**SCIENCE – Early Childhood**

**Instructor:** **Email:**

**Phone:** **Office:**

**Class Schedule: Office Hours:**

**Course Description:**

This is an introductory course designed to instruct Early Childhood Educators and prospective teachers develop an awareness of the importance of science curriculum and design lesson plans that guide young children in science investigation. Activities in this course will pertain to life science, physical science, earth and environmental science. The process of integrating science with other curriculum areas will be included in writing of developmentally appropriate lesson plans. Investigation will include the use of observation and exploration skills, problem solving and the organizing of information.

## Required Reading:

Selly, P. (2012). *Early childhood activities for a greener earth*. St. Paul, MN: Redleaf press

Martin D. (2000). *Constructing early childhood science*. Independence, KY: Cengage Learning.

**Other readings from:**

Chaille, C. & Britain L. (2002). *The Young Child as Scientist: A Constructivist Approach to Early Childhood Science Education (3rd ed.)*. Upper saddle River, NJ: Pearson Education, Inc.

**Online Resources:**

* National Association for the Education of Young Children. Teaching Young Children (NAEYC). Developmentally Appropriate Practice and Play Video

 [www.naeyc.org/tyc/next/video/dap](file:///%5C%5Cgroupr.wou.edu%5Cgroupr%5Ctri%5CTrain%5CProject%20PEPI%202011-2015%5CSyllabi%5CPAPI%20MODEL%20SYLLABI%5CArticulation%20Summit%202014%5Cwww.naeyc.org%5Ctyc%5Cnext%5Cvideo%5Cdap)

* Division for Exceptional Children (DEC). Recommended Practices Video

<http://www.decrecpractices.org/>

* Division for Exceptional Children and National Association for the Education of Young Children: Joint Position Statement (2009):

<http://www.naeyc.org/files/naeyc/file/positions/DEC_NAEYC_EC_updatedKS.pdf>

* Creative Curriculum

<http://teachingstrategies.com/curriculum/>

* Highscope

<http://highscope.org/Content.asp?ContentId=1>

* Early childhood inclusion: A joint position statement

<http://www.naeyc.org/files/naeyc/file/positions/DEC_NAEYC_EC_updatedKS.pdf>

* Preparing Early Childhood Professionals for Inclusion (PEPI)

<http://teachingresearchinstitute.org/pages/show/project-pepi>

**Course Format:**

This class will include readings, hands-on active learning, small and large group discussion, individual reflective journaling, individual writing and presentations.

**Course Outcomes by National and State Standards:**

CEC = Council for Exceptional Children

DEC = Division for Early Childhood

INTASC = Interstate New Teacher Assessment Consortium

#### NAEYC = National Association for the Education of Young Children

ODE= Oregon Department of Education

Students will be able to:

1. Apply first-hand knowledge of the wide variety of experiences available to the young child in the area of science in inclusive environments: NAEYC Std. 1 ,4, 5; DEC Std. 2, 3.

2. Describe the teacher’s role in planning developmentally appropriate science activities and lesson plans: NAEYC Std. 1, 5; DEC Std. 2.

4. Present, extend, and evaluate science activities, including activities that have accommodations or adaptations for all children. NAEYC Std. 3, 5; DEC Std. 5, 7, 8.

5. Describe commonalities between math and science. NAEYC Std.1, 4; DEC Std. 3, 4.

6. Promote young children’s concept development through problem solving. NAEYC Std. 1, 4, 5; DEC Std. 2, 3.

7. Develop skills in planning for science investigation. NAEYC Std. 1,4; DEC Std. 7

8. Develop an awareness of fundamental concepts of science. NAEYC Std. 1, 4; DEC Std. 7.

Student Inclusion Competencies:

1. Demonstrate knowledge of typical and atypical child development. (DEC, NAEYC, ODE)
2. Describe the characteristics of children with various learning needs in inclusive settings. (DEC, CEC, NAEYC)
3. Apply current research on child development across all areas of development, including temperament and play, to implement recommended practices in inclusive settings. (DEC, ODE)
4. Develop, implement, and evaluate learning experiences and strategies with respect and consideration for the diversity of culture, class, and ability of young children and their families. (DEC, NAEYC, ODE)
5. Apply evidenced-based practices and current technology to address the child's needs. (DEC)
6. Use systematic observations, documentation, and other effective assessment strategies in a responsible way, in partnership with families and other professionals, to positively influence children's development and learning. (DEC, NAEYC, ODE)

***Tentative Course Schedule\*\* Based on a 8 week course meeting 2 times a week***

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| **Week** | **Activities** | **What's Due** |
| 1  | IntroductionsReview course syllabus & expectationsConcept Development in Science1. How concepts develop
 | Read both text: chapters 1 and 2  |
| 2 | B. Promoting young children’s concept development through problem solvingC. The basics of scienceD. Inclusive planning for science investigations | Read both text chapters 3, 4 and 5 |
| 3 | Fundamental Concepts in ScienceA. Language and concept formationB. Integrating the science throughout the early childhood curriculum | Read both text chapters 6 and 7 |
| 4 | C. Developmentally appropriate science applications for all young childrenOverview of Science Areas of StudyA. Life scienceB. Physical scienceC. Earth and space science | Read both text chapters 8 and 9**Due: Science Field Exploration** |
| 5 | D. Environmental scienceE. Health and nutrition The Science EnvironmentA. Materials and resources for scienceB. Fieldtrips for science discovery | Read chapters 10, 11,12 and 13 from *Constructing early childhood science* |
| 6 | C. Creating opportunities for classroom discoveryD. Code of practice on pets and animals in schools | **Due: 5 information books to help with curriculum development** |
| 7 | The Science CurriculumA. Webbing to develop curriculumB. Selecting science activity plans for young children | Read chapters 14,15, and 16 from *Constructing early childhood science* |
| 8 | Teaching process skills in science investigation:Observation ComparingCounting ClassifyingDefining CommunicatingHypothesizing PredictingTesting ExperimentingD. Guide young children in collecting and sorting objects | **Due: 5 children’s storybooks** Read chapters 17,18,19 and 20 from *Constructing early childhood science* |
| 9 |  Involving Parents and Community A. Parent newslettersB. Fieldtrip involvementC. Resource sharingD. Science eventsE. Community visitors | Read chapters 21, 22 and 23 from *Constructing early childhood science* |
| 10 | * Wrapping up discussions
* Complete post-assessment
* Final Presentations
 | **Due: Science Activity Center 1st group** |
| Finals Week | * Final Presentations
 | **Due: Science Activity Center 2nd group** |