### Meeting Time and Place:
Monday 8:00-10:45am  216 ECTR

### Instructor’s Name
Dr. Marty Nabors

### Office Hours:
Tuesdays and Thursdays 9:30-12:00PM
Others by appointment

### Office Location:
86 Wentworth Street, Room 333

### Office phone/Fax/Email:
953-5618, Fax 953-8109
naborsm@cofc.edu

### Course Prerequisites:
EDEE 327

### Course Description:
This course is designed for the study and practice of teaching methods and materials for science at the early childhood level. Emphasis is placed on developmentally appropriate practice, concept development through questioning techniques, critical thinking activities, multimedia/technology, and inquiry teaching to meet group and individual needs.

### Course Text/Materials:

### Outcomes for Candidates:
**Understanding and valuing the learner:**
1. Identify students’ cognitive development with regard to content and process (SOE I, II, III  NACTE 3A, 3B, 4, 5B  NAEYC 1, 4C; EEDA 4)
2. Select developmentally appropriate hands-on science teaching materials (manipulative, software, hardware, etc.) (SOE II, IV  NACTE 2C, 3A  NAEYC 4; EEDA 5, 7)
3. Identify students’ misconceptions in their field experience and use these examples to develop experiences to assist children in their developing conceptions (SOE II  NACTE 3A, 3B, 3C, 4  NAEYC 3)
4. Plan an inquiry-based science center for Pre K – 3 students, using the SC Science Standards and NGSS (SOE I, II, III  NACTE 2C, 2I, 3A, 3D NAEYC 4A, 4B, 4C; ISTE 1)
5. Demonstrate the on-going nature of assessment through formative and summative evaluations that are both formal and informal
6. Recognize achievements of diverse groups of people and their contributions (SOE II NACTE 5A NAEYC 2)

Perform the basic and integrated process skills of science (observation, communication, classification, metric measurement, prediction, inference) (SOE II NACTE 2C NAEYC 4, 4B)

**Knowing what and how to teach and assess and how to create environments in which learning occurs:**

1. Perform the basic and integrated process skills of science (observation, communication, classification, metric measurement, prediction, inference) (SOE II NCATE 2C NAEYC 4, 4B)

2. Establish the relationships between science content and process (SOE I, II, III NACTE 3A NAEYC 4, 4B)

3. Plan for the uses of technology in the classroom (SOE II, IV NACTE 2C, 3A NAEYC 4; EEDA 16; ISTE 3)

4. Write developmentally appropriate lesson plans, including age appropriate safety and management (SOE I, II, III, IV NACTE 2I, 3A)

5. Conduct an in-class scientific investigation (SOE I, II, III NACTE 2C)

**Understanding yourself as a professional:**

Observe various science education and science occupations (SOE II NACTE 5A, 5D NAEYC 2; ISTE 5)

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**Safe School Climate Act**

Section 59-63-110: Citation of Article.
Section 59-63-120: Definitions.
Section 59-63-130: Prohibited Conduct; reports by witnesses.
Section 59-63-140: Local school districts to adopt policies prohibiting harassment; required components; model policies by State Board of Education; and bullying prevention programs.
Section 59-63-150: Availability of civil or criminal redress; immunity of reporting school employee or volunteer.

**Course Requirements:**

1. Regularly attend and participate in class
2. Read weekly assignments and participate in discussion.
3. Review five journal articles (life, physical, space, earth science and teaching science with technology).
4. Create and implement a developmentally appropriate science center.
5. Critique five science websites and/or apps.
6. Write three lesson plans and include a reflection about each of the component parts based on your field placement experience.
7. Copy South Carolina Science Standards K-3 and the NGSS.
8. Present the portfolio of science lesson materials that you created for the class.
9. Final

Late submissions of assignments are *unacceptable* under normal circumstances. Please do not attempt complete an initial submission for
any assignments after the due date. I will NOT accept any late work.

Any written assignment submitted is considered a final product that will be graded on both what is written (clarity, depth, and insight) and how it is written (the form of the written work). Therefore, it is crucial to realize that correct grammar and spelling, proper punctuation, adherence to assignment guidelines, and neatness will affect your grade. As an educator, you will be expected to demonstrate competency not only in verbal but also in written communication with parents, administrators, and other educators. Please use the resources around you to proofread and to edit your work. Rubrics for all assignments are provided to assist you. The Writing Lab provides FREE, INDIVIDUALIZED help on all parts of the writing process. See www.cofc.edu/~csl/ for further information.

Due dates for course assignments are listed in the course calendar or are announced in class. No LATE assignments will be accepted. If there is a problem with submitting the assignment on time, please contact the professor ahead of time to ask for an extension (only extenuating circumstances will be allowed).

**Journal Reviews:**

Read five science articles from teacher journals, such as *Science and Children* or *Young Children*. Write a two-page, double-spaced, typed review of the article. For each review, include a summary (2pts.), one half page in length and a reaction paper that is one page and a half in length (6pts.) and grammar (2pts.). Each review must address one of the four science areas: life, physical, earth, space and the fifth articles must be about teaching science using technology.

<table>
<thead>
<tr>
<th>Score</th>
<th>Thorough 5pts</th>
<th>Adequate 3pts</th>
<th>Inadequate 1pt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describe what the article is about</td>
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<tr>
<td>Describe what the article states you can do in your classroom. This section is to be personalized to your school setting.</td>
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<tr>
<td>Describe what is new, to you, about this practice and</td>
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</table>
how you plan to become effective with the information.

APA style and grammar are correct.

**Lesson Plans:**

Lesson plans for the class lesson and follow-up lesson plan in your field experience should be typed and double-spaced. The format should include:

S.C. Science Standard:
Objective:
Assessment:
Material list:
5 E’s:
Accommodations:
Reflections:

The lesson plans are to be written in complete sentences.

**5 E’s approach to teaching and learning**

<table>
<thead>
<tr>
<th>Teacher Behavior</th>
<th>Student Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Ask—Do I see these behaviors happening, am I constantly diagnosing the learning?</em></td>
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</tr>
<tr>
<td><strong>Engage</strong></td>
<td><strong>Engage</strong></td>
</tr>
<tr>
<td>- create an interest in topic/lesson</td>
<td>- show interest in the</td>
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<tr>
<td>- raise questions</td>
<td>- ask questions, answer</td>
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<tr>
<td>- elicit what student know about the topic</td>
<td>- tell what they know about</td>
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<tr>
<td>- cause curiosity</td>
<td>- be curious</td>
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<tr>
<td><strong>Explore</strong></td>
<td><strong>Explore</strong></td>
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<tr>
<td>- encourage students to work together problems</td>
<td>- work together to solve</td>
</tr>
<tr>
<td>- observe and listen to the students</td>
<td>- think freely about the topic</td>
</tr>
<tr>
<td>- ask questions to extend thinking ideas</td>
<td>- record observations and</td>
</tr>
<tr>
<td>- make sure student have supplies ideas</td>
<td>- listen critically to others’</td>
</tr>
<tr>
<td><strong>Explain</strong></td>
<td><strong>Explain</strong></td>
</tr>
<tr>
<td>- ask student to explain in their own words solutions to others</td>
<td>- explain possible to</td>
</tr>
<tr>
<td>- have students refine in their own words</td>
<td>- use observations and data</td>
</tr>
</tbody>
</table>
in explanations
- use students’ previous experiences and explanation and
- understandings to explain concepts explanation
- provide formal labels after student
- when
- have described the concept

**Expand**
- encourage students to apply and extend
- but similar
  - learnings to new situations
- remind students to think of alternatives
- expect students to use formal labels
- ask “What do you think about...” & “Why” observations and conclusions

**Evaluate**
- observe and record as students apply new learnings learnings
- look for evidence that students have understanding of
  - changed their thinking
- encourage students to self-evaluate learning
- ask open ended questions to assess questions
- make sure the evaluation looks like the learning

**Science Center:**
To demonstrate a meaningful, challenging learning experience for all young children create a science center. The center must include information from one topic covered in your field experience.

<table>
<thead>
<tr>
<th>LEARNING CENTER EVALUATION FORM</th>
<th>4 activities (10 points)</th>
<th>3 activities (7 points)</th>
<th>2 activities (4 points)</th>
<th>1 activity (1 point)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science standard is stated</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Activities are</td>
<td></td>
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</tbody>
</table>
- developmentally appropriate and meet the needs of diverse learners
- Directions are easy to follow
- Activities are integrated with other subject areas and relate to the science process skills
- Higher level thinking is required (above the literal level)
- The center is attractive: neat handwriting and correct grammar

**Apps and/or Websites:**

Research the Internet and find five science sites and/or apps geared towards early childhood:

<table>
<thead>
<tr>
<th>Review of Apps and Websites</th>
<th>Review One</th>
<th>Review Two</th>
<th>Review Three</th>
<th>Review Four</th>
<th>Review Five</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Area</td>
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<tr>
<td>Topic</td>
<td></td>
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<tr>
<td>Name of App or Website</td>
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<td>Cost (can be free)</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Last update</td>
<td></td>
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<tr>
<td>Device required</td>
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<tr>
<td>Ratings and reviews by others</td>
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<tr>
<td>Contains links that lead to additional materials (If yes, name them)</td>
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<tr>
<td>Easy navigation for you and for children</td>
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<tr>
<td>Accurate content and how you know it is accurate</td>
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<tr>
<td>Developmentally appropriate</td>
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<tr>
<td>Free from sensationalism</td>
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<tr>
<td>Targeting of one population or lack of a population</td>
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</tbody>
</table>

You will submit a one page paper on each site. The due dates are noted on the timeline in the syllabus. Your front page will be this form. The portion you write will use this data and will answer the following rubric.

Report Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Excellent (4 pts.)</th>
<th>Satisfactory (2 pts.)</th>
<th>Unsatisfactory (0 pts.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific Literacy</td>
<td>Explains how scientific concepts can be learned using this assignment and how this knowledge can be used for personal, communal, and cultural reasons.</td>
<td>Explains how scientific concepts can be used for personal, communal, and cultural reasons.</td>
<td>Does not explain how scientific concepts can be used for personal, communal, and cultural reasons.</td>
</tr>
<tr>
<td>Teachers</td>
<td>Explains how teachers could use the websites for activities, projects, and pedagogically. Focuses on how students can learn information and use</td>
<td>Explains how teachers could use the websites for activities, projects, and pedagogically.</td>
<td>Does not explain how teachers could use the websites for activities, projects, and pedagogically.</td>
</tr>
<tr>
<td>Unifying Concepts</td>
<td>Lists the unifying concepts of the website and how they are aligned with state or national standards.</td>
<td>Lists unifying concepts.</td>
<td>Lists only topics and concepts.</td>
</tr>
</tbody>
</table>

**Attendance:**
Please note that attendance is required. No more than three absences are allowed. More than five will result in one being dropped from the class. Students will be marked tardy if they arrive in class within the first ten minutes after class has started. They will be marked absent if they arrive after ten minutes. Three tardies will be counted as one absence. There will be no allowance for leaving a class early and students who do leave early will be marked absent. Students who exceed the allowed absences will be dropped with a WA. If the student exceeds the allowable absences due to extenuating circumstances beyond the student’s control, a panel of education professor from that semester will review the circumstances and make a final decision.

**Late Policy:**
No papers, units or assignments, etc. will be accepted late. All assignments are due during class time on the designated days noted on the class schedule or stated in class. Any assignment may be handed in early for feedback.

**In Class Policy:**
No hats/caps will be worn in the room.
No food or beverages are allowed in the room.
Arrive on time and prepared to learn!

**Evaluation Scale:**

| Science Center | 10 pts. |
| Lesson Plans and reflection | 20 pts. |
| Journal Reviews (5) | 20 pts. |
| Five Websites and or App Reviews | 20 pts. |
| Group lesson plan | 20 pts. |
| Science in the news | 10 pts. |
| Test 1 | 30 pts. |
| Test 2 | 42 pts. |
| **Total** | **172 pts.** |

| A | 160-172 points. |
| A- | 157-159 pts. |
| B+ | 153-156 pts. |
| B | 148-152 pts. |
| B - | 144-147 pts. |
| C+ | 141-143 pts. |
| C | 135-140 pts. |
| C- | 132-134 pts. |
| D+ | 129-131 pts. |
| D | 124-128 pts. |
### Weekly Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
</table>
| **January 12** | Introduction to class  
Information cards  
Observation and discuss website and article reviews |
| **January 19** | No class – Martin Luther King, Jr. Day |
| **January 26 *News** | 5 E’s/ STEM  
Classification (Peanut activity)  
*Bring in SC Science Standards*  
Chapters 1 & 2 Science and Children and Families discuss “Family Science” |
| **February 2 *News** | Chapter 3 discovering Science  
Chapter 4 Plants  
Communication & Metric Measurement  
*Website reviews due* |
| **February 9 *News** | Science process skill Inference  
Science process skill Prediction (Bring some pennies to class.) |
| **February 16 *News** | Chapter 5 Animals (investigate owl pellets)  
*Life Science article review due*  
Chapter 6 – the Human Body |
| **February 23** | Action For a Cleaner Tomorrow Workshop |
| **March 2-6** | Spring Break!!! |
| **March 9 *News** | Lesson Plan Writing Practice  
Review for test 1 |
| **March 16 *News** | Test 1 |
| **March 23 *News** | Review test  
Chapters 7 & 8 – air and water  
Discuss T charts  
Chapter 9 – Weather  
Discuss graphing  
*Teaching science with technology review due* |
| **March 30 *News** | Chapter 10  
Rocks and Minerals  
Chapters 11 & 12 magnetism & Effects of gravity and discuss learning centers  
*Earth Science article review due* |
| **April 6 *News** | Chapter 13- simple machines (marshmallow launch)  
Sign-up for in-class lessons  
Chapters 14 & 15 – sound and light |

<table>
<thead>
<tr>
<th>Grade</th>
<th>Mark</th>
</tr>
</thead>
<tbody>
<tr>
<td>D-</td>
<td>120-123 pts.</td>
</tr>
<tr>
<td>F</td>
<td>Below 120 pts.</td>
</tr>
<tr>
<td>Quiz</td>
<td>Physical Science article review due</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>April 13*News</td>
<td>Chapter 16 – the environment (worm activity)</td>
</tr>
<tr>
<td>Quiz</td>
<td>Space Science article review</td>
</tr>
<tr>
<td>April 20</td>
<td>Group inquiry lessons with lesson plans</td>
</tr>
<tr>
<td></td>
<td>April 22 – Earth Day Activities</td>
</tr>
<tr>
<td>April 27</td>
<td>Review for final test</td>
</tr>
<tr>
<td>To Be Announced – Final Exam</td>
<td>Set up learning centers</td>
</tr>
</tbody>
</table>

**Grading and Assignments**

Late submissions of assignments are *unacceptable* under normal circumstances. Please do not attempt to make initial submission for any assignments after the due date.

Any written assignment submitted is considered a final product that will be graded on both what is written (clarity, depth, and insight) and how it is written (the form of the written work). Therefore, it is crucial to realize that correct grammar and spelling, proper punctuation, adherence to assignment guidelines, and neatness will affect your grade. As an educator, you will be expected to demonstrate competency not only in verbal but also in written communication with parents, administrators, and other educators. Please use the resources around you to proofread and to edit your work. Rubrics for all assignments are provided on WebCT to assist you. The Writing Lab provides FREE, INDIVIDUALIZED help on all parts of the writing process. See [www.cofc.edu/~csl/](http://www.cofc.edu/~csl/) for further information.

Due dates for course assignments are listed in the course calendar or are announced in class. If there is a problem with submitting the assignment on time, please contact the professor ahead of time to ask for an extension (only extenuating circumstances will be allowed).

**Final Portfolio:**

All assignments completed in the course will be polished and compiled into a portfolio. All materials must be about a particular unit based on the standards and grade level of choice. The final portfolio will be presented to the class upon completion.

**ATTENDANCE:**

Class attendance and punctuality are expected professional behaviors. Specific attendance requirements for each course are outlined in the syllabus. A candidate may be dropped from a course for excessive absences. Two absences for ANY reason will be allowed; however, you may not submit assignments if you are absent. Upon the third absence, a course participation grade will take into effect and reduce the candidate’s score by 3% points. Upon a fourth absence, the candidate will automatically be withdrawn from a course with the grade of WA/F. I will work with you, but it is your responsibility to contact me by phone or email ahead of time.
Students should not arrive to class late. Persistent infringement of tardies will result in the reduction of a candidate’s score by 5%. Leaving class is accepted only if prior approval is accepted by the professor.

**HONOR SYSTEM:**
All courses in the School of Education are conducted under the Honor Code of the College of Charleston. The Honor Code specifically forbids lying, cheating, attempted cheating, stealing, attempted stealing and plagiarism. Students at the College are bound by honor and by their acceptance of admission to the College to abide by the code and to report violations. As members of the College community, students are expected to evidence a high standard of personal conduct and to respect the rights of other students, faculty, staff members, community neighbors, and visitors on campus. Students are also expected to adhere to all federal, state, and local laws. Faculty members are required to report violations of the Honor Code or Code of Conduct to the Office of Student Affairs. Conviction of an Honor Code violation in this class will result in the grade of “F” for the course. As a student at the College you have agreed to uphold the policies outlined in *the Student Handbook: A guide to civil and honorable conduct* (2003/2004) both in your coursework and as a representative of the College of Charleston in field experiences and clinical practice situations. Violations to the Code of Conduct outlined on pages 10-11 in the *Student Handbook* will be reported to the Honor Board.

As EDEE is a dual program, in that we certify candidates for teacher certification, professors reserve the right to document violations that would impact student certification (e.g., attendance in field experiences and clinical practice, professionalism in schools, etc.).

**ADA Accommodations:**
In compliance with the American with Disabilities Act (ADA), all qualified students are entitled to “reasonable accommodations.” Please notify the instructor during the first week of class of any accommodations needed.

**Required Technology:**
Enrollment in this course requires you to utilize the following computer applications: PowerPoint, Excel, Internet/WWW, OAKS via Internet, e-mail, and Word Processing.

It is expected that you can utilize the above listed computer applications. These computer applications are available in the College of Charleston managed computer labs located in JC Long, the Library, and various other campus locations. If you do not have reliable access to these applications you should plan to use the campus computer laboratories.