Course Syllabus

Department : Child Development
Course Title : Math and Science for Early Childhood
Section Name : CDEC_2307_WB
Start Date : 08/27/2012
End Date : 12/10/2012
Modality : ON-LINE
Credits : 3

Instructor Information

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Course Description

An exploration of principals, methods, and materials for teaching childen math and science concepts throught discovery and play. Applies scientific approach of problem solving and creative thinking to a child's world. Includes how to make or select imexpensive, simple science and /or math materials. Emphasizes how to write and present age appropriate sciences and/or math activities on subjects such as animals, plants, electricity, five senses, measurement, shapes, sizes, numbers, symbols, etc. Also includes critia for arranging a science/discovery learning area in a classroom.

Prerequisites/Corequisites

None

ICO's

1,2,3,4,5,6

Course Objectives

1. Relate the sequence of cognitive development to the acquisition of math and science concepts.

   a. Summarize the sequential development of mathematical concepts.

b. Outline appropriate science concepts for children.

c. Describe how the development of mathematical concepts promotes children=s thinking skills.

d. Explain how to promote children=s cognitive development and understanding of their world through active, hands-on exploration of science concepts and processes.

e. Compare theories of cognitive development as they relate to math and

science.

f. Summarize how brain development affects concept formation.

g. Compare gender similarities and differences in the acquisition of math and science concepts.

2. Describe the scientific process and its application to the early childhood indoor and outdoor learning environments.

a. Explain how to encourage all children to view themselves as competent scientific explorers.

b. Describe ways to promote all children=s ability to think scientifically (e.g., by providing opportunities to observe, describe, classify and order).

c. Summarize ways to nurture all children=s natural curiosity by encouraging them to explore and make discoveries about their world (e.g., by using their senses to gain information, draw conclusions and report outcomes).

3. Develop strategies which promote thinking and problem-solving skills in children.

a. Explain how instructional methods involving the use of various types of thinking (e.g., exploration, discovery learning, problem solving) can enhance children=s mathematical and scientific understanding.

b. Describe how to integrate curriculum content through a variety of learning experiences so children make connections across disciplines.

c. Explain techniques for integrating math and science throughout the

curriculum.

d. Plan developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help children develop intellectual curiosity, solve problems, make decisions and become critical thinkers.

e. Brainstorm strategies to encourage girls to feel competent in math and science.

4. Utilize observation and assessment as a basis for planning discovery experiences for the individual child.

a. Review a variety of assessment strategies.

b. Explain how assessment information is interpreted and used to provide developmentally appropriate learning activities.

c. Use a variety of assessment strategies to monitor children=s progress in achieving outcomes and planning learning activities.

5. Create, evaluate and/or select developmentally appropriate materials, equipment and environments to support the attainment of math and science concepts.

a. Evaluate children=s books, software, manipulatives, music, blocks and other materials which enhance math and science concepts for developmental appropriateness.

b. Describe how to create indoor and outdoor environments that encourage emergent numeracy and scientific literacy by offering children varied, meaningful and concrete learning experiences.

c. Discuss how technology can be philosophically and physically integrated to support development of math and science concepts in the curriculum.

d. Explore community resources, including cultural, available for enhancing math and science concepts.

e. Make and use developmentally appropriate, culturally diverse and nonsexist activities and materials to support development of specific math and science concepts.

f. Adapt math and science activities, materials, equipment and environments for children with special needs.

PLEASE PUT YOUR DEPARTMENT SPECIFIC INFORMATION IN THIS AREA

Required Readings/Materials

a)You must purchase the following ***required*** readings/materials:Charlesworth, Rosalind and Lind, karen K. Math and Science for Young Children, 7th Edition, Delar Publishing 2013

GRADING

1. Discussion Questions - There are 10 of them in total. You will click on the discussions thread located at the top left of this screen. Once in, click on the button that reads Forum. Copy the discussion question you are ready to answer. Then click Create Forum. Title the name of your discussion question, paste the question and then proceed to answer the question. Once you have answered at least seven sentences, click on the word Submit. I, nor the class, will be able to read your response. This assignment is your participation grade and is important to have completed by the due date. Each question is worth 20 points and are due on the following dates:

DQ1 9/4/12
DQ2 9/11/12
DQ3 9/18/12
DQ4 9/25/12
DQ5 10/2/12
DQ6 10/9/12
DQ7 10/16/12
DQ8 10/23/12
DQ9 10/30/12
DQ10 11/6/12 (200 points)

2. Test #1 is due 10/2/12 (100 points)

3. Test #2 is due 11/6/12 (100 points)

4. Observation is due 10/9/12 (100 points)

5. Lab Hours due 11/6/12 (200 points)

6. Math and Science Activities are due 10/23/12 (100 points)

7. Final is due 11/27/12 (200 points)

SPECIAL NEEDS Odessa College complies with Section 504 of the Vocational Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990. If you have any special needs or issues pertaining to your access to and participation in this or any other class at Odessa College, please feel free to contact me to discuss your concerns. You may also call the Office of Disability services at 432-335-6861 to request assistance and accommodations.

Expectations for Engagement – Online Learning

To help make the web-based learning experience fulfilling and rewarding, the following Expectations for Engagement provide the parameters for reasonable engagement between students and instructors for the online learning environment. Students and instructors are welcome to exceed these requirements.

Reasonable Expectations of Engagement for Instructors

1. As an instructor, I understand the importance of clear, timely communication with my students. In order to maintain sufficient communication, I will
    - provided my contact information at the beginning of the syllabus;
    - respond to all messages within 24 hours if received Monday through Thursday and within 48 hours if received Friday through Sunday; and,
    - notify students of any extended times that I will be unavailable and provide them with alternative contact information (for me or for my supervisor) in case of emergencies during the time I'm unavailable.

2. As an instructor, I understand that my students will work to the best of their abilities to fulfill the course requirements. In order to help them in this area, I will
    - provide clear information about grading policies and assignment requirements in the course syllabus, and
    - communicate any changes to assignments and/or to the course calendar to students as quickly as possible.

3. As an instructor, I understand that I need to provide regular, timely feedback to students about their performance in the course. To keep students informed about their progress, I will
    - post grades for discussion postings within one week of the discussion thread closing.
    - provide grades for major assignments within 2 weeks of the due date or at least 3 days before the next major assignment is due, whichever comes first.

Reasonable Expectations of Engagement for Students

1. As a student, I understand that I am responsible for keeping up with the course. To help with this, I will
    - line up alternative computer and internet access in case my primary computer crashes or my internet services is unavailable;
    - recognize that the college provides free wi-fi and computer labs during regular campus hours to help me with accessing my course; and,
    - understand that my instructor does not have to accept my technical issues as a legitimate reason for late or missing work if my equipment or service is unreliable.

2. As a student, I understand that it is my responsibility to communicate quickly with the instructor any issue or emergency that will impact my involvement with or performance in the class. This includes, but is not limited to
    - getting "kicked off" of the system during tests or quizzes;
    - having trouble submitting assignments; and
    - dealing with a traumatic personal event.

3. As a student, I understand that it is my responsibility to understand course material and requirements and to keep up with the course calendar. While my instructor is available for help and clarification, I will
    - seek out help from my instructor and/or from tutors;
    - ask questions if I don't understand; and,
    - access my course several times during the week to keep up with assignments and announcements.

Grading Policy

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Learning Resource Center (Library)

The Library, known as the Learning Resources Center, provides research assistance via the LRC's catalog (print books, videos, e-books) and databases (journal and magazine articles). Research guides covering specific subject areas, tutorials, and the "Ask a Librarian " service provide additional help.

Student E-mail

Please access your Odessa College Student E-mail, by following the link to either set up or update your account: http://www.odessa.edu/gmail/. **All assignments or correspondence will be submitted using your Odessa College email.**

Student Portal

Please access your Odessa College Student E-mail, by following the link to either set up or update your account: http://www.odessa.edu/gmail/. **All assignments or correspondence will be submitted using your Odessa College email.**

Technical Support

For Blackboard username and password help and for help accessing your online course availability abd student email account contact the Student Success Center at 432-335-6878 or online at https://www.odessa.edu/dept/ssc/helpdesk_form.htm.

Important School Policies

For information regarding student support services, academic dishonesty, disciplinary actions, special accommodations, or student's and instructors' right to academic freedom can be found in the Odessa College Student Handbook.