Course Term: Spring 2008, 3 credit hours

Meeting Time and Place: Monday 6-8:45 PM, Education Center 212

Instructor’s Name: Mutindi Ndunda

Office Hours: Monday: 1:00 - 5:00; Tuesday: 1:00 - 3:00; Also by appointment.

Office Location: 86 Wentworth Street #323

Office Phone/Email: 843.953.8046 ndundam@cofc.edu

Course Prerequisites: None

Course Description: This course is designed to examine possible solutions to current problems in curriculum and policy within school systems in South Carolina. The course is designed to increase organizational and interpersonal skills that empower teachers to alter school climates and garner technical support while designing and implementing K-12 programs of excellence in science and mathematics.

Course Text/Materials:

(a) Science for All Americans and Benchmarks—order online or download a copy from: http://www.project2061.org/publications/bsl/online/bolintro.htm

(b) Math national, state and local standards – most are available online

(c) Handouts/articles/books from attached reading to be retrieved from library.

Course Objectives:

1. To study the natures of curriculum, policy and systems in public schools with a focus South Carolina public schools. Teachers will:
   a. understand the crisis in science and mathematics education and determine their role in mitigating the crisis,
   b. become facilitators of change for school improvement in science and mathematics,
   c. identify factors impinging on the teaching of science and mathematics in K-12 settings

2. Learn and use practices consistent with national and state standards and policies,
   a. describe the way national and state policy is made in science and mathematics education and how it influences college faculty and public school teachers,
   b. analyze sources of satisfaction for mathematics and science teachers and use this information to help prevent stress and burnout,
   c. diagnose institutional needs, prescribe a desired state for science and mathematics and design and implement interventions to attain that desired state,
d. use professional organizations to the benefit of school mathematics and science programs,
e. develop networks with scientists, business and industry in the community.

3. Systematically analyze a school setting for factors impinging on the teaching of mathematics and science in order to help teachers achieve maximum effectiveness when beginning work in a new school or continuing work at an existing site.
   a. compare expertise to enhance the knowledge base and performance of science and mathematics teachers in schools and school districts,
   b. evaluate overall science and mathematics programs,
   c. evaluate all dimension of the school environment that relate to the teaching and learning of science and mathematics.

4. Know key actors and agencies and what they do to translate demands and resources into policies and decisions affecting American education.

5. Understand the process by which policies, decisions and actions are made and implemented in educational institutions at school and school district, state, and federal governmental levels.

6. Be able to apply political frameworks and theories to evaluate policy issues.

Description of Projects/Assignments:
1. Policy Paper. This is a 6-7 page (doubled spaced) Math/science politics and policy paper excluding the reference list. Identify a policy problem and give the rationale for why this is a policy issue. Your paper must include the following:
   (a) An overview of how the policy was developed. Who and why was this policy developed? Who were/are the key players? Who were included and who were excluded from the process?
   (b) What was the social, political, economic and context within which this policy was developed?
   (c) How was/is the policy implemented?
   (d) How was assessment of the policy implementation done? In other words, how successful has this policy being and what factors have influenced its success or lack of success?
   (e) What is your personal analysis of this policy? You must support your statements with evidence/literature.

2. Presentations: Every week you will have assigned readings. You are expected to lead a discussion at least once during the semester.
   (a) Read and analyze one of the books and or several articles listed at the end of this syllabus. You are welcome to choose any book or set of articles that are not on the list. However, please check them with the instructor before you do so.
   (b) Describe its implications for education and in particular science and/or mathematics education.
   (c) Develop questions and/or activities to engage your colleagues in the discussions. Presentations will be made using dialogic discussion technique. For some details about dialogic discussions, see article Dialogic Discussion and the Paideia Seminar by Laura Billings; Jill Fitzgerald American Educational Research Journal, Vol. 39, No. 4. (Winter, 2002), pp. 907-941. Available at the CofC library online database.

3. Action plans.
   (a) Develop a protocol to gather data about factors impinging on science and mathematics teaching for use in a new or existing school.
   (b) Develop and implement an action plan to change one aspect of mathematics and/or science in an educational unit at any level, report your data and an analysis.
4. **Reflective summaries (1-2 paragraphs):** You will be expected to read the weekly assigned materials and write a reflective summary which you will discuss/share in class. The reflective summary may be organized to answer the following questions—(a) who (b) what, (c) what (d) so what? (i.e. what are the implications—overt and covert?)

**Participation/Teaching/ Learning Strategies:** This course relies heavily on student participation. It is problem-based, and inquiry oriented. While learning in this course will take place as a result of lectures, discussions, readings, and concentrated study by individual students within the course, a major teaching/learning strategy calls for small group discussions, individual and group presentations (spontaneous and planned), and class discussions. Students are expected to develop skill in applying theoretical constructs to real problems, issues, and situations.

**Evaluation Scale: (Percentages)**

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Policy paper</td>
<td>30%</td>
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<tr>
<td>Presentations on readings/article review/reflections</td>
<td>30%</td>
</tr>
<tr>
<td>Action plans</td>
<td>20%</td>
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<tr>
<td>Participation in dialogic techniques</td>
<td>20%</td>
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**Resource Reading List:**
See attached list

**Attendance Policies & Honor System:** All College of Charleston policies will be followed.

**Course Calendar:**

<table>
<thead>
<tr>
<th>Class activity/agenda</th>
<th>Assignment/Expectations</th>
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</table>
| Jan. 14               | Overview of course of expectations (syllabus etc)  
                        | Dialogic discussions Billings et al (2002)  
                        | Heck 2004 chapter1 |
| Jan. 21               | 1. Discussion on policy development— theoretical perspectives  
                        | 1. Heck 2004 chapter 3  
                        | 2. Interrogating Math and science benchmarks/standards—the historical perspectives  
                        | 2. Math and science standards/benchmarks-  
                        | **Assignment:** A reflective summary on the readings to be shared in class |
| Jan 28                | 1. Who influences policies—perspectives—economic, social etc. Example: Critical perspective  
                        | 1. Roger Dale –The state and education policy (a) education and the capitalist state: contributions & contradictions chapter 1 and (b) chapter 3 & 4 (pp. 23-64)  
                        | 2. **Assignment:** Presentation and reflection on reading due |
| Feb. 4                | 1. Impact of policies—such as the NCLB on math and science teaching and learning  
                        | 1. Readings—book/ articles on policy—specifically on math and science policy. Provide a brief reflection—a paragraph or two about the implications to policy.  
                        | 2. Identify science and math education policy issues/ problems/crisis of interest to you.  
                        | **Assignment:** Brief articulation of a science or math policy problem.  
                        | 3. Discussion of math and science policy issues |

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1 Please note this calendar is subject to change.
Feb. 11  
1. Discussion of math and science policy issue.  
2. Discussion of case studies of change initiatives in mathematics and science education illustrating how each informs the crisis  
1. Select articles/book for presentation and lead discussion on articles/books  
2. Assignment: Individual policy issue overview in class by individual students/groups.

Feb. 18  
1. Local and state math and science educational policies—continuation of discussion  
2. Action plan  
1. Reading of assigned articles and articles relevant to your policy problem.  
2. Assignment: Present a bibliography of your policy issue (at least 4 articles)

Feb 25  
Identify current problems in SC’s science and mathematics education enterprise  
1. Select articles/books to lead discussion in class. Reading of selected articles and presentation.  
2. Assignment—Action plan draft  
Assignment—Draft of your policy paper to be discussed in class.

March 4  
Manipulate factors in schools that influence mathematics and science teachers’ perspectives on change, institutional setting policy and teaching practice Leadership models

March 7-13  
Spring break begins

March 18  
Specify characteristics defining stages of professional development through which science and mathematics teachers typically progress  
2. Assignment: reflective response

March 25  
Policy paper discussion  
Develop a career and life plan for science and mathematics teachers  
Select articles/book for presentation on related issue.

Apr 1  
Discern the people that influence the teacher most (other teachers, principals, supervisors, professors, legislators, etc.)  
Article selections and presentation on this issue.

Apr 8  
1. Discuss action plans  
2. Data gathering tools and action research  
3. Design, implement and evaluate interventions to enhance science and mathematics programs  
Article selections

April 15  
Policy research paper discussions  
1. Article selections  
2. Assignment—action plan due  
3. Career and life analysis due

April 22  
Presentations of policy research papers and action plans  
Final policy research papers due

POLICIES AND PROCEDURES FOR COURSES IN THE SCHOOL OF EDUCATION*

1. **GRADING SCALE:**

<table>
<thead>
<tr>
<th>Letter Grades</th>
<th>Percentage Range</th>
<th>Grade Points</th>
<th>Interpretation</th>
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</thead>
<tbody>
<tr>
<td>A</td>
<td>93 – 100%</td>
<td>4.0</td>
<td>Superior</td>
</tr>
<tr>
<td>B+</td>
<td>88 - 92%</td>
<td>3.5</td>
<td>Very Good</td>
</tr>
<tr>
<td>B</td>
<td>83 – 87%</td>
<td>3.0</td>
<td>Good</td>
</tr>
<tr>
<td>C+</td>
<td>78 - 82%</td>
<td>2.5</td>
<td>Fair</td>
</tr>
<tr>
<td>C</td>
<td>74 - 77%</td>
<td>2.0</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

*POLICIES AND PROCEDURES FOR COURSES IN THE SCHOOL OF EDUCATION*
<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>D**</td>
<td>70 - 73%</td>
<td>1.0</td>
<td>Barely Acceptable</td>
</tr>
<tr>
<td>F</td>
<td>0 - 69%</td>
<td>0.0</td>
<td>Unacceptable</td>
</tr>
</tbody>
</table>

** A grade of 73 or below is considered a failing grade for all Graduate courses.

5. **PROFESSIONAL BEHAVIOR/DISPOSITIONS:** Students are responsible for all content and assignments for each class. They will be expected to demonstrate professionalism by demonstrating the following dispositions:

- The belief that all students can learn.
- Value and respect for difference.
- Value of positive human interaction.
- Intellectual curiosity and willingness to learn new knowledge.
- A commitment to inquiry, reflection and self-assessment.
- Value of responsible, collaborative, and cooperative work.
- Sensitivity to community and cultural context.
- Responsible and ethical practice

6. **ATTENDANCE:** Class attendance and punctuality are expected professional behaviors. Specific attendance requirements for each course are outlined in the syllabus. A student may be dropped from a course for excessive absences, based on the class attendance requirements specified in the syllabus.

7. **MAKE-UP EXAMINATIONS AND QUIZZES:** If a quiz or examination (other than the final examination) was missed for a legitimate reason, as determined by the professor, the professor has the discretion to administer a make-up examination. It is the responsibility of the student to make arrangements for the make-up. This is to be done as soon as possible after the missed examination/quiz.

8. **DUE DATES:** Due dates for course assignments, as well as scheduled quizzes and assignments, are listed in the course calendar or are announced in class. Consequences related to late materials are determined by the professor.

9. **FINALS:** The final for each course (which may be in the form of an examination, performance, or project) will only take place during the period scheduled for the final for that course. (Students who have more than two finals scheduled on the same day may arrange for an alternate time for one final through the Office of the Undergraduate Dean).

10. **RESEARCH PAPERS:** Papers will be typed (word processed) using the style of the Publication Manual of the American Psychological Association (Fifth Edition, 2001).

* Applies to all EDEE and EDFS courses and all PEHD teacher concentration courses above the 200 level.
Revised 2/7/03
The mission of the School of Education at the College of Charleston is the development of educators and health professionals to lead a diverse community of learners toward an understanding of and active participation in a highly complex world. In pursuit of this mission, faculty and students will demonstrate:

- intellectual curiosity and rigor;
- reflective, research-based practice;
- collaboration and consensus building;
- field-oriented service and community outreach;
- and cultural sensitivity and understanding.

TEACHING AND LEARNING STANDARDS

Standard I: Evidence theoretical and practical understanding of the ways learners develop.

Standard II: Demonstrate understanding and application of the critical attributes and pedagogy of the major content area.

Standard III: Evidence a variety of strategies that optimize student learning.

Standard IV: Participate in informed personal and shared decision making that has as its focus the enhancement of schooling and the profession.

Standard V: Communicate effectively with students, parents, colleagues, and the community.

Standard VI: Demonstrate an understanding of the continuous nature of assessment and its role in facilitating learning.

Standard VII: Show an understanding of the culture and organization of schools and school systems and their connection to the larger society.