for each day of the week). All five (5) lesson plans are to follow the form that will be covered in class. You will fully explain your unit and demonstrate one of the lessons at the time of presentation. Your presentation is to be from 15-20 minutes in length. **This project is your Final Exam in the course and is to be presented in class.**

DUE: 5/13/21

POINTS: 10 points

Assignment	Due Date	Point Value
Sciencing Research Paper	1/28/21	5
Scriptural Topic Index	2/4/21	5
Resource Pack	2/25/21	5
Concept Lesson Plans	3/11/21 to 4/22/21	10/60
Technology Plan	4/29/21	5
Field Experience Journal	5/6/21	10
Teaching Unit Plan	5/13/21	10
	TOTAL	100
TESTS	Open Date/Due Date	POINT VALUE
Test #1 - Chapters 1, 2, 3, 4	Feb 4 / Feb 10	50
Test #2 - Chapters 5, 6, 7	Feb 25 / Mar 3	50
Test #3 - Chapter 8	Mar 4 / Mar 10	50
	TOTAL	150

Course/Classroom Policies and Information

Pedagogy and Professional Responsibilities EC–12 Standard I

The teacher designs instruction appropriate for all students that reflects an understanding of relevant content and is based on continuous and appropriate assessment.

Pedagogy and Professional Responsibilities EC–12 Standard II

The teacher creates a classroom environment of respect and rapport that fosters a positive climate for learning, equity and excellence.

Pedagogy and Professional Responsibilities EC–12 Standard III

The teacher promotes student learning by providing responsive instruction that makes use of effective communication techniques, instructional strategies that actively engage students in the learning process and timely, high-quality feedback.

Pedagogy and Professional Responsibilities EC–12 Standard IV

The teacher fulfills professional roles and responsibilities and adheres to legal and ethical requirements of the profession.

Technology Applications Standard I

All teachers use technology-related terms, concepts, data input strategies and ethical practices to make informed decisions about current technologies and their applications.

Technology Applications Standard II

All teachers identify task requirements, apply search strategies and use current technology to efficiently acquire, analyze and evaluate a variety of electronic information.

Technology Applications Standard III

All teachers use task-appropriate tools to synthesize knowledge, create and modify solutions and evaluate results in a way that supports the work of individuals and groups in problem-solving situations.

Technology Applications Standard IV

All teachers communicate information in different formats and for diverse audiences.

Technology Applications Standard V

All teachers know how to plan, organize, deliver and evaluate instruction for all students that incorporates the effective use of current technology for teaching and integrating the Technology Applications Texas Essential Knowledge and Skills (TEKS) into the curriculum.

Core Subjects EC-6 Standards:**Science 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.

Science Standard II

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

Science Standard III

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

Science Standard IV

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

Science Standard V

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

Science Standard VI

The science teacher understands the history and nature of science.

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.

Science 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.

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.

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.

Science Standard XI

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

Class Attendance

Students are responsible for enrolling in courses for which they anticipate being able to attend every class session on the day and time appearing on course schedules, and then making every effort to do so. When unavoidable situations result in absence or tardiness, students are responsible for acquiring any information missed. Professors are not obliged to allow students to make up missed work. Per their independent discretion, individual professors may determine how attendance affects students' ability to meet course learning objectives and whether attendance affects course grades.

Grading Scale

A	97-100	4.0 grade points per semester hour
A-	93-96	3.7 grade points per semester hour
B+	91-92	3.3 grade points per semester hour
B	88-90	3.0 grade points per semester hour
B-	86-87	2.7 grade points per semester hour
C+	83-85	2.3 grade points per semester hour
C	80-82	2.0 grade points per semester hour
C-	78-79	1.7 grade points per semester hour
D+	75-77	1.3 grade points per semester hour
D	72-74	1.0 grade point per semester hour

D-	70-71	0.7 grade points per semester hour
F	0-69	0.0 grade points per semester hour

Incomplete Grades

Students requesting a grade of Incomplete (I) must understand that incomplete grades may be given only upon approval of the faculty member involved. An “I” may be assigned only when a student is currently passing a course and in situations involving extended illness, serious injury, death in the family, or employment or government reassignment, not student neglect.

Students are responsible for contacting their professors prior to the end of the semester, plus filing the appropriate completed and approved academic request form with the Registrar’s Office. The “I” must be removed (by completing the remaining course requirements) no later than 60 calendar days after the grade was assigned, or the “I” will become an “F.”

Academic Honesty

Absolute truth is an essential belief and basis of behavior for those who believe in a God who cannot lie and forbids falsehood. Academic honesty is the application of the principle of truth in the classroom setting. Academic honesty includes the basic premise that all work submitted by students must be their own and any ideas derived or copied from elsewhere must be carefully documented.

Academic dishonesty includes, but is not limited to:

- cheating of any kind,
- submitting, without proper approval, work originally prepared by the student for another course,
- plagiarism, which is the submitting of work prepared by someone else as if it were his own, and
- failing to credit sources properly in written work.

Institutional Email Policy

All official college email communications to students enrolled in this course will be sent exclusively to students’ institutional email accounts. Students are expected to check their student email accounts regularly and to respond in an appropriate and timely manner to all communications from faculty and administrative departments.

Students are permitted to setup automatic forwarding of emails from their student email accounts to one or more personal email accounts. The student is responsible to setup and maintain email forwarding without assistance from college staff. If a student chooses to use this forwarding option, he/she will continue to be responsible for responding appropriately to all communications from faculty and administrative departments of the college. Criswell College bears no responsibility for the use of emails that have been forwarded from student email accounts to other email accounts.

Disabilities

Criswell College recognizes and supports the standards set forth in Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act (ADA) of 1990, and similar state laws, which are designed to eliminate

discrimination against qualified individuals with disabilities. Criswell College is committed to making reasonable accommodations for qualifying students, faculty, and employees with disabilities as required by applicable laws. For more information, please contact the Student Services Office.

Intellectual Property Rights

Unless otherwise specifically instructed in writing by the professor, students must neither materially nor digitally reproduce materials from any course offered by Criswell College for or with the significant possibility of distribution.

Resources and Support

Canvas and CAMS: Criswell College uses Canvas as its web-based learning tool and CAMS for student data. Students needing assistance with Canvas should contact the Canvas Help Support line at (844) 358-6140. Tech support is available at this number twenty-four hours a day. Students needing help with CAMS should contact the Campus Software Manager at bstifle@criswell.edu.

Student Services: The Student Services Office exists to foster and encourage success in all areas of life—physical, intellectual, spiritual, social, and emotional. Students are encouraged to reach out for assistance by contacting the office at 214.818.1332 or studentservices@criswell.edu. Pastoral and certified counseling services are also available to Criswell students. Appointments are scheduled through Dr. Jeff Campbell, Dean of Students, at jcampbell@criswell.edu.

Wallace Library: Students can access academic resources and obtain research assistance by visiting the Wallace Library, which is located on campus. For more information, go to the library website, or email the Wallace Library at library@criswell.edu.

Writing Center: Students are encouraged to consult with writing tutors to improve and enhance their skills and confidence by practicing techniques of clear and effective writing. To consult with a tutor, students can visit the Writing Center located on the first floor near the Computer Lab, or they can schedule an appointment by emailing writingcenter@criswell.edu or calling 214.818.1373.

Course Outline/Calendar

Date	Topic	Reading Assignment	Assignments Due
1/21/21	Syllabus Explanation	Chapter 1	
	Teaching Science in Grades K-8	Chapter 2	
1/28/21	Goals and Objectives for K-8 Science	Chapter 3	
	Understanding the Nature of Science	Chapter 4	Sciencing Research Paper

2/4/21	Questioning	Chapter 5	Scriptural Topical Index
	<i>Test #1</i>	<i>Chapters 1-4</i>	
2/11/21	Strategies for Helping Children Learn	Chapter 6	
2/18/21	Selecting & Using Media	Chapter 7	
2/25/21	Planning Instruction	Chapter 8	Resource Notebook Due
3/4/21	Assessing & Reporting Achievement	Chapter 9	
	<i>Test #2</i>	<i>Chapters 5-7</i>	
3/11/21	The Universe	Chapter 10	Lesson Plan 1 & Demo
	The Earth	Chapter 11	
	<i>Test #3</i>	<i>Chapter 8</i>	
3/18/21	*** SPRING BREAK ***		
3/25/21	Water, Weather, and Climate	Chapter 12	Lesson Plan 2 & Demo
	Plants	Chapter 13	
4/1/21	Neither Plant nor Animal	Chapter 14	Lesson Plan 3 & Demo
	Animals	Chapter 15	
4/8/21	The Human Body	Chapter 16	Lesson Plan 4 & Demo
4/15/21	Changes in Matter and Energy	Chapter 17	Lesson Plan 5 & Demo

	Friction and Machines	Chapter 18	
4/22/21	Heat, Fire, and Fuel	Chapter 19	Lesson Plan 6 & Demo
	Sound	Chapter 20	
4/29/21	Light	Chapter 21	Technology Plan
	Magnetism and Electricity		
5/6/21	Course Material Wrap-Up		Field Experience Journal Due
5/13/21	Unit Day (Final Exam)		Unit Due

Selected Bibliography

Constant, Bass, & Carin., *Teaching Science Through Inquiry and Investigation*, 12/E, Pearson Publishing, New York, NY, 2014. ISBN-10: 0133400794

DeRosa & Abruscato., *Teaching Children Science: A Discovery Approach*, 8/E, Pearson Publishing, New York, NY, 2014. ISBN-10: 0133783707

Lemov, D. *Teach Like a Champion: 49 Techniques That Put Students on the Path to College*. Jossey-Bass. 2010. ISBN 9780470550472

Seefeldt, Galper, & Jones., *Active Experiences for Active Children: Science*, 3/E, Pearson Publishing, New York, NY, 2011. ISBN-10: 0132659557



On-Campus Course Syllabus

ADDENDUM FOR SP-21

EDU 406, L1.SP

EC-6 Science Instructional Methods

In the event that Criswell College has to close the campus to on-campus classes during the SP-21 semester, this addendum specifies how your instructor intends to adjust the course in order to allow students to meet the course objectives.

The course requirements, assignments, calendar, and attendance requirements from the syllabus for this course are replicated below. Notes and changes to the information in the syllabus are highlighted. Information that is no longer relevant is indicated with a strike through the font and *replacement or new information is placed in italics.*

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DUE: 5/6/21

POINTS: 10 points

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Remote Class Sessions: Identity and Participation Verification

Students are responsible for accessing course details for remote learning in the event circumstances prevent in person learning. Computer access is preferred. However, access by

telephone is permissible when unavoidable situations arise and with the professor's approval. Students' videos are to remain on for the duration of class period. Screens may be blacked-out temporarily as long as students respond when called upon.