IECE 326  
Integrating Mathematics and Science across the Early Childhood Curriculum  
Spring 2009

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Class Meeting Times:  8:30am-12:00pm  
Class Meeting Days: Thursday TPH 302

Western Kentucky University Information Number: 745-4845 (School closing information due to weather)

**Course Description**  
Methods for active involvement for yours children in the areas of mathematics and science in the developmentally appropriate ways. Thirty hours of field experience required. Field experience will be incorporated into class time

**Textbooks and Readings**  
Additional reading may be assigned by the instructor.

**Content Outline**  
1. Basic mathematical concepts: One to one correspondence, number sense and counting, logic & Classifying, comparing, early geometry

2. Basic scientific processes: observing, classifying, communicating, measuring, predicting, inferring
3. NSTA and NCTM Standards
4. How concepts are developed and acquired.
5. Promoting concept development through problem solving.
6. Materials and resources.
7. Interdisciplinary integration
8. Technology in early childhood math and science.
9. Math and Science beyond the classroom.

**IECE Teacher Standard**  
I. Create appropriate learning environments that are supportive of development needs.
II. Introduce, implement, facilitate, and manage development and learning.
III. Assess children's cognitive, emotional, social, communication, adaptive and physical development; organize assessment information and communicate the results.
IV. Reflect on and evaluate teaching and learning situation, environments, and programs.
V. Collaborate and consult with staff in a team effort, volunteers, families, and other providers.
VI. Engage in self-evaluation of teaching and management skills
VII. Support and promote the self-sufficiency of families
VIII. Demonstrate implementation of technology.

**Course Objectives:**
- Discuss standards of practice in Mathematics.
- Discuss standards of practice in Science.
- Discuss fundamental concepts and skills in Math and Science.
- Identify appropriate Math and Science programs that meet the needs of young children.
- Identify resources, innovative approaches and demonstrate skills in selecting and presenting science and Math materials for your children.
- Demonstrate proficiency in creating appropriate lesson plans in the areas of Science and Math.
- Demonstrate knowledge in creating a learning environment with Science and Math integrated across the curriculum.

**Assignments**
1. **Quizzes:** Four (4) quizzes worth 25 points each will be given. Quizzes will be based or readings, class discussions, and handouts.
2. **Software Reviews:** Review ten (10) developmentally appropriate (5 Math and 5 Science) software programs worth 10 points each. Each student will provide a written summary of the software include.
3. **Field Experience:** Each student will complete minimum of 30 hours of field experience. These hours should be done in a KERA Preschool Program which will be assigned by the instructor. Each student will be expected to plan and implement two lessons in the areas of Math and Science (total of 2 lessons for each area) during this field experience products to be submitted to the instructor will include (1) Daily log of what is observed. (2) Written KTIP lesson plans implemented in the field experience(3) Teacher evaluation of field experience (4) A summative reflection of what was learned from the experience.
4. **Group assignment:** Each group will design a learning environment which will include a Science and Math area. Each group will be responsible for (1) The design of the learning environment. (2) Devising a lists of material, equipment, sample lessons, etc. for both science and Math areas using a budget of $2000 (3) Presenting this design to the class with a rationale in which they explain the principles used in the design and reasons for choosing the specific materials, lessons, and equipment for inclusion in their design.
5. **Science and Math resource bibliography:** This may include articles, texts materials internet sites and software.

**Posting Assignments**
1. You are required to check the course site and your email on a regular basis. You may check the schedule for assigned readings and assignments. I MAY post power points for each of our weekly discussions prior to weekly meetings. Power points in no way take the place of reading the text or related materials and are the intellectual property of the instructor.
2. Assignments will be turned in via the assignment section of the blackboard course site. To access assignments, you follow the link from the main menu of the course. You will attach your assignments through this tool. Documents you submit via assignments MUST be saved to your computer in either Microsoft WORD or Rich
Text Format.

3. You will know if you have successfully submitted an assignment by checking the grade book and under the assignment you should see a “!” by the name of the assignment. If you do not see a “!” your assignment has not been submitted and you will need to resend. Assignments turned in via email attachment will not be accepted, you must use the assignment section of blackboard to submit your work.

4. All assignments must be named with your first initial, last name and the name of the assignment. name my document PAdamsMathLesson Plan. Assignments turned in not following this naming convention will not be graded.

5. Save a hard copy of all assignments turned in through the assignment section of blackboard. Always backup documents from your hard drive so that you will not have to redo an assignment completely if you have technology problems.

**Grading Scale**

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes 4 @ 25 points each</td>
<td>100</td>
</tr>
<tr>
<td>Software Reviews 10 @ 5 points each</td>
<td>50</td>
</tr>
<tr>
<td>Field Experience Products</td>
<td>200</td>
</tr>
<tr>
<td>Group Assignment &amp; Presentation</td>
<td>100</td>
</tr>
<tr>
<td>Math and Science Bibliography</td>
<td>25</td>
</tr>
</tbody>
</table>

Total Points 475

428 – 475 = A
380 – 427 = B
333 – 379 = C
285 – 332 = D
< 284 = F

PLAGIARISM POLICY: “To represent written work taken from another source as one’s own is One plagiarism. Plagiarism is a serious offense. The academic work of a student must be his/her own. must give any author credit for source material borrowed from him/her. To lift content directly from a source without giving credit is a flagrant act. To present a borrowed passage without reference to the source after having changed a few words is also plagiarism” (pg 27, Western Kentucky University Undergraduate Catalog 2003-2005). This policy also applies to images taken from sources and created by the student. Any act of plagiarism on part of the student will result in a failing grade for the assignment.

ATTENDANCE POLICY: Students are expected to attend class regularly and participate in weekly discussions and assignments.
DISABILITIES ACCOMODATIONS STATEMENT: In compliance with university policy, students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Office for Student Disability Services in DUC A-200 of the Student Success Center in Downing University Center.

UNIVERSITY POLICY FOR FIELD EXPERIENCES OR OBSERVATIONS: Western Kentucky University implemented a policy in August, 2002 that requires all students to have a criminal background check, a physical and a TB Skin test on file in the Office of Teacher Services before they can begin field experiences or observations. See attached document from Office of Teacher Services.