GRANDE PRAIRIE REGIONAL COLLEGE
EARLY LEARNING AND CHILD CARE

CD2050
SCIENCE, MATH AND SOCIAL KNOWLEDGE

SEMESTER: Fall 2007-2008
CREDITS: 3
HOURS: 45
DATES: Sept. 5 – Nov. 2
DAYS: Tuesdays & Thursdays
TIMES: 9:00 – 11:50 & 8:30 – 11:20
LOCATION: H 135
INSTRUCTOR: Karen Kennedy
PHONE: 539-2040
OFFICE: H210
Email: kkennedy@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 first year or consent of the department.

TEXT: None
Access to the Internet is strongly recommended. Blackboard will be used for postings. To access Blackboard, go to Blackboard.gprc.ab.ca, login and click on Science, Math and Social Knowledge.

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 anti-bias curriculum in early childhood settings
- demonstrate the ability to provide a curriculum that reflects an ant-bias 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 4-point grading system:

Alpha Grade	4-point equivalence	Percentage
A+	4.0	90 - 100
A	4.0	85 - 89
A-	3.7	80 - 84
B+	3.3	76 - 79
B	3.0	73 - 75
B-	2.7	70 - 72
C+	2.3	67 - 69
C	2.0	64 - 66
C-	1.7	60 - 63
D+	1.3	55 - 59
D	1.0	50 - 54
F	0.0	0 - 49

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, including weekends. 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. Group work will include peer and self-evaluations as well as an assigned grade for the project.

- Graded assignments will normally be returned within two weeks.

- The last day to withdraw from this course with full refund of tuition is _____
  The last day to withdraw from this course with permission (W is assigned by the Registrar's office) is _____

- 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
Portfolio
Due Date: Varying
Throughout the semester you will submit regular portfolio tasks. These may consist of any or all of the following:
- responses to readings and class discussions
- presenting concepts discussed in class to classmates
- completing short quizzes
- observations of children
- and tasks which may include independent research and reading.
Each submission will be graded. A minimum of 5 tasks will be assigned throughout the class weeks.

Assignment #2: weight 25
Due Date: Sept. 27
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 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 3-5 years.

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.

TENTATIVE SCHEDULE

This is a *tentative* schedule of the topics and assignment due dates. Changes to the schedule based on your needs or mine will be discussed with you in class.

DATE	TOPIC	ASSIGNMENT
Sept. 6	Intro. to CD2050	
Sept. 11	What is physical knowledge? What is logical-mathematical knowledge?	Task #1
Sept. 13	Math Concepts and Experiences	
Sept. 18		Task #2
Sept. 20		
Sept. 25		
Sept. 27		Assignment #2
Oct. 2	Science Concepts and Experiences	Task #3
Oct. 4		
Oct. 9		Task #4
Oct. 11		
Oct. 16		
Oct. 18		Assignment #3
Oct. 23	What is Social Knowledge?	Task #5
Oct. 25		
Oct. 30		Assignment #4
Nov. 1	Last Class	

RESOURCES
FOR
CD2050 SCIENCE, MATH AND SOCIAL KNOWLEDGE

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

Baratta-Lorton, M. (1972). *Workjobs, 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). *Anti-bias 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 1-6*. 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

Isbell, R. (). *The Complete Learning Center Book.* Beltsville, MD: Gryphon House

James, J. (1987). *Waterworks: water play activities for children age 1-6*. 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

http://www.pbs.org/parents/earlymath/prek_flash.html Early Math Milestones

http://teacher.scholastic.com/products/ect/mathconcepts.htm Development of Mathematical Concepts

http://teacher.scholastic.com/lessonrepro/lessonplans/ect/curric0198.htm Curriculum Builders

http://www.ed.gov/pubs/EarlyMath/index.html Math Activities: Booklet

http://www.mothergooseprograms.org/math_science_resources.php Math and Science resources

http://www.achievebc.ca/downloads/pdf/MathForFamilies.pdf Math for Families: Activities

http://www.meddybemps.com/7.026.html Develop an understanding of Math Concepts

http://www.earlychildhoodnews.com/earlychildhood/articles.aspx?ArticleID=195 Early Childhood News: Math & Science articles

http://www.earlychildhoodnews.com/page2.aspx Early Childhood News: Articles

http://ecap.crc.uiuc.edu/cgi-bin/iel/searchiel.cgi Articles

http://www.ghbooks.com/activity/ Gryphon House: Free Activities

www.perpetualpreschool.com Activities

www.preschoolrainbow.org Activities

Videos on the Net

http://www.aplaceofourown.net/watch_video.php?type=field&id=195&pos=0&rate=hi&player=rp **Math in Dramatic Play**

http://www.aplaceofourown.net/watch_video.php?type=field&id=313&pos=0 **Math Activities**

http://www.aplaceofourown.net/watch_video.php?type=field&id=99&pos=3&rate=hi&player=rp **Science at your Doorstep**

http://www.aplaceofourown.net/watch_video.php?type=field&id=171&pos=1&rate=hi&player=rp **Cooking as a Cultural Activity**