CURR 316: Teaching Science and Mathematics to Children

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Office: South Hall, 229B
Campus Inclement Weather Information: 585.245.6666

Office Hours
Tuesday 2:00 – 3:00 PM & Thursday 12:00 – 2:00 PM and by appointment. No appointment is necessary during scheduled office hours.

Class Meeting: South Hall 233. TR 8:00 – 9:40 AM (§01); TR 10:00 AM – 11:40 AM (§02)

Final Exam Time: 8:00 class (§ 01) –, Tuesday, 20 December, 12–3:20 PM
10:00 class (§ 02) – Thursday, 15 December, 8–11:20 AM

Library Research Help: If you need research help as you complete your assignments, speak with the Milne reference librarian on duty between 10AM and closing time most days (ask for help at the service desk). You can also contact the education librarian, Michelle Costello, by emailing her directly (costello@geneseo.edu) or requesting an in-person meeting via (https://costello.youcanbook.me/ OR http://www.geneseo.edu/library/research-or-technology-consultations).

Required Textbooks:


Grading: There will be no curving of grades, and the cut scores below are those to which I will strictly adhere. There is no extra credit.

| Excellent: | 219 – 235 A |
|            | 212 – 218 A- |
| Very Good: | 207 – 211 B+ |
|            | 195 – 206 B |
|            | 188 – 194 B- |
| Satisfactory: | 172 – 187 C |
| Minimally Competent: | 165 – 171 C- |
| Failure: | 0 – 164 E |

Please note that you must earn a grade of C- or higher in this course in order to proceed to the next block of Education courses.

If you are refused entrance to a field visit for any reason (inappropriate dress, late arrival, lack of preparedness, etc.), your grade will be dropped one grade level (from an A- to a B- for example) for each time you are turned away.

Failure to return any materials borrowed from me will result in your grade being dropped to the next grade step (from a B+ to a B for example).
Class Activities, Class Attendance, Class Participation and Professionalism

Class participation is an integral part of this course. Imbedded within this category is also the idea of professionalism. Candidates are expected to display a professional attitude at all times. This includes, but is not limited to staying awake and being attentive during class, recognizing and respecting the opinions of others (even if they differ from your own), appropriately representing the college while in the field, not talking out of turn in class, and providing relevant contributions to class discussions. Candidates are expected to participate in all class activities and class discussions. Individual and group activities will be assigned during class meetings, and most will be completed during that class period. These will not always be announced ahead of time, and some have point values attached to them; attendance is strongly encouraged. Activities will include hands on experiences, reading and discussion activities, and class presentations. These are an integral part of class participation and, along with quizzes, may not be made up.

Activities and Participation will be recorded, in part, according to the following rubric:

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Performance</th>
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</thead>
<tbody>
<tr>
<td>Candidate shows evidence of having gone beyond what is required for the course. <strong>If you simply come to class but never or rarely participate, you will not earn full participation points.</strong></td>
<td>Excellent</td>
</tr>
<tr>
<td>Candidate demonstrates initiative in class to advance discussions and activities by asking questions, offering opinions, etc. (Note that this goes beyond merely attending class and participating in partner/group work!)</td>
<td>Satisfactory-Very Good</td>
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<tr>
<td>Candidate completes activities, answers questions when called on, and turns in assignments on time.</td>
<td>Marginal-Minimum Competency</td>
</tr>
<tr>
<td>Candidate does not complete activities, turns in assignments late, and does not demonstrate adequate understanding of course content.</td>
<td>Failure</td>
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Academic Honesty

Attempting to take credit for work that is not yours or is not adequately cited (e.g., copying word for word from a journal article) is a serious ethical violation. Violations may result in a grade of zero for the assignment in question, an automatic E for the course, and may be cause for further disciplinary actions. For additional details or guidance, please see the appropriate pages of the College Bulletin.

Grade Appeal Policy

Upon receiving graded material, please take time to read my comments and the directions for the assignment. If you are concerned about the grade you have earned on an assignment, you are welcome to write a grade appeal and plan to see me to discuss the matter. Grade appeals (with complete justification for concern) must be submitted to me in writing, along with the original graded assignment, within one week of the return of the assignment. After the one-week period has passed, grade appeals will not be considered. There is no extra credit.
General Information
The purpose of this course is to help you continue your professional development as a teacher candidate by providing a framework within which you acquire the skills, knowledge, and dispositions necessary to be an effective teacher of elementary science and mathematics. The course is NOT designed to provide you with recipes for success or a bag of tricks from which to choose lessons, but rather to help you discover and effectively use the basic skills of teaching and the resources available to you as you develop your own instructional plans. You will need to draw on your own personal knowledge of math and science as well as your increasing knowledge of children and how they learn. My main goal for you in this course is to help you prepare yourself to teach subjects that are vital, dynamic, and fun.

In this section of Curriculum 316, topics will be explored through the use of lectures, discussions, out-of-class assignments, workshops, student presentations, elementary classroom visitations, and hands-on activities. All course information, including assignments, is available at my website.

Everyone is expected to come to each class meeting prepared, that is, having brought the required materials and having completed the assigned readings and any other assignments due during that class. Similarly, everyone in the class is expected to participate fully in all activities and discussions. Note part of your final grade is based on class participation – you cannot participate if you are not here! This course will be a demanding one and will require quite a bit of work on your part. Do not count on it to be an "easy A!"

In the event that class is canceled, the material to be covered during the canceled class will be covered during the next class meeting (this includes presentations).

If you have questions regarding an assignment or feel that the directions are ambiguous, please drop by during my office hours or set up an appointment to discuss your concern. Please note that any questions pertaining to a particular assignment should be addressed well in advance of the due date. Please do not expect to engage in detailed discussions about any assignment on the day before it is due. I am always happy to answer specific questions about any assignment on which you are working, however I will not "look it over for you."

No assignment rewrites, make up work or extra credit work will be assigned or accepted in an attempt to "boost" grades at any time during the semester -- please do not ask!! Also, DO NOT wait until the last three weeks of the semester to come and find out "what you need to do to pass." What you need to do to pass is keep up, work hard, study well, and ask for help when you need it, all semester long!

Before the second class meeting, you must complete and submit an on-line student information sheet, which is available from the Curr 316 page of my website. Completing this form on time counts as a class activity (i.e. class participation points).

My grading rubrics are provided for your information – please look at them and use them to frame the work you submit.
Guidelines for School Visits

- You are responsible for transportation to and from all school visits. Plan well ahead so you arrive on time.
- Dress professionally, however keep in mind that you may wind up sitting on the floor to do your lesson.
  ("Professionally" in this case means at least no jeans or anything resembling jeans, no sneakers, no low cut tops, and having your back and underwear concealed at all times!)
- **Come prepared for your lesson.** Make sure your materials are ready and that you understand your methods.
- No gum chewing or hats allowed.
- Be respectful to all those you encounter. It will be difficult to know whether you are speaking to a parent, teacher, principal, or superintendent. Remember that you may apply for a job in this district one day!
- Any identifying information regarding the student or his/her family must be removed from documents being used outside the classroom setting.
- Teacher candidates should refrain from any unprofessional discussions about students and should avoid discussing specific students or parents inside or outside of the school setting unless it is regarding a professional matter, or is part of a college faculty member guided discussion.

Occasionally, a student may confide information to teacher candidates that has serious implications for the student's welfare. Instead of promising confidentiality to students, teacher candidates should tell the student that information important to their welfare will be passed on to the supervising faculty member and others in authority immediately. If a child shares such information with teacher candidates, or if teacher candidates witness or suspect child abuse or neglect, they must inform their supervising faculty member immediately. Do not take it upon yourself to contact any authorities other than your supervising faculty member, the school principal, or school counselor.

DISCLAIMER STATEMENT

**National Accreditation:** The Ella Cline Shear School of Education (SOE) is seeking to continue our national accreditation for its programs through the Council for the Accreditation of Educator Preparation (CAEP). Part of this accreditation process includes reviews of samples of teacher candidates' course work by professional societies and the CAEP Board of Examiners. Therefore, your course work may be selected and used as examples to demonstrate that the learning outcomes are being addressed and achieved in this course. Please be advised that to ensure your privacy, when possible, names will be removed from the selected work. Please note that we cannot modify work uploaded into Taskstream. If you want your name removed from your work you will need to remove it from the document(s) prior to submission into Taskstream. If you do not wish to participate in this process, please state your intent in writing to your professor or supervisor.

**KEY ASSIGNMENTS STATEMENT:** Please note that certain assignments are considered “key assignments” for School of Education teacher education candidates. These assignments must be completed at an acceptable level in order to pass the course. The key assignment for this course is the integrated lesson plan.

**CERTIFICATION EXAMS:** The New York State Teacher Certification Examinations™ (NYSTCE®) address New York Education Law and Commissioner's Regulations, which require prospective New York State educators to pass designated tests as a requirement for receiving state certification. Please refer to the NYSED website [http://www.nystce.nesinc.com/index.asp](http://www.nystce.nesinc.com/index.asp) for the most current information on testing requirements.

**STUDENTS WITH DISABILITIES STATEMENT:** SUNY Geneseo will make reasonable accommodations for persons with documented physical, emotional, or cognitive disabilities. Accommodations will also be made for medical conditions related to pregnancy or parenting. Students should consult with the Director of the Office of Disability Services (Tabitha Buggie-Hunt, 105D Erwin, tbuggieh@geneseo.edu) and their individual faculty regarding any needed accommodations as early as possible in the semester.

**RETAKE OF PRACTICUM AND STUDENT TEACHING:** In the Review Process, a teacher candidate may be allowed one re-take of a practicum experience (Early Childhood Education majors, Childhood Education majors, and Childhood with Special Education majors) or a student teaching experience (all programs).
Course Description
This course covers contemporary teaching/learning strategies for mathematics and science instruction in early childhood and elementary classrooms. Instructional techniques integrate hands-on learning, manipulatives, the student’s environment, functional uses of mathematics and science, and assessment strategies appropriate for all students. The focus will be on the nature of children’s science and mathematics learning, the teacher as a facilitator of meaningful learning, and New York State and National Learning Standards for science, mathematics, and technology. Constructivism, the idea that individuals must build knowledge from their own experiences and thought, provides an underpinning for insights into the nature of children’s learning in the life and physical sciences and in mathematics. Includes field trip component. Prerequisites: Either Educ. 214 or SpEd. 234, and Math. 140. Pre- or co-requisite: Math. 141. 4(4-0).

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<thead>
<tr>
<th>STANDARDS/OUTCOMES</th>
<th>LEARNING OUTCOME</th>
<th>ASSESSMENT</th>
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<tbody>
<tr>
<td><strong>CF</strong> &lt;br&gt;A2, B1, B2, C1 &lt;br&gt;1a</td>
<td>1.0, 2.2, 3.3, 3.1, 3.2, 3.4, 4.5.1</td>
<td>Field Visits, Math Fair, Integrated Lesson Plan, Science Fair</td>
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<tr>
<td><strong>NAEYC</strong> &lt;br&gt;1b, 2a</td>
<td>1.0, 2.2, 3.3, 3.1, 3.2, 3.4, 5.1, 5.2</td>
<td>Integrated Lesson Plan</td>
</tr>
<tr>
<td><strong>ACEI</strong> &lt;br&gt;A2, B1, B2, C1 &lt;br&gt;4c</td>
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<td>Field Visits, Math Fair, Integrated Lesson Plan, Science Fair</td>
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<tr>
<td><strong>B2, C1, C2</strong> &lt;br&gt;5a, 5b, 5c, 6b</td>
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<td>Math Fair, Integrated Lesson Plan, Science Fair</td>
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<tr>
<td><strong>A2, B1, B2, C1</strong> &lt;br&gt;1c, 4b, 4c, 4d, 5c</td>
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<td><strong>A1, B1, B2, C1</strong> &lt;br&gt;4a, 4b, 4c, 4d, 5b</td>
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<td>Integrated Lesson Plan</td>
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<tr>
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<td><strong>C1, C2</strong> &lt;br&gt;3a, 4b, 4c, 5b, 6c</td>
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Selected Bibliography


**Conceptual Framework Strands and Outcomes**

**A. Teacher as Scholar**
A Rigorous Liberal Arts and Sciences Education
1. Candidates demonstrate, appreciate, and advocate the value of a broad range of knowledge and skills in the liberal arts and sciences and are able to use oral and written communication skills effectively to analyze and convey information.
2. Candidates use appropriate technologies to enhance instruction and to promote active learning.

**B. Teacher as Constructivist Educator**
The Ability to Meet the Educational Needs of All Students
1. Based on their knowledge of student development within the context of family, school, and community, candidates understand how to create a classroom environment to help all students become successful learners.
2. Candidates use teaching and learning strategies consistent with an understanding of multiple perspectives, cultural and linguistic diversity, and different learning styles, and act in ways that welcome and encourage diversity.

**C. Teacher as Reflective Practitioner**
A Professional Commitment to Inquiry and Reflective Practice
1. Candidates understand the role of educational research in the classroom and apply that research in their teaching.
2. Candidates demonstrate ongoing professional growth as they implement new strategies, reflect on their teaching and its impact on their students, and adjust and revise their practices based on student needs and changing circumstances, and base curricular decisions on evidence of student learning.

**Dispositions**
All candidates will demonstrate a positive attitude toward teaching and learning by:

**Developing a Professional Stance**
- Meeting professional and ethical standards
- Communicating appropriately and working collaboratively
- Demonstrating a commitment to child advocacy

**Demonstrating Active Engagement in Teaching**
- Promoting active learning for all students
- Demonstrating a commitment to reflective inquiry and practice
- Seeking and responding to opportunities for change and growth

**Welcoming Diversity**
- Treating all people with respect
- Seeking out curriculum materials that respect and support diversity