

ASU Teacher Education
ED 4314 Science: Instructional Strategies for the Elementary
and Middle School Teacher
Course Syllabus – Fall 2016

Professor/Instructor: Dr. Christine Purkiss

Email: christine.purkiss@angelo.edu

Office Hours: Mon 12:30 – 1:30PM, 3:30-4:30PM; T/Th 10AM – Noon; Wed 12:30-1:30PM.

Online Office Hours: Mondays 9-Noon.

Telephone: 942-486-6954

Office: CARR 117

Course Title: ED 4314 Science: Instructional Strategies for the Elementary and Middle School Teacher

Day, Time & Location of Course: Tuesday/Thursday 12:30 – 1:45PM or 2 – 3:15PM in Carr 112

Course Description:

This field-based course emphasizes the integration of research and theories regarding the processes of learning science. The major science processes such as observing, experimenting, measuring, classifying, analyzing, interpreting, sequencing, recognizing properties and patterns, and inferring along with inquiry based science will be used with students in a public school setting. The TEKS addressing basic scientific information, methods, and materials will be addressed.

Materials Required:

- TaskStream account
- Single subject notebook or Composition Book
- Articles and other readings as assigned
- Laptop/Ipad or similar system for use in class (Optional)

Methods of Instruction:

The instructional methods used in this class include, but are not limited to: discussion, collaborative groups, individualized projects, demonstrations, various forms of media, group presentations, interactive lecture, readings and field assignments. BLACKBOARD and/or TaskStream are utilized for communication, class assignments and information.

Course Requirements:

Candidates are expected to complete all classroom and out-of-classroom assignments in order to successfully complete the course. **You are expected to check Blackboard for this class each day for notices and information. Print out and bring to class documents, when required, from Blackboard.**

Field Experience:

1. Science Teaching: Candidates will be observing and teaching in appropriate elementary or middle school classrooms for at least 12 hours during this course. Observations of classrooms will begin in the middle of the semester, followed by 5-6 weeks of public school classroom teaching as assigned.

2. Community Engaged Scholars: Teachers are naturally involved with their local communities and are often expected to be the “expert” on a variety of topics. Teaching embodies the ideals behind social responsibility. We teach because we believe it is important to have an educated citizenry, it is a social responsibility. As community engaged scholars, candidates in this course will experience the opportunity to begin their role of being socially responsible through their practice teaching. As community engaged scholars, candidates in this course will experience this opportunity through field experience in K-8 classrooms.

Learning Outcomes:

The following chart lists the learning outcomes for this course. Learning outcomes for this class are based on TEA, InTASC, ISTE, and the ASU Learning Goals. More information for each of these can be found at the Internet links listed below.

TEA Science Generalist EC-6 Standards

Standard 1: 1.2K – 1.8K 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 2: 2.2K-2.6K The science teacher understands the correct use of tools, materials, equipment, and technologies.

Standard 3: 3.1K-2K. The science teacher understands the process of scientific inquiry and its role in science instruction.

Standard 4: 4.3K-4.13K The science teacher has theoretical and practical knowledge about teaching science and about how students learn science.

Standard 5: 5.3K-5.11K The science teacher knows the varied and appropriate assessments and assessment practices to monitor science learning.

Standard 6: The science teacher understands the history and nature of science.

InTASC Standards included in this class:

Standard 1 – Learner Development: a-k

Standard 2 - Learning Differences: a,c,e,h,l,n

Standard 3 – Learning Environments: a,c,d,f,I,j,k,l,m,n,o,p,q,r

Standard 4 - Content Knowledge: a – h,k,l,n,q,r

Standard 5 – Application of Content: b,c,e,h,k,l,m,n,o,s

Standard 6 – Assessment: a,b,e,j,s

Standard 7 – Planning for Instruction: a,b,c,g,h,k,l,o,q

Standard 8 – Instructional Strategies: a,d,e,f,h,I,j,k,l,n,p,q,s

Standard 9 – Professional Learning and Ethical Practice: a,f,l,o

Standard 10 – Leadership ad Collaboration: b,o,r,t

ISTE Teacher Technology Standards:

1. Facilitate and inspire student learning and creativity
2. Design and develop digital age learning experiences and assessments

3. Model digital age work and learning

ASU Learning Goals

1. Students [candidates] will acquire knowledge in the humanities, the natural sciences, the social studies, and the arts, which collectively embody the human cultural heritage. Students [candidates] will develop their abilities to practice higher-level critical thinking.
2. Students [candidates] will become proficient in reading, writing, speaking, and listening. They will also develop quantitative literacy and technological literacy and technological fluency.
3. Students [candidates] will gain knowledge and skills appropriate both for their field of study and to enter into the professional sector and/or graduate school.
4. Students [candidates] will understand their responsibility as citizens in a complex, changing society.

Assignments:

See Blackboard for specific assignment information. A summary of class assignments is given below. Candidates will be expected to research and collect materials for their teaching and lesson planning. Other non-graded assignments may be given. All written assignments, presentations, media presentations, etc. must follow the writing style found in the most current edition of the American Psychological Association Publication Manual (APA Manual) which is available at the ASU library, at the bookstore, or on-line at www.apa.org

ASU OP10.04 Academic Regulations Concerning Student Performance

<http://www.angelo.edu/opmanual/#s1>

Course Evaluation and Grading:

1. Safety Module – 30 points:

Candidates will be expected to develop a plan and materials for general safety precautions that includes working with chemicals, flames and heat, dead and living animals/plants, equipment and container use and storage, and instructions for rules and management in the lab setting.

2. Science Lesson Plans – 3 x 20 points each = 60 points:

Candidates will be expected to construct written lesson plans that use the various strategies taught in class. All lesson plans will align with the TEKS. Lessons will be constructed that can be taught during the science teaching field experience. Taskstream will be used to build lessons plans.

3. Science Journal Reflection – 2 x 10 points = 20 points:

Candidates will read and reflect on articles from NSTA journals using either Science and Children or Science Scope.

4. Science Teaching – 90 points:

Candidates will be observed teaching 1 lesson in the classroom (40 pts)

Lesson plans during science teaching field experience are required (2 x 15 pts = 30 pts)

Pre and Post Reflections on science teaching field experiences (2 x 10 pts = 20 pts)

Grading: All teacher certification candidates must obtain a C or better in every education course.

180 - 200 points = A
160 - 179 points = B
140 - 159 points = C
139 points or below = F

Attendance Policy:

As a developing teacher, your ability to demonstrate a positive and professional disposition toward your peers, assignments, practicum teacher, and the instructor is essential. Candidates are expected to be in class on time and to attend each scheduled class. Candidates should notify the professor by email or voice message if they are going to miss class.

There are two excused absences for the semester (this includes being absent for class or science teaching experiences) that allow for occasions such as illness, bad weather, funeral attendance, and other such personal events. Try to save your two excused absences for emergencies. Excused absences for medical or family reasons permit candidates to make up work missed but may still result in points deducted. After two absences, 5 points will be deducted *from the final grade for each additional absence*.

During the science teaching field experience only one absence is allowed and any further absences must be made up and documented by your classroom teacher. Failure to make-up absences during science teaching field experiences will drop your final letter grade by one letter. The instructor, classroom teacher, and the members of your group **MUST** be notified immediately of any upcoming absence or late arrival. Being unprepared for class and turning in late assignments will negatively affect the grade you receive in this class. **Before each class session, check Blackboard and print out and bring any documents needed for class.**

Candidates are to adhere to all ASU policies concerning attendance. Policies are listed below
OP 10.04 and Unit policy <http://www.angelo.edu/opmanual/#s10>
OP10.19 Student Absence for Observance of Religious Holy Day <http://www.angelo.edu/opmanual/#s10>

Persons Seeking Accommodations:

Persons with disabilities, which may warrant academic accommodations, must contact the Student Life Office, Room 112 University Center, in order to request such accommodations prior to any accommodations being implemented. Candidates are encouraged to make this request early in the semester so that appropriate arrangements can be made. **ASU OP 10.15 Providing Accommodations for Students with Disabilities**

<http://www.angelo.edu/opmanual/#s10>

Academic Honesty:

Angelo State University expects its students to maintain complete honesty and integrity in their academic pursuits. Teacher education candidates are responsible for understanding the Academic Honor Code, which is contained in both print and web versions of the *Student Handbook*. (www.angelo.edu/cstudent/documents/pdf/Student_Handbook.pdf)

Cell Phone Policy:

Cell phones usage will not be allowed during this class. All cell phones need to be turned-off during class time and placed away in a back-pack, purse, or bag. If you are expecting a call about a sick child or relative, please let your professor know so that an accommodation can be made. A warning will be given for a first offense, subsequent offenses will result in a reduction of participation points.

Blackboard:

Candidates must access BLACKBOARD for electronic posting of syllabus, assignments, announcements, grading information, etc. Students are to download documents and bring the copies to class. Contact the ASU Help Desk at 325-942-2911 to learn about BLACKBOARD and accessing it. Do this before the second day of class. All written assignments must be typed.

Other Items

Web Sites:

<http://blackboard.angelo.edu/> Blackboard access at Angelo State University

www.tea.state.tx.us Texas Education Agency

<https://secure.sbec.state.tx.us/sbeconline/virtcert.asp> State Board for Educator Certification (Texas) American

www.apa.org Psychological Association

<http://cms.texas-ets.org/texas/prepmaterials/texas-preparation-manuals/> TExES preparation manuals and lists of competencies for state testing

Class Schedule (Tentative)

Week 1	Introduction to course, review syllabus. What is the nature of science?
Week 2	Safety Science
Week 3	Science Inquiry – Process skills
Week 4	Models for teaching and planning science
Week 5	Assessment
Week 6	5E Model for teaching and planning science
Week 7	5E Model for teaching and planning science
Week 8	5E Model for teaching and planning science
Week 9	Planning for teaching
Week 10 -15	Field Experiences
Week 16	Finals

