Course Philosophy
As our society becomes more technologically and scientifically situated it will be important to have committed science teachers in the schools. Early field experiences and early opportunities to explore the profession of science teaching have been shown to be essential in the lives of teachers who persist as science teachers. This course is designed to help those in science or interested in science to explore the profession of teaching prior to engaging in the necessary coursework required to be certified as a science teacher. In addition, this course allows those considering the profession of education to learn basics about teaching science and the science education profession.

Course Description
This course has two components that allow students to explore the field of science education. The first component occurs in the class meetings and consists of examining the field of science teaching. During our weekly meetings we will talk about teaching science, which includes your own experiences (good and bad) and parts of the state and national guidelines that guide science teachers. The second component will occur in the classrooms of teachers and will require that you practice and teach three 1-hour lessons on the same conceptual goal, but each with different pedagogical objectives. You will be provided with the materials, a guide to teach the lesson, time in class to prepare and practice the lesson, and the conceptual goal of the lesson. After each lesson, you will be given feedback by your cooperating teacher and the instructors of this course, which should guide your reflection about the lesson and enactment of the following lesson.
Course Logistics
Class meets Monday, 2pm-3pm, in Payne Building Room L1-32.

Class information will be posted on Blackboard. To use Blackboard,
1. Go to https://my.asu.edu/ (my ASU portal)
2. Type in your ASU ID and Password.
3. Locate section “My Classes”
4. Select SED/SES 111: Explorations in Science Education. Course components can be found in the folders located on the left hand site of the webpage. Examples include:
   a. Syllabus – Syllabus and like material
   b. Staff Information – Contact info for all instructors and teaching assistant(s)
   c. Course Documents – Online text, guidelines, rubrics

The book for the course is on-line and free:

Inquiry: Thoughts, Views, and Strategies for the K-5 Classroom

If you will not read a pdf file, you are responsible for getting this document printed at one of the local printing shops.

Course Grading
(A) Participation in class/quizzes (20%) - This part of the grade is based upon student attendance and contribution to class discussions. Unexcused absences and lack of contribution will affect this portion of your grade. This grade will be determined through peer and instructor evaluation and quizzes. A tentative participation rubric will be shared in class.

(B) Assignments/reflections (30%) – Throughout the course you will be asked to complete short assignments/reflections. These assignments may include: short reflections, one-page summaries, a brief presentation, or other type of activity. These assignments are to be placed in the digital drop box in Blackboard by 12:00pm (noon) by the due date.

(C) Field Experience (50%) – This part of the grade comprises: preparing to teach in a classroom (e.g., planning, collecting materials, communicating with teaching partner and cooperating teacher), visiting the classroom to meet the children, teaching the lessons in a classroom, and professional demeanor and attire while on school sites.

Grades for the course will be awarded based upon the following percentage points:

100-98%--A+; 97%-94%- A; 93%-90% - A-
89-88% - B+; 87%-84%- B; 83%-80%-B-
79-78% - C+; 77%-74%- C; 73%-70%-C-
69-68% - D; 67%-64%- D; 63%-60%-D
Lower than 60% - F
Course Policies

1. Arrive on time and prepared for each class session. Be sure to have read the assigned chapters of the online text as outlined in the course syllabus in order to be able to participate effectively in class. Keep in mind being prepared greatly influences the “participation” part of the course grade.

2. Attendance is the responsibility of each class participant. While emergencies and obligations occur, unexcused absences will reduce one’s grade. Please, when possible, inform us of your absence in advance. You can send an electronic message (email) or leave a message on office voice mail.

3. Due to the nature of the course, absences need to be made-up by meeting with either an instructor or teaching assistant outside of class time to obtain missed information. Each session’s agenda is critical to the development of each student toward the in-field assignments. Absences that are not made-up prior to an in-field teaching experience may result in the student being withheld from participating in that experience. In particular, an absence during the class session that occurs the week before a scheduled in-field experience may result in the participant being withheld from participating in that experience.

4. Reflective assignments are due at 12:00pm (noon) on the due date listed on the syllabus. Please follow the guidelines outlined in the syllabus for format of the paper. All reflective assignments must be composed using the computer program Word, be in either .doc or .docx format, and be submitted through the electronic drop box in Blackboard. If a modification of this due date is deemed necessary, all students affected will be notified via email at least 24 hours in advance. No reflections will be accepted after noon of the last day of class (5/4/09).

5. Late reflective assignments submitted three days past the due date will not be accepted. Late reflective assignments submitted within three days after the due date are eligible for 50% of the original point value. Please be aware that the failure to complete a reflection will disrupt the entire class. Complete your reflective assignments in order to advance the knowledge of the group.

6. If you are not satisfied with a grade received on a reflective assignment, you are encouraged to modify and resubmit it within 3 days after the assignment is returned. The final grade for the rewritten reflective assignment will be the average score between the first grade and the second grade.

7. It is critical that you work cooperatively with your teaching partner. Please maintain open communication and share ideas equally to create the best inquiry science lesson possible. Instructors and the teaching assistant are available if you need assistance. Please do not hesitate to contact one of us.
8. Please know the three in-field teaching experiences will each have a different objective for the students to meet. All three teaching experiences will be on the same assigned science content, but aspects of pedagogy will differ for each teaching experience.
   • Field experience 1: Create and implement an inquiry science lesson
   • Field experience 2: Modify lesson into 5E inquiry science lesson format
   • Field experience 3: Assessment of student learning

9. Arrive at least 15 minutes prior to the scheduled teaching time during in-field experiences. If you are late, or do not show up for a field assignment, you will not get credit for this aspect of the class (the entire field component grade).

10. Formats, procedures, and reflections can be modified to better meet your needs. Please talk to the instructors if you have suggestions or ideas that may improve the course.

11. Rubrics for each reflection will be posted in Blackboard under “Rubrics” for your access.

12. ASU’s policy for academic integrity and honesty will be followed in this class. If you are not clear of this policy, please see an instructor or the teaching assistant.

ACADMIC INTEGRITY

The highest standards of academic integrity are expected of all students. The failure of any student to meet these standards may result in suspension or expulsion from the university and/or other sanctions as specified in the academic integrity policies of the individual academic unit.

Violations of academic integrity include, but are not limited to: cheating, fabrication, tampering, plagiarism, stealing, or facilitating such activities. The university and unit academic integrity policies are available from the Office of the Provost and Academic Affairs and from the deans of the individual academic units.

PLAGARISM STATEMENT

To take information directly from another source without giving credit or citing the original source is plagiarism. Plagiarism is one of the worst academic sins, for the plagiarist destroys the trust among colleagues and invalidates your credibility as an honest person. It violates the ethical codes of writing and research. Plagiarism in any form will not be tolerated since it violates university’s policies and standards.

All information accessible via the Internet should be assumed to be private property and subject to copyright protection. Internet sources should be credited appropriately, as with the use of any copyrighted material.
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<th>WEEK</th>
<th>TOPIC/ASSIGNMENTS</th>
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| 1 (1/26) | Class overview  
*Assignment:* Watch a movie related to teaching that you have not seen before, which includes: *Stand and Deliver, Freedom Writers, Music of the Heart, October Sky* (movies based on true stories related to education) |
| 2 (2/2) | Teaching science: What you experienced and what it looks like  
*Due:* Reflective Assignment #1  
*Assignment:* Go to the classroom, complete Reflective Assignment #2 |
| 3 (2/9) | In the schools (no class meeting)  
Visit your assigned classroom to meet the students and complete field Reflective Assignment #2.  
*Read:* Chapters 1, 2 & 3 |
| 4 (2/16) | Sharing our observations about teaching science and comparisons to the standards  
Doing a FOSS Lesson  
*Due:* Reflective Assignment #2 |
| 5 (2/23) | 5E Format for your FOSS Lesson  
Practicing your lesson in class  
*Due:* 5E FOSS lesson |
| 6 (3/2) | In the schools: Teaching your first lesson in a classroom (no class meeting) |
| 7 (3/16) | Reflections on Teaching  
Teaching again: Inquiry  
*Due:* Reflective Assignment #3  
*Read:* Chapters 4 & 5 |
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| 8 (3/23)   | Different models of teaching  
              Teaching again: Inquiry  
              *Read:* Chapter 6 |
| 9 (3/30)   | *In the schools:* Teaching your second lesson in a classroom            
              *(no class meeting)* |
| 10 (4/6)   | Reflections on Teaching  
              *Due:* Reflective Assignment #4  
              *Read:* Chapters 8 & 10 |
| 11 (4/13)  | Simple Assessments  
              Prepare for your final experience  
              *Read:* Chapters 11 & 12 |
| 12 (4/20)  | *In the schools:* Teaching your third lesson in a classroom             
              *(no class meeting)* |
| 13 (4/27)  | Reflections on Teaching  
              *Due:* Reflective Assignment #5  
              *Read:* Chapter 13 |
| 14 (5/4)   | Next steps in education, or not  
              *Due:* Reflective Assignment #6 |
## Reflective Assignments

Note: All assignments should be at least two pages typed (unless otherwise noted), 12 pt font, 1 inch margins, and double spaced. Page limits are minimums with no maximum. All assignments due by 12:00pm (noon) on listed due date.

### Reflective Assignment #1 - (due 2/2/09)
A 3-4 page comparison of your educational experience and the movie you saw. Your response should consider how you would have responded to the teacher in the movie if you were a student in the class. In addition, you should discuss what did you liked or not like about the teacher in the movie.

### Reflective Assignment #2 - (due 2/16/09)
As you watch the class, make notes about all of the actions of the teacher during the lesson, as well as all of the actions of the students. When the class is over, show the teacher everything you noticed and ask him/her about which required planning and which actions required the lesson to be enacted. Talk about the student actions and if the teacher expected these or will be modifying the lesson based on the actions of the students. Write a 2-3 page summary paper of the actions and your discussion with the teacher.

### Reflective Assignment #3 - (due 3/16/09)
As a teacher, what was the most difficult part of the lesson? What was the easiest part of the lesson? How well did you did your lesson uncover student thinking?

### Reflective Assignment #4 - (due 4/6/09)
What changes did you make in your lesson? How well did you enact an inquiry lesson? What was difficult and easy about teaching inquiry?

### Reflective Assignment #5 - (due 4/27/09)
What changes did you make in your lesson? How well did your students understand the concept you were teaching? What evidence do you have for this conclusion?

### Reflective Assignment #6 - (due 5/4/09)
Write a 2-3 page paper that addresses: (1) the aspects of this course that were successful, and the parts that need to be changed, and (2) your future educational plans pertaining to science teaching and what has motivated them.