I. Course Description

This course is designed to help teachers become more competent in the development and use of hands-on, inquiry-based science activities. The course is based on the process skills, materials, and goals of the national science curriculum program.

Course Justification:

MLGE 4220 “Science in the Middle Grades” (2 credits; fully online) spans 15 weeks. This course requires engaging in weekly online modules and completing associated assignments such as discussions, quizzes, and writing essays and responses. Students should spend approximately two hours per week engaged in the modules. Additionally, students will create a model science journal and will add activities to the journal weekly. Students are also required to write an integrated science 5E Lesson Plan as part of this course. The National Science Teaching Association (NSTA) Learning Center is a required resource for this course. Through the NSTA Learning Center, students will complete diagnostic science content tests and then use the report to improve content knowledge in specific areas of science through an NSTA Interactive E-book. The completion of the Interactive E-book can take up to 10 hours. Students are expected to spend two to three hours per week on this course beyond the two hours required for weekly module activities.

II. Intended Learning Outcomes/Goals/Objectives:

This course is aligned with the mission of the College of Education (COE), which is to prepare competent, successful, caring, and enthusiastic professionals dedicated to responsible service, leadership, and continued professional and intellectual development. The COE theme is “preparing professional educators who positively impact learning for all students.” In the COE at Stephen F. Austin State University, we are committed to the following core values:

- Academic excellence through critical, reflective, and creative thinking
- Life-long learning
- Collaboration and shared decision-making
- Openness to new ideas, to culturally diverse people, and to innovation and change
- Integrity, responsibility, diligence, and ethical behavior, and
- Service that enriches the community.

The Program Learning Objectives and Student Learning Objectives in this course align with the mission of preparing competent professionals and values of academic excellence, life-long learning, collaboration, openness, integrity, and service as you learn to instruct middle level learners. The Program Learning Objectives are aligned to the Association for Middle Level Education (AMLE) and the TExES PPR and
MLG 4-8 Content Standards. All content and assignments are aligned to these standards; this was assured as faculty aligned the curriculum during 2012-2014.

MLGE 4220 Program Learning Outcomes and Student Learning Outcomes

PLOs and SLOs and corresponding Assessments

Middle Level Grades

PLO 2 The teacher candidates will understand and use the central concepts, tools of inquiry, standards, research and structures of content to plan and implement curriculum that develops all young adolescents’ competence in subject matter (AME 2; InTASC 4,5,7,8).

Element A: Subject Matter Content

- SLO 2.1 Candidates will apply knowledge of science content (Physical Science, Life Science, Earth and Space Science and Engineering/technology) through effectively planning implementing and assessing classroom, field and laboratory activities for diverse learners.
  - SLO 2.1.1 Assessment - Benchmark Assessment II Texas Content Certification Exam. [4/8 Texas Science ST IV, V, VIII, IX, X; PPR1.8k; 1.7s(TS1Ai), 8s(TS3Bii), 19s(TS1Bii); 3.6k, 7k, 8k; 3.10]
  - SLO 2.1.2 Assessment - Benchmark Assessment II Candidate Work Sample-Submitted in Live Text. [4/8 Texas Science ST IV, V, VIII, IX, X; PPR1.8k; 1.7s(TS1Ai), 8s(TS3Bii), 19s(TS1Bii); 3.6k, 7k, 8k; 3.10]
  - SLO 2.1.3 Assessment- Completion of NSTA Interactive E-book +. (4/8 Texas Science VIII, IX, X)

- SLO 2.2 Candidates understand the process of scientific inquiry and its role in science instruction, and incorporate inquiry in the planning and implementing of classroom, field and laboratory activities.
  - SLO 2.2.1 Assessment - Transformation of a “Cookie Cutter” lab into a quality inquiry activity [S 4/8 3.1k, 2k; 3.1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s; 4.4k; PPR 1.16k]
  - SLO 2.2.2 Assessment- Write a reflective summary about the role of inquiry in the middle school science classroom [S 4/8 4.4k; 4.3s, 4s, 5s, 10s]
  - SLO 2.2.3 Assessment - Benchmark Assessment II Candidate Work Sample-Submitted in Live Text [S 4/8 3.2s, 3s, 4s, 5s, 6s, 7s, 8s]

- SLO 2.3: The teacher candidates will manage activities to ensure the safety of all students and so that the ethical care and treatment of organisms is observed, and will understand the correct use of tools, materials, and equipment utilized in the 4-8 science classroom, field and laboratory activities.
  - SLO 2.3.1 Assessment - Create a presentation utilizing power point, Glogster, Prezi, or another method describing at least ten safety rules for middle level students using the Texas Safety Standards handbook located on the Texas Education Agency website. [S 4/8 1.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k; 1.1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s; 2.1k; 2.1s, 2s, 3s; PPR 2.10k, 19k, 21k; 2.18s(TS4Bii, TS4Bi), 19s]
  - SLO 2.3.2 Assessment - Assignment/quiz: Complete the Texas Safety Standards Scavenger Hunt Quiz (S 4/8 1.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k; 1.1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s; 2.1k; 1s, 2s, 3s)
  - SLO 2.3.3 Assessment - Benchmark Assessment II: Candidate Work Sample-Submitted in Live Text [S 4/8 1.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k; 1.1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s; 2.1k; 2.1s, 2s, 3s; PPR 2.10k, 19k, 21k; 2.18s(TS4Bii, TS4Bi), 19s]

- SLO 2.4: The teacher candidates understand the history and nature of science, and know unifying concepts and processes that are common to all sciences. (4/8 Texas Science VI, XI)
SLO 2.4.1 Assessment - Choose three high-quality STEM (science, technology, engineering, mathematics) lessons that are standards-based, and describe how each activity integrates all of the STEM subjects. [4/8 Texas Science IV, XI; PPR 1.10k, 21k, 22k, 23k(TS3Cii); 10s(TS1Ei)]

SLO 2.4.2 Assessment - Assignment: Reflective writing on why it is important to teach process skills in an integrated way. [4/8 Texas Science IV, XI; PPR 1.10k, 21k, 22k, 23k, 10s; TS3Cii]

SLO 2.4.3 Assessment - Benchmark Assessment II: TExES Content Certification Exam [4/8 Texas Science ST IV, V, VIII, IX, X; PPR1.8k; 1.7s(TS1Ai), 8s(TS3Bii), 19s(TS1Bii); 3.6k,7k, 8k; 3.10]

Element B: Interdisciplinary Nature and Knowledge of:

- SLO 2.5: The teacher candidates demonstrate an understanding that science can be integrated with other subjects such as math, social studies, and language arts, and that connecting these subjects makes learning more relevant to students.
  - SLO 2.5.1 Assessment – Write a plan for an integrated unit based on the TEKS and NSES standards which includes ways to integrate science with all or some of the following content areas: math, literacy, technology, engineering, art, social studies. [4/8 Texas Science IV, XI; PPR 1.10k, 21k, 22k, 23k(TS3Cii), 10s(TS1Ei)]

- SLO 2.6: The teacher candidates understand how science affects the daily lives of students and how science interacts with and influences personal and societal decisions. (4/8 Texas Science VII)
  - SLO 2.6.1 Assessment - Participate in a field experience or virtual field trip and create a presentation in which the importance of field-based experiences for middle level science students is clearly demonstrated. This will include how the field experience: meets the needs of the middle level learner, connects with TEKS and NSES standards, includes inquiry, integrates science with other content areas, and effectively manages students in terms of grouping and on-task behaviors. (Piney woods Native Plant Center 5th grade “Earth Science Exploration”) [S 4/8 1.1s,6s; 4.1s,3s, 5s; 3.2s, 3s, 4s, 5s, 6s, 7s, 8s; PPR 1.18k, 18s]

Element C: Middle Level Student Standards

- SLO 2.7: The teacher candidates demonstrate knowledge of the National Science Education standards (NSES) and the Texas Essential Knowledge and Skills (TEKS) for science grades 4-8, and know how to teach and assess the content of those standards
  - SLO 2.7. Assessment - Examine the National Science Education Standards and the TEKS for 4-8 science. Describe five ways that the TEKS are aligned to the NSES [S 4/8 4.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k; 7.5s) (PPR 1.7k(TS3Cii); 1.19k; 1.19s(TS1Bii);1.6s(TS3Bii))]

PLO 4 The teacher candidates will understand, use, and reflect on the major concepts, principles, theories and research related to data-informed instruction and assessment, and they will employ a variety of strategies for a developmentally appropriate climate to meet the varying abilities and learning styles of all young adolescents (AMLE 4; InTASC 2,3,6,7,8)

Element B: Middle level Instructional Strategies:
• SLO 4.1: The teacher candidates will utilize a wide variety of quality strategies that reflect the needs of the young adolescent, and the diverse learners in the classroom, field, and laboratory activities. This includes quality literacy and ELL strategies such as RAFT writing, exit slips, concept maps, KWL charts, tossed terms, word sorts, word walls, read-write-pair-shares, and split-page note making.
  o SLO 4.1.1 Assessment - Discussion reflecting on how developmental characteristics of young adolescents influence science learning [S 4/8 4.1k, 2k, 7k, 4.4s, 5s, 6s, 11s, 13s, 14s, 15s; PPR 1.2k, 3k, 20k]
  o SLO 4.1.2 Assessment - Create a model science journal throughout the course which demonstrates a wide variety of student-centered strategies, including literacy strategies, such as many types of foldables, graphic organizers, free writing, student drawings, one-pagers, Frayer models [(S 4/8 4.1k, 2k, 3k, 4k, 5k, 7k, 8k, 9k, 10k, 11k, 12k, 13k, 14k, 4.1s, 2s, 3s, 4s, 6s, 7s, 8s, 9s, 10s, 11s, 12s, 13s, 14s, 15s, 16s; PPR 1.2k(TS2Cii), 3k(TS2Ci), 20k, 11s(TS3Biii), 20s(TS1Biii), 21s(TS1Cii), 23s; 3.5k]
  o SLO 4.1.3 Assessment - Write a 500-word essay using at least six sources to explain the positive effects of using interactive science journals in the middle level classroom.

Element C: Middle Level Assessment and Data-informed Instruction

- SLO 4.2 The teacher candidates demonstrate an understanding of data-informed instruction, and apply varied and appropriate assessment and assessment strategies to monitor science learning in the 4-8 science classroom
  o SLO 4.2.1 Assessment - Include quality formative assessment strategies such as card sorts, annotated student drawings, Frayer models, fishbowl think-alouds, no-hands questioning, and interactive word wall activities in lesson plans to effectively link assessment, instruction, and learning and connect content to students’ prior knowledge and experience. [S 4/8 5.3k, 4k, 5k, 6k, 7k, 10k, 1s,2s, 3s, 5s, 8s; PPR 1.24k, 25k; 3.10s]
  o SLO 4.2.2 Assessment - Benchmark Assessment II Candidate Work Sample-Submitted in Live Text [S 4/8 5.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k, 10k, 11k, 1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s]

Special Education

PLO 5: Candidates use knowledge of individuals' development, learning needs, and assessment data to inform decisions about effective instruction. Candidates use explicit instructional strategies and employ strategies to promote active engagement and increased motivation to individualize instruction to support each individual. Candidates use whole group instruction, flexible grouping, small group instruction, and individual instruction. Candidates teach individuals to use meta-/cognitive strategies to support and self-regulate learning.

Element 2 Candidates use effective strategies to promote active student engagement, increase student motivation, increase opportunities to respond, and enhance self-regulation of student learning.

Element 3 Candidates use explicit, systematic instruction to teach content, strategies, and skills to make clear what a learner needs to do or think about while learning.

- SLO 4.1: The teacher candidates will utilize a wide variety of quality strategies that reflect the needs of the young adolescent, and the diverse learners in the classroom, field, and laboratory activities. This includes quality literacy and ELL strategies such as RAFT writing,
exit slips, concept maps, KWL charts, tossed terms, word sorts, word walls, read-write-pair-shares, and split-page note making.

- SLO 4.1.1 Assessment - Discussion reflecting on how developmental characteristics of young adolescents influence science learning [S 4/8 4.1k, 2k, 7k, 4.4s, 5s, 6s, 11s, 13s, 14s, 15s; PPR 1.2k, 3k, 20k]
- SLO 4.1.2 Assessment - Create a model science journal throughout the course which demonstrates a wide variety of student-centered strategies, including literacy strategies, such as many types of foldables, graphic organizers, free writing, student drawings, one-pagers, Frayer models [(S 4/8 4.1k, 2k, 3k, 4k, 5k, 7k, 8k, 9k, 10k, 11k, 12k, 13k, 14k, 4.1s, 2s, 3s, 4s, 6s, 7s, 8s, 9s, 10s, 11s, 12s, 13s, 14s, 15s, 16s; PPR 1.2k(TS2Cii), 3k(TS2Ci), 20k, 11s(TS3Biii), 20s(TS1Biii), 21s(TS1Cii), 23s; 3.5k]
- SLO 4.1.3 Assessment - Write a 500-word essay using at least six sources to explain the positive effects of using interactive science journals in the middle level classroom.

- SLO 4.2 The teacher candidates demonstrate an understanding of data-informed instruction, and apply varied and appropriate assessment and assessment strategies to monitor science learning in the 4-8 science classroom
  - SLO 4.2.1 Assessment - Include quality formative assessment strategies such as card sorts, annotated student drawings, Frayer models, fishbowl think-alouds, no-hands questioning, and interactive word wall activities in lesson plans to effectively link assessment, instruction, and learning and connect content to students' prior knowledge and experience. [S 4/8 5.3k, 4k, 5k, 6k, 7k, 10k, 1s, 2s, 3s, 5s, 8s; PPR 1.24k, 25k; 3.10s]
  - SLO 4.2.2 Assessment - Benchmark Assessment II Candidate Work Sample - Submitted in Live Text [S 4/8 5.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k, 10k, 11k, 1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s]

III. Course Assignments, Activities, Instructional Strategies, Use of Technology:

1. Syllabus Quiz: 10 points. You will complete a quiz to demonstrate understanding of the content of the syllabus.
2. Getting to know you Discussion: 10 points. This activity requires you to share information about yourself in order to get to know others in the class and build classroom community.
3. Weekly activities and quizzes at 3 to 20 points each. These activities include a variety of discussions and assignments. See Tentative Course Timeline for more specific information.
4. Participation: 30 points. This includes: class discussions/attendance/professionalism and other short assignments throughout the course. You must read and complete all modules in this course in order to pass this course. Time spent in the course will be monitored.
5. Journal essay: 50 points. You will use several different sources from the D2L modules and the NSTA Learning Center to write a 500-word essay about the advantages of the use of interactive science journals in the middle level classroom.
6. Completion of a Science Journal: 100 points. You will create a model science journal throughout this course using the online tool Wakelet. You will be completing various activities in this journal including STEM activities. A grading rubric will be used to grade this assignment.
7. Creation of an Integrated 5E Science Lesson Plan or participation in Wild About Science Event: 50 points. You will write a 5E science lesson plan which demonstrates the integration of other content areas such as; math, technology, engineering, language arts, art, and social studies. Or, participation in an Outdoor Education event date TBA.
8. **Completion of NSTA Learning Center diagnostic content tests and Interactive E-Book + (100 points).** You will take diagnostic content tests (25 points) and then use the report to improve content knowledge in specific areas of science through an NSTA Interactive E-Book + (75 points). The Interactive E-Book + you choose to complete should be connected with your Virtual Science Lesson.

9. **Attend the NSTA Orientation Webinar. 10 points.** All who attend the live Zoom orientation will receive a certificate of participation. You must also complete the end-of-program survey to receive the certificate of participation. You must submit to me the certificate of participation (with your name on it) in the D2L dropbox to earn 10 points in the course.

10. **Final Exam Virtual Lesson Presentation or participation in Wild About Science Event: 100 points**
    This will be a presentation that you design based on your field experience. More information about this experience will be available within D2L. A grading rubric will be used to grade this assignment. Or, participation in an Outdoor Education event date TBA.

11. **Hands-on science kit activities. 60 points.** You will complete 3 different hands-on science kit activities with materials provided to you. The three activities include *It’s on the Paper, Owl Pellet Dissection, and Electromagnet Design Challenge*. If you are in or near Nacogdoches, you are expected to pick up your kit on the designated days. If you are too far to pick up your kit, it will be mailed to you. You are expected to return the materials that are not considered to be consumable at the end of the semester. A specific list of the materials you must return will be in the kit.

### IV. Evaluation and Assessments (Grading)

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Syllabus Quiz</td>
<td>10 pts</td>
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<tr>
<td>Getting to know you Discussion</td>
<td>10 pts</td>
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<tr>
<td>Attendance NSTA Learning Center Orientation Zoom meeting</td>
<td>10 pts</td>
</tr>
<tr>
<td>Weekly module activities &amp; quizzes @ 3 to 20 points each</td>
<td>300 pts</td>
</tr>
<tr>
<td>Science Journal Assignment paper</td>
<td>50 pts</td>
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<tr>
<td>5E Integrated Lesson Plan</td>
<td>50 pts</td>
</tr>
<tr>
<td>Participation/attendance/professionalism</td>
<td>30 pts</td>
</tr>
<tr>
<td>Completion of one NSTA Interactive E-Book + &amp; 3 diagnostic tests</td>
<td>100 pts</td>
</tr>
<tr>
<td>Final Exam Virtual Science Lesson Presentation or participation in Outdoor Ed. Event</td>
<td>100 pts</td>
</tr>
<tr>
<td>Wakelet Science Journal</td>
<td>100 pts</td>
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<tr>
<td>Video Evidence of completion of 3 hands-on science kit activities (20 pts each) in Wakelet</td>
<td>60 pts</td>
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</tbody>
</table>

**Grading Scale:**

- **A (100-90%)**
- **B (89-80%)**
- **C (79-70%)**
- **F (69% or below)**
V. **Tentative** Course Outline/Calendar

All new modules open at 11:59 PM on Sunday night and close at 11:59 PM on Sunday night.

In order to receive an 'A' in the course, ALL assignments must be completed. Failure to complete any assignment will result in an automatic reduction of the course grade earned by one letter grade, regardless of the total number of points earned.

<table>
<thead>
<tr>
<th>Week</th>
<th>Module Assignments/Readings</th>
<th>Due Date</th>
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<tr>
<td><strong>Week 1</strong></td>
<td><strong>Aug. 23</strong></td>
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</table>
|            | **Module 1:** Getting Started and Syllabus Quiz Assignments:  
1. Getting to Know You Discussion (10 points)  
2. Syllabus Quiz (10 points)  
3. Complete the 3 NSTA diagnostic content tests (25 points)  
4. Attend the first NSTA Orientation Webinar Thurs. August 26th. See information on the D2L News for more information and zoom link. (10 points) | Aug. 29 11:59 PM  |
| **Week 2** | **Aug. 30**  
PLO 4 SLO 4.1  
Assess 4.1.2 [(S 4/8 4.1k, 2k, 3k, 4k, 5k, 7k, 8k, 9k, 10k, 11k, 12k, 13k, 14k, 4.1s, 25s, 3s, 4s, 6s, 7s, 8s, 9s, 10s, 11s, 12s, 13s, 14s, 15s, 16s) (PPR 1.2k(TS2Ciii), 3k(TS2Cii), 20k, 11s(TS3Bii), 21s(TS3Cii), 23s; 3.5k)| Sept. 12 11:59 PM  |
|            | **Module 2:** (Note this is a 2-week module) The Science Journal/Begin your journal Assignments:  
1. Science Journal Assignment (500-word paper worth 50 points)  
2. Attend the NSTA Orientation Webinar Sept. 8th 6:00PM (10 points). (If you did not attend the Aug. 26th orientation.) See information on the D2L News for more information and zoom link. |                   |
| **Week 3** | **Aug. 30**  
PLO 4 SLO 4.1  
SLO 4.1.2 Assess [(S 4/8 4.1k, 2k, 3k, 4k, 5k, 7k, 8k, 9k, 10k, 11k, 12k, 13k, 14k, 4.1s, 25s, 3s, 4s, 6s, 7s, 8s, 9s, 10s, 11s, 12s, 13s, 14s, 15s, 16s) (PPR 1.2k(TS2Ciii), 3k(TS2Cii), 20k, 11s(TS3Bii), 21s(TS3Cii), 23s; 3.5k) | Sept. 12 11:59 PM  |
|            | Continue with Module 2: The Science Journal/Begin your journal  
1. Establish your Wakelet account and explore Wakelet. Set up your science journal in Wakelet.  
2. Science Journal Quiz (20 points)  
3. Complete 1st hands-on science kit activity and submit video and reflection to Wakelet science journal. **It’s on the Paper activity.** |                   |
| **Week 4** | **Sept. 13**  
PLO 4 SLO 4.1  
SLO 4.1.1 Assess (S 4/8 4.1k, 2k, 7k, 4.4s, 5s, 6s, 11s, 13s, 14s, 15s) (PPR 1.2k, 3k(TS2Cii), 20k, 11s(TS3Bii)) | Sept. 19 11:59 PM  |
|            | **Module 3:** The Middle School Student (Who Do We Teach?) Assignments:  
1. Chapter 1 quiz (20 points)  
3. Seven sentence summary of chapter one (10 points)  
5. How Do Middle Schoolers Develop Scientific Understanding Discussion (20 points)  
6. Journal activities |                   |
| **Week 5** | **Sept. 20**  
PLO 2 SLO 2.3 | Sept. 26 11:59 PM  |
|            | **Module 4:** Safety in the Middle Level Science Classroom Assignments:  
1. Safety Standards Scavenger Hunt Quiz (20 points) |                   |
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<tr>
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<th>Sept. 27</th>
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<tbody>
<tr>
<td>PLO 2 SLO 2.7</td>
<td>SLO 2.7 assess [S 4/8 1.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k; 1.1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 2.1k, 2.1s, 2s, 3s] (PPR 2.10k, 19k, 21k, 2.18s(TS4Bii), 19s)</td>
</tr>
<tr>
<td>2.3.1 assess [S 4/8 1.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k; 1.1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 2.1k, 2.1s, 2s, 3s] (PPR 2.10k, 19k, 21k, 2.18s(TS4Bii), 19s)</td>
<td>2. Safety rules presentation (20 points)</td>
</tr>
<tr>
<td>2.3.2 assess (S 4/8 1.1k, 2k, 3k, 4k, 5k, 6k, 7k, 8k, 9k, 1.1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 2.1k, 2s, 3s)</td>
<td>3. Journal activities</td>
</tr>
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| Module 5: The Standards (What Do We Teach?) |
| Assignments: |
| 1. National Science Education Standards and the TEKS (20 points) |
| 2. Journal activities Task 3 |

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<th>Week 7</th>
<th>Oct. 4</th>
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<tbody>
<tr>
<td>PLO 2 SLO 2.2</td>
<td>SLO 2.2.1 assess [4/8 Texas Science ST IV, V, VIII, IX, X] (PPR1.8k; 1.7s(TS1Ai), 8s(TS3Bii), 19s(TS1Bii); 3.6k,7k, 8k; 3.10)</td>
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<tr>
<td>2.2.2 assess (S 4/8 4.4k; 4.3s, 4s, 5s, 10s)</td>
<td>Module 6: Inquiry (How Do We Teach?)</td>
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<td>Assignments:</td>
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<tr>
<td>1. Summary chap. 2 (10 points)</td>
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<td>2. Rube Goldberg video discussion (10 points)</td>
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<td>3. Journal activity Task 4</td>
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<tr>
<td>4. Complete 2nd hands-on activity and submit video and reflection to Wakelet science journal. <strong>Owl Pellet Dissection activity.</strong></td>
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<tr>
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<th>Oct. 11</th>
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<tr>
<td>PLO 2 SLO 2.4, 2.5</td>
<td>SLO 2.4.2 assess (4/8 Texas Science IV, XI) (PPR 1.10k, 21k, 22k, 23k, 10s; TS3Cii)</td>
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<td>SLO 2.5.1 assess (4/8 Texas Science IV, XI) (PPR 1.10k, 21k, 22k, 23k(TS3Cii), 10s(TS1Ei))</td>
<td>Module 7: Integration is KEY (How Do We Teach?)</td>
</tr>
<tr>
<td>Assignments:</td>
<td></td>
</tr>
<tr>
<td>1. Chapter 4 quiz (10 points)</td>
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<tr>
<td>2. Science Text for All (20 points)</td>
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<td>3. Literacy Partners video discussion (5 points)</td>
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<tr>
<td>4. Journal activities</td>
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<th>Week 9</th>
<th>Oct. 18</th>
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<tbody>
<tr>
<td>PLO 4</td>
<td>SLO 4.1</td>
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<tr>
<td>Module 8: Managing the Middle Level Science Classroom</td>
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<tr>
<td>Assignments:</td>
<td></td>
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<tr>
<td>1. Chapter 5 Quiz (10 points)</td>
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<tr>
<td>2. NSTA Activity (Management) (10 points)</td>
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<tr>
<td>3. Procedures video discussion (5 points)</td>
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<tr>
<td>4. Journal activities</td>
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<tr>
<th>Week 10</th>
<th>Oct. 25</th>
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<tr>
<td>PLO 4</td>
<td>SLO 4.1</td>
</tr>
<tr>
<td>Module 9: Questioning and Differentiating</td>
<td></td>
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<tr>
<td>Assignments:</td>
<td></td>
</tr>
<tr>
<td>1. Cooperative Learning in Inclusive Classroom (20 points)</td>
<td></td>
</tr>
<tr>
<td>2. NSTA Questioning Strategy (10 points)</td>
<td></td>
</tr>
<tr>
<td>3. Journal activities</td>
<td></td>
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<table>
<thead>
<tr>
<th>Week 11</th>
<th>Nov. 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>PLO 4 SLO 4.2</td>
<td>SLO 4.2.1 assess (S 4/8 5.3k, 4k, 5k, 6k, 7k, 10k, 1s,2s, 3s, 5s, 8s,) (PPR 1.24k, 25k; 3.10s)</td>
</tr>
<tr>
<td>Module 10: Assessment in Middle Level Science</td>
<td></td>
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<tr>
<td>Assignments:</td>
<td></td>
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<tr>
<td>1. Science Formative Assessment (20 points)</td>
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<thead>
<tr>
<th>Week 12</th>
<th>Nov. 8</th>
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<tbody>
<tr>
<td>Module 11: STEM (Science, Technology, Engineering, Mathematics)</td>
<td></td>
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<tr>
<td>Assignments:</td>
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</tbody>
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| Oct. 3 | 11:59 PM |
| Oct. 10 | 11:59 PM |
| Oct. 17 | 11:59 PM |
| Oct. 24 | 11:59 PM |
| Oct. 31 | 11:59 PM |
| Nov. 7 | 11:59 PM |
| Nov. 14 | 11:59 PM |
1. Heat Loss video discussion (5 points)
2. STEM lesson plan analysis (20 points)
3. Wakelet Journal activity
   Complete 3rd hands-on activity and submit video and reflection to Wakelet journal. **STEM Electromagnet Design activity.**

<table>
<thead>
<tr>
<th>Week 13</th>
<th>Nov. 15</th>
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<tbody>
<tr>
<td>PLO 2 SLO 2.6</td>
<td></td>
</tr>
<tr>
<td>SLO 2.6.1 assess (S 4/8 1.1s,6s; 4.1s,3s, 5s; 3.2s, 3s, 4s, 5s, 6s, 7s, 8s) (PPR 1.18k, 18s)</td>
<td></td>
</tr>
<tr>
<td>PLO 2 SLO 2.1</td>
<td></td>
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<tr>
<td>SLO 2.1.3 assess (4/8 Texas Science VIII, IX, X)</td>
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<tr>
<td>Module 12: Online students will record a Virtual Science Lesson. Work on your virtual science lesson. These will be submitted as a video.</td>
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</tr>
<tr>
<td>F2F students are required to participate in an Outdoor Education Event where they will run stations. Date TBA.</td>
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<tr>
<td>Nov. 21 11:59 PM</td>
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<thead>
<tr>
<th>Week 14</th>
<th>Nov. 22-26</th>
</tr>
</thead>
<tbody>
<tr>
<td>SFA off for Thanksgiving</td>
<td></td>
</tr>
<tr>
<td>Happy Thanksgiving!</td>
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</table>

<table>
<thead>
<tr>
<th>Week 15</th>
<th>Nov. 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. One NSTA Interactive E-Book + completion (75 points)</td>
<td></td>
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<tr>
<td>2. Finalize and submit link to Wakelet science journal (100 points)</td>
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<tr>
<td>Dec. 5 11:59 PM</td>
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<tr>
<th>16 Dec. 6</th>
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<tbody>
<tr>
<td>No final exam. Your virtual science lesson OR Outdoor Ed. Event participation serves as your final in the course.</td>
</tr>
</tbody>
</table>

VI. Readings
Texts and materials needed for this course:

1. **Required textbook:**

   Required Textbook: *Doing Good Science in Middle School: A Practical STEM Guide*  
   By Olaf Jorgenson, Jackie Cleveland, Vicki Massey and Rick Vanosdall  

2. **Required online E-Textbook:** You will be using the NSTA class bundle as an online “textbook.” If you require financial aid to purchase your textbooks, you will go through the SFASU Barnes and Noble bookstore. You will receive an access code from the SFASU bookstore. **If you do not require financial aid, you may purchase directly from NSTA.**
Below are instructions for you to purchase the NSTA Class Bundle which includes access to NSTA fee-based digital resources AND NSTA student membership.

**IMPORTANT NOTE for STUDENTS:**
Do not purchase an Individual NSTA Membership. Individual NSTA membership is sold online for $40, $60, $80 or $99 but this product is different from the NSTA Class Bundle for your course.

You must purchase the NSTA class bundle available ONLY at the web address provided below.

Dear Students: Follow the instructions below to create your NSTA account and purchase the Class Bundle:

1. Go to the NSTA website to create your account: [https://my.nsta.org/preservice](https://my.nsta.org/preservice)

   **Note:** If you already have an account at NSTA you do not need to create a second account. Use your NSTA e-mail address & password or your last name (instead of e-mail) & ID number (instead of password) to login to the website. If you are unsure, please send a message to: (learningcenterhelp@nsta.org) for assistance.

2. After creating your account press “Continue” and on the next screen select your state, institution, professor, and course. At this time enter your “Expected Graduation Date.”

3. Click “Continue” and on the next screen use your credit card for payment. Your professor selected the price point ($72) for everyone in the class.

**Next steps?**
Become familiar with the NSTA website. Below is a list of things to try:
1. Visit your class landing page by clicking “Menu” and selecting “Cohorts.”
2. Edit your profile – you will find it by clicking “Menu” and selecting “My Account.”
3. Explore the “Discussion Forums” – they can be found by clicking “Menu” – make a post!

**Note:** A limit for the number of fee-based e-book chapters that each student may add to their library for free has been set at 15.

Send your questions to: learningcenterhelp@nsta.org
Flavio Mendez,
NSTA.

3. **Supplementary Materials (available online)**

1. TEKS (Texas Essential Skills and Knowledge) – Current science standards for the state of Texas. You can acquire these on the web via the Texas Education Agency (TEA) website.

2. Texas Education Agency Texas Safety Standards: Kindergarten through Grade 12. A guide to laws, rules, regulations, and safety procedures for classroom, laboratory, and field investigations (Charles A. Dana Center funded by the Texas Education Agency). The standards can be downloaded from the TEA website. To access: 1)Go to TEA website 2)click on A-Z Index 3)scroll down and click Science Safety Standards.
Standards

4) Scroll down to Documents and click on Texas Education Agency Texas Safety Standards.

3. National Science Education Standards, National Academy Press (1996). This report can be downloaded free of charge from the National Academies Press. Link is in D2L course.


Resources:

JOURNALS

Science and Children, National Science Teachers Association.
Science Scope, National Science Teachers Association.
The Science Teacher, National Science Teachers Association.
Texas Science Teacher, Science Teachers Association of Texas.

OTHER RESOURCES


Texas Education Agency. (2010). *Texas Essential Knowledge and Skills (TEKS)*.


**ONLINE RESOURCES**

American Association for the Advancement of Science — www.aaas.org
American Association of Physics Teachers — www.aapt.org
American Astronomical Society — www.aas.org
American Chemical Society — www.acs.org
American Institute of Biological Sciences — www.aibs.org
American Physical Society — www.aps.org
National Association of Biology Teachers — www.nabt.org
National Association of Geoscience Teachers — www.nagt.org
National Science Teaching Association — www.nsta.org
The Geological Society of America—www.geosociety.org

**VII. Course Evaluations:**

Near the conclusion of each semester, students in the College of Education (COE) electronically evaluate courses taken within the COE. Evaluation data is used for a variety of important purposes including:

1. Course and program improvement, planning and accreditation
2. Instruction evaluation purposes
3. Making decisions on faculty tenure, promotion, pay, and retention

As you evaluate this course, please be thoughtful, thorough, and accurate in completing the evaluation. Please know that the COE faculty is committed to excellence in teaching and continued improvement. Therefore, your response is critical! In the College of Education, the course evaluation process has been simplified and is completed electronically through MySFA. **Although the instructor will be able to view the names of students who complete the survey, all ratings and comments are confidential and anonymous, and will not be available to the instructor until after final grades are posted.**
VIII. Student Ethics and Other Policy Information

Class Attendance and Excused Absence: Policy 6.7
Regular, punctual attendance, documented participation, and, if indicated in the syllabus, submission of completed assignments is expected at all classes, laboratories, and other activities for which the student is registered. Based on university policy, failure of students to adhere to these requirements shall influence the course grade, financial assistance, and/or enrollment status. The instructor shall maintain an accurate record of each student’s attendance and participation as well as note this information in required reports and in determining final grades. Students may be excused from attendance for reasons such as health, family emergencies, or student participation in approved university-sponsored events. However, students are responsible for notifying their instructors in advance, when possible, for excusable absences. Whether absences are excused or unexcused, a student is still responsible for all course content and assignments. Students with accepted excuses may be permitted to make up work for up to three weeks of absences during a semester or one week of a summer term, depending on the nature of the missed work. Make-up work must be completed as soon as possible after returning from an absence.

Academic Accommodation for Students with Disabilities: Policy 6.1 and 6.6
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 936-468-3004 as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

Student Academic Dishonesty: Policy 4.1
Abiding by university policy on academic integrity is a responsibility of all university faculty and students. Faculty members must promote the components of academic integrity in their instruction, and course syllabi are required to provide information about penalties for cheating and plagiarism, as well as the appeal process.

Definition of Academic Dishonesty
Academic dishonesty includes both cheating and plagiarism. Cheating includes, but is not limited to:
- using or attempting to use unauthorized materials on any class assignment or exam;
- falsifying or inventing of any information, including citations, on an assignment; and/or;
- helping or attempting to help another in an act of cheating or plagiarism.

Plagiarism is presenting the words or ideas of another person as if they were one’s own. Examples of plagiarism include, but are not limited to:
- submitting an assignment as one’s own work when it is at least partly the work of another person;
- submitting a work that has been purchased or otherwise obtained from the Internet or another source; and/or,
- incorporating the words or ideas of an author into one’s paper or presentation without giving the author credit.

Penalties for Academic Dishonesty
Penalties may include, but are not limited to reprimand, no credit for the assignment or exam, re-submission of the work, make-up exam, failure of the course, or expulsion from the university

Student Appeals
A student who wishes to appeal decisions related to academic dishonesty should follow procedures outlined in Academic Appeals by Students (6.3).

**Withheld Grades: Policy 5.5**

At the discretion of the instructor of record and with the approval of the academic unit head, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work by the deadline set by the instructor of record, not to exceed one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F, except as allowed through policy [i.e., Military Service Activation (6.14)]. If students register for the same course in future semesters, the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average.

If a student has been found guilty of academic dishonesty, a grade of "WP" or "WH" may be changed to "WF" at the discretion of the faculty member. In the case of a grade change to "WF", the course will not count towards the six course drop limit since the student is incurring an academic penalty.

**Student Code of Conduct: Policy 10.4**

Interference or disruption of students, faculty, administration, staff, the educational mission, or routine operations of the university is prohibited. Such activity includes, but is not limited to, behavior in a classroom or instructional program that interferes with the instructor or presenter’s ability to conduct the class or program, or the ability of others to profit from the class or program. To remain in the vicinity of activity that is disrupting normal university functions when requested to leave by a university official is prohibited. Bystanders, if their presence incites or adds to the disruption, as well as more active participants in the disruptive activity, may be in violation of this policy as well. Engaging in physical violence of any nature against any person. This includes fighting; assaulting; battering; using a knife, gun, or other weapon; or acting in a manner that threatens or endangers the physical health or safety of any person or causes a reasonable apprehension of such harm.

The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom. Students who do not attend class regularly or who perform poorly on class projects/exams may be referred to the Early Alert Program at SFA.

SFASU values students’ mental health and the role it plays in academic and overall student success. SFA provides a variety of resources to support students mental health and wellness. Many of these resources are free, and all of them are confidential.

**On-campus Resources:**
SFASU Counseling Services  
[www.sfasu.edu/counselingservices](http://www.sfasu.edu/counselingservices)  
3rd Floor Rusk Building  
936-468-2401

SFASU Human Services Counseling Clinic  
[www.sfasu.edu/humanservices/139.asp](http://www.sfasu.edu/humanservices/139.asp)  
Human Services Room 202  
936-468-1041
Crisis Resources:
Burke 24-hour crisis line 1(800) 392-8343
Suicide Prevention Lifeline  1(800) 273-TALK (8255)
Crisis Text Line:  Text HELLO to 741-741

Additional Information:

Code of Ethics for the Texas Educator:

The Texas educator shall comply with standard practices and ethical conduct toward students, professional colleagues, school officials, parents, and members of the community and shall safeguard academic freedom. The Texas educator, in maintaining the dignity of the profession, shall respect and obey the law, demonstrate personal integrity, and exemplify honesty and good moral character. The Texas educator, in exemplifying ethical relations with colleagues, shall extend just and equitable treatment to all members of the profession. The Texas educator, in accepting a position of public trust, shall measure success by the progress of each student toward realization of his or her potential as an effective citizen. The Texas educator, in fulfilling responsibilities in the community, shall cooperate with parents and others to improve the public schools of the community. This chapter shall apply to educators and candidates for certification.


To complete Certification/Licensing Requirements in Texas related to public education and other professional settings, you will be required to:

1. Candidates must undergo a criminal history background check prior to clinical teaching and prior to employment as an educator. The public school campuses are responsible for completing the criminal background check. A person who is enrolled or planning to enroll in a State Board for Educator Certification-approved educator preparation program or planning to take a certification examination may request a preliminary criminal history evaluation letter regarding the person's potential ineligibility for certification due to a conviction or deferred adjudication for a felony or misdemeanor offense.

A Preliminary Criminal History Evaluation is a non-mandatory, non-binding evaluation of an individual’s self-reported criminal history. In addition, the agency obtains your name-based Texas criminal history information. The service is provided to the requestor for a non-refundable fee. The requestor will receive an evaluation letter by email from agency staff advising of potential ineligibility for educator certification. You are eligible to request a Preliminary Criminal History Evaluation if:

• You enrolled or planning to enroll in an educator preparation program or
• You are planning to take a certification exam for initial educator certification, and
• You have reason to believe that you may be ineligible for educator certification due to a conviction or deferred adjudication for a felony or misdemeanor offense.

You are not eligible for a preliminary evaluation of your criminal history if you do not have a conviction or deferred adjudication for a felony or misdemeanor offense.

In addition, you must complete the fingerprinting process when you apply for certification. Participation in the evaluation does not preclude you from submitting to a national
criminal history review at the time you apply for your educator certification. Your criminal history will be reviewed and you may be subject to an investigation based on that criminal history, including any information you failed to submit for evaluation. Additional information can be found at https://tea.texas.gov/Texas_Educators/Investigations/Preliminary_Criminal_History_Evaluation-FAQs/.

2. Provide one of the following primary ID documents: passport, driver’s license, state or providence ID cards, a national ID card, or military ID card to take the TEExES exams (additional information available at http://www.tx.nesinc.com/PageView.aspx?f=GEN_Tests.html. YOU must provide legal documentation to be allowed to take these mandated examinations that are related to certification/licensing requirements in Texas. If you do not have legal documentation, you may want to reconsider your major while at SFASU.

3. Successfully complete state mandated a fingerprint background check. If you have a history of criminal activity, you may want to reconsider your major while at SFASU.

For further information, contact the Office of Assessment and Accountability at 936-468-1282 or edprep@sfasu.edu.

VIII. Other Relevant Course Information:

Expectations:

1. Future teachers are held accountable for correct spelling and grammar usage. Spelling and correct grammar are expected at all times, on all assignments. Points will be deducted for incorrect spelling and poor grammar. If you are experiencing difficulty with standard English and the conventions of speaking and writing, you should seek assistance at the campus Academic Resource Center ARC. Call 468-4108.

2. In order to pass this course, ALL WORK must be completed and submitted to the instructor on time. Late work will have points deducted at instructor’s discretion. Work may also be sent back for a redo.

3. In order to receive an ‘A’ in the course, ALL assignments must be completed. Failure to complete any assignment will result in an automatic reduction of the course grade earned by one letter grade, regardless of the total number of points earned.

4. Students are expected to participate in all D2L discussions. Participation will be noted according to the depths and comprehension of your responses during class discussions. Participation will contribute to your final grade.

Professionalism:

Enthusiastic completion of the course activities is of utmost importance in demonstrating commitment to becoming a responsible teacher. Mastery and professional products reflect quality work and reflect on the work you will produce as a teacher. Attitude and confidentiality are essential in determining the teacher’s potential as a successful educator. Gossiping is a reflection of negativism, lack of maturity, and integrity. If problems occur, go to your university professor; you will find that others’ attitudes are easily influenced through negativity.