

**GRANDE PRAIRIE REGIONAL COLLEGE
EARLY LEARNING AND CHILD CARE**

CD2050

SCIENCE, MATH AND SOCIAL KNOWLEDGE

SEMESTER: Fall 2008

CREDITS: 3

HOURS: 45

DATES: Sept. 8 – Nov. 5

DAYS: Mondays & Wednesdays

TIMES: **Monday** 9:00 – 11:30 **LOCATION:** H135

Wednesday 9:00 – 11:30 **LOCATION:** B303

INSTRUCTOR: Jane Howes

PHONE: 539 2045

OFFICE: H129

Email: jhowes@gprc.ab.ca

OFFICE HOURS: posted or by appointment

COURSE DESCRIPTION:

This course introduces students to science, mathematical and social knowledge. The course emphasis is on integrating social, physical and logical mathematical experiences in the preschool child's environment. Students learn to use developmentally appropriate curriculum to facilitate the young child's construction of knowledge in these areas.

PREREQUISITES:

Successful completion of the first year or consent of the department.

TEXT: None

ADDITIONAL MATERIALS AND EXPENSES:

You may incur photocopying expenses and expenses for projects and assignments.

OBJECTIVES:

On successful completion of this course, you should be able to:

- describe the terms physical, social and logical mathematical knowledge and the ways these types of knowledge are acquired .
- describe young children's development of math, science and social studies skills and concepts.
- provide appropriate environments, materials, and interactions to
- promote children's development of math, science and social studies skills and concepts

- demonstrate an understanding of antibias curriculum in early childhood settings
- demonstrate the ability to provide a curriculum that reflects an antibias approach to curriculum planning

TEACHING METHODS:

Lectures will incorporate A.V. materials, discussion, in and out of class activities and assignments.

GRADING POLICY:

A final grade of D (1.0) must be obtained in order to pass this course. The final grade is base on: Assignments (90%), Attendance/Participation (10%). Assignment and final grades will be based on the following 4point Grading system:

Evaluation

The Human Services Department uses the alpha grading system as outlined below:

ALPHA GRADE	4-POINT EQUIVALENCE	DESCRIPTOR
A+	4.0 (90- 100)	Excellent
A	4.0 (85-89)	
A-	3.7(84-80)	First Class Standing
B+	3.3 (79-75)	
B	3.0 (74- 71)	Good
B-	2.7(70-66)	
C+	2.3 (67-69)	Satisfactory
C	2.0(64-66)	
C-	1.7(60-63)	
D+	1.3 (55 59)	Poor
D	1.0 (50 -54)	Minimal Pass
F	0.0 (49 – 0)	Failure

CLASS POLICIES:

Students should be familiar with the students' rights and responsibilities found in the College calendar.

It is the right of the student and of the instructor to a favorable learning/teaching environment. It is the responsibility of the student and the instructor to engage in appropriate adult behaviors that positively support learning. This includes, but is not limited to, treating others with dignity and respect. The College expects intellectual honesty from its students. Intellectual honesty demands that the contribution of others be acknowledged. To do less is to cheat. Intellectual dishonesty undermines the quality of academic activity and accordingly, the College has adopted appropriate penalties for student misconduct with respect to plagiarism and cheating. Penalties are levied according to the degree of the infraction. Students who are unsure whether a particular course of action might constitute plagiarism are advised to consult with the instructor. In addition to these specific College policies, understand the following class policies:

- Regular attendance and active class participation help you understand the content and be a successful student.
- Absence from 20% and over of the class hours will result in a grade of 0 for attendance/participation.
- Assignments are due in class or before 4:30 on the assignment due date.
- Late assignments will be deducted an initial 10% and 1% each day late, Assignments will receive a grade of 0% after 10 days late.
- All work should be typewritten (or neatly handwritten in dark ink) and double spaced, single sided.
- Projects with other students require your active involvement and contribution.
- Graded assignments will normally be returned within two weeks.

Important dates:

The last day to withdraw from this course with full refund of tuition is September 10.

The last day to withdraw from this course with permission (W is assigned by the Registrar's office) is November 6.

Changes to this course outline will be discussed with you in class.

ASSIGNMENTS: Four assignments will be completed in the class weeks.

Assignment #1: weight 30

Compile materials or make a pedagogical learning material that promotes science and or math and language development. There will be a lab in the Children's Centre where you will introduce your materials to small groups of children and observe and discuss what the children are learning when playing with your pedagogical learning materials.

Due Date: Sept. 24

Assignment #2: weight 25

Due Date: Oct. 1

You will submit plans for one learning center with descriptions of the materials and experiences that will support children's acquisition of math concepts and skills. Teacher made materials or digital pictures of these materials if applicable must be submitted along with the plans .

Assignment #3: weight 25

Due Date: October 18

You will submit plans for one learning center with descriptions of the materials and experiences that support children's acquisition of science concepts and skills. science experiences appropriate for a group of children age 3 to 5 years. Teacher made materials or digital pictures of these materials, if applicable must be submitted along with the plans .

Assignment #4: weight 10

Due Date: October 30

Collect a minimum of 10 picture books appropriate for preschool children. The books must depict people of a variety of different racial or cultural backgrounds and portray children realistically in contemporary settings.

Submit an annotated bibliography that includes brief descriptions of specific characteristics that make the book appropriate for preschool children and how it will contribute to their development. Submit the books and the bibliography.

DATE TOPIC ASSIGNMENT

The following course schedule is tentative and subject to revision:

Assignment dates can be revised to best meet student needs.

<u>DATE</u>	<u>TOPIC/ Assignment</u>	Readings/Assignments
Sept 8/10	Intro. to CD2050 What is physical knowledge? What is logical mathematical knowledge?	Children as Constructors of Knowledge. How do Children Learn by handling objects? ECD Math: Make it Manipulative.
Sept 15/17	Math Concepts and Experiences	
Sept 22/24	Math Concepts and Experiences Sept 22 lab to work on assignment #1	Assignment #1 in CC Sept 24 9-10:30 (set up 8:30 -9:00)
Sept 29/Oct 1	Math Concepts and Experiences Sep 29 lab for assignment #2 Oct 1 lab for assignment #2	Submit math centre assignment #2 latest 4pm.Friday Oct 3.
Oct 6/8	Science Concepts and Experiences	Conversational Science 101 Science is Everywhere. Physics is fun.
Oct 15	Science Concepts and Experiences	
Oct 20/22	Science Concepts and Experiences	Oct 20 lab for assignment #3 Submit science assignment: 4pm.Friday Oct 24.
Oct 27/29	Oct 27 Social knowledge/awareness of stereotyping and developing gender equality in similar situations.	Oct. 29 Social knowledge Assignment #4 Share books with peers

**RESOURCES
FOR
CD2050 SCIENCE, MATH AND SOCIAL KNOWLEDGE**

_____ (1993). *Creative Teaching in Early Childhood Education*. Toronto, ON: Harcourt, Brace Javonovich

Baratta Lorton M. (1972). *Work jobs, activity centered learning for early childhood education*. Don Mills, ON: Addison Wesley

Benish, D. (1977). *Water, water everywhere: science through water play*. Lewisville, NC: Kaplan Press

Canady, R. & Raines, S. (1989). *Story stretchers and activities to expand children's favorite books*. Beltsville, MD: Gryphon House

Charlesworth, R. & Radeloff. (1978). *Experiences in Math for Young Children*. Albany, NY: Delmar

Derman-Sparks, L. (1989). *Antibias curriculum: tools for empowering young children*. Washington, DC: NAEYC

Fleming, B. & Hamilton, D. (1977). *Resources for Creative Teaching in Early Childhood Education*. New York, NY: Harcourt Brace Jovanovich

Fleming, B. et al. (1993). *Creative teaching in early childhood education: a sourcebook for Canadian educators and librarians*. Toronto, ON: Harcourt Brace Jovanovich

Granovetter, F. & James, J. (1989). *Sift and shout: sand play activities for children ages 16*. Lewisville, NC: Kaplan Press

Harlan, J. & Rivkin, M. (1996). *Science experiences for the early childhood years: an integrated approach*. Englewood Cliffs, NJ: Merrill

Hendrick, J. & Chandler, K. (1993). *The Whole Child Canadian 6th ed*. Scarborough, ON: Prentice Hall

James, J. (1987). *Waterworks: water play activities for children age 16*. Lewisville, NC: Kaplan Press

Lind, K. (1991). *Exploring Science in Early Childhood: a developmental approach*. Albany, NY: Delmar

Macdonald, S. (1996). *Squish, sort, paint & build: over 200 easy learning center activities*. Beltsville, MD: Gryphon House

Miller, K. (1984). *Things to do with Toddlers and Two's*. Chelsea, MA: Telshare Publishing

Miller, K. (1989). *The Outside Play and Learning Book*. Chelsea, MA: Telshare Publishing

Mitchell, A. & David, J. (eds). (1992). *Explorations with young children: a curriculum guide from the Bank Street College of Education*. Mt. Rainier, MD: Gryphon House

Moomaw, S. & Hieronymus, B. (1995). *More than Counting: Whole math activities for preschool and kindergarten*. St. Paul, MN: Redleaf Press

Moomaw, S & Hieronymus. (1997). *More than Magnets: Exploring the Wonders of Science in preschool and kindergarten*. St. Paul, MN: Redleaf Press

Moomaw, S. & Hieronymus, B. (1999) *Much More than Counting: Math activities for preschool and kindergarten*. St. Paul, MN: Redleaf Press

Seefeldt, C. & Galper, A. (2000). *Active Experiences for Active Children: Social Studies*. Upper Saddle River, NJ: Merrill

Shaw, J. & Blake, S. (1998). *Mathematics for Young Children*. Englewood Cliffs, NJ:Prentice Hall

Smith, S. (2001). *Early Childhood Mathematics*, 2nd ed. Needham Heights, MA: Allyn & Bacon

Taylor, B. (1993). *Science Everywhere: opportunities for very young children*. Orlando, FL:Harcourt Brace Jovanovich

Waite Stupiansky, S. (1997). *Building Understanding Together: a constructivist approach to early childhood education*. Albany, NY: Delmar

York, S. (1991). *Roots and Wings: affirming culture in early childhood programs*. St. Paul, MN: Toys 'n Things Press

PERIODICALS:

Young Children

Day Care and Early Education

Child Care Information Exchange

WEB SITES

www.redding.com

www.headstartinfo.org/publications

www.npin.org

www.nccic.org
www.earlychildhood.com
www.scholastic.com
www.bubble links
www.bubbles.org/solutions/
www.kidsolr.com/science/page17.html
www.kids.net.au/kidscategories/Kids_and_Teens__School_Time/Science/Physics
homeschooling.gomilpitas.com/explore/Explore.htm
http://volcano.und.nodak.edu/
www.sciencebob.com
www.trip1.org/science.htm
www.nsta.org/elementaryschool