Massasoit Community College

Instructor:
Office:
Email:
Phone:
Office Hours:

Course: Mathematical Experiences for Early Childhood Educators
Course Number: MATH116-XX
Semester:
Classroom:
Day and Time:

Course Description: This course will provide methods and materials of instruction for caregivers and teachers of preschool children so that they can provide mathematical experiences confidently and knowledgeably. The course content will focus on the influences of Piaget, Bruner, Gagne and the psycho-educational aspects of how children learn (especially mathematics) and progress through the stages of development put forth by Praget. The student will also receive instruction in the areas of cognitive development most closely associated with mathematics; i.e. classification, one to one correspondence, seriation, and counting, and have the opportunity to observe and participate in model lessons and experiences.

Prerequisite: Introductory Algebra (MATH011) or written waiver by Placement testing results or Departmental Approval.

Required Text and Materials:

1. Charlesworth, Rosalind, *Experiences in Math for Young Children*, 6th edition, Cengage, 2011, ISBN: 9781111301507

Course Topics:

1) Define concept development.
2) Compare Praget's and Vygotsky's theories of mental development.
3) Explain how young children acquire knowledge.
4) Define three types of learning experiences: naturalistic, informal, and structured.
5) Develop methods and materials for the instruction of the following basic mathematical concepts:
   a) One-to-one correspondence
   b) Number sense and counting
   c) Logic and classifying
   d) Comparing
   e) Shape
   f) Spatial sense

    g) Parts and whole

    h) Language and concept formation

    i) Ordering, seriation and patterning

    j) Measurement

    k) Time

6) Implement problem solving as a process underlying all instruction in mathematics.

7) Create problem solving activities that emphasize the process rather than the final product.

8) Develop techniques of assessment through observation and interview.

9) Create record folders and portfolios as assessment tools to provide evidence of the student's efforts, progress and achievements.

10) Be knowledgeable about family involvement in the teaching of mathematics at home.

11) Evaluate and use age-appropriate software.

12) Use the internet to locate information about specific topics and issues related to mathematics and early childhood education.

Teaching Procedures: Each class will begin with a discussion of previously assigned homework problems. New material will be presented by using a variety of methods: lecture, discussion, and activities.

Instructional Objectives:

COURSE OUTCOMES	OUTCOMES ACTIVITIES
At the end of this course, students will be able to	
Demonstrate an understanding of how concepts are acquired and developed in mathematics in order to facilitate learning in young children.	1. Define concept development. (CT,OC,R,W) 2. Compare Piaget's and Vygotsky's theories of mental development. (CT,OC,R,W) 3. Explain how young children acquire knowledge. (CT,OC,R,W) 4. Define three types of learning experiences: naturalistic, informal, and structured. (CT,OC,R,W)

Demonstrate an understanding of the basic concepts of mathematics as building blocks of knowledge at the primary level in order to provide instruction for young children.	1. Develop methods and materials for the instruction of the following basic mathematical concepts: (CT,OC,QS,R,W)
	  a. One-to-one correspondence,
	  b. Number sense and counting,
	  c. Logic and classifying,
	  d. Comparing,
	  e. Shape,
	  f. Spatial sense,
	  g. Parts and whole,
	  h. Language and concept formation.

Devise and solve problems that promote concept development in order to replicate those concepts with young children.	1. Implement problem solving as a process underlying all instruction in mathematics. (CT,OC,QS,R,W) 2. Create problem solving activities that emphasize the process rather than the final product. (CT,OC,QS,R,W)
Assess the concept development level of young children in order to provide meaningful and appropriate learning activities.	1. Develop techniques of assessment through observation and interview. (CT,OC,R,W)
Use record folders and portfolios in order to record, report and evaluate students' progress.	1. Create record folders and portfolios as assessment tools to provide evidence of the student's efforts, progress and achievements. (CT,R,W)

Use appropriate activities to promote further development of fundamental concepts and skills related to primary mathematics curriculum in order to enrich student's understanding.	1. Plan higher level activities in the following areas for children who are near the stage of concrete operations: (CT,OC,QS,R,W)
	   a. Algebraic thinking,
	   b. Classification,
	   c. Shape,
	   d. Spatial relations,
	   e. Concrete whole number operations,
	   f. Graphs,
	   g. Symbolic level activities,
	   h. Quantities above 10.

Create components of a mathematics environment with regard to materials resources in order to enrich and extend experiences in the home.	1. Be knowledgeable about family involvement in the teaching of mathematics at home. (CT,OC,QS,R,W)
Make use of technology in order to provide increased opportunities for learning about science and applying mathematical skills and concepts.	1. Evaluate and use age-appropriate software. (CT,TS) 2. Use the internet to locate information about specific topics and issues related to mathematics and early childhood education. (CT,TS)

**Indicate the Core Competencies that apply to the outcomes activities and assessment tools: Critical Thinking (CT); technology skills (TS); oral communications (OC); quantitative skills (QS); reading (R); writing (W).

Basis for Student Grading: Grades for this course will be assigned as follows:

Grade	Average
A	93%-100%
A-	90%-92%
B+	87%-89%
B	83%-86%
B-	80%-82%
C+	77%-79%

Grade	Average
C	73%-76%
C-	70%-72%
D+	67%-69%
D	63%-66%
D-	60%-62%
F	0-59%

The grade you earn is the grade you will receive in this course. Grades are not negotiable. You will not be allowed to make up work, substitute alternative assignments, or submit extra assignments in order to improve your grade during the semester or after the semester ends.

Grades of incomplete are given only in situations when extenuating circumstances prevent a student from taking the final exam or fulfilling a specific requirement in the course. The grade of "I" cannot be used to give students additional time to complete course assignments in order to raise their grade.

Basis for Evaluating Student Performance: The grade for this course will be weighted based on the following categories:

- *Activity Box (30%)*: Activity Box containing the lesson plans for each mathematical concept (See #5 in Course Outline for the topics.)
- *Lesson Demonstrations (30%):* Demonstration of three lessons with appropriate materials.
- *Class Participation (30%):* Class participation in discussions and activities will be recorded in each class along with attendance.
- *Attendance (10%)*

There is no extra credit available in this course.

Tentative Test Schedule/Assignment(s) Schedule: Each student will be required to present a lesson to the class every five weeks i.e., three per semester.

Attendance: Attendance will be taken in every class. Regular attendance is necessary for success in any math class. Following an absence, the student is responsible for make-up work the first day he/she returns to class.

Accommodations Statement: Massasoit's Disability Services office provides accommodations to students who qualify for services based on a documented disability. Students interested in accessing classroom or testing accommodations must contact Disability Services directly. In an effort to avoid any lapse in services, new and returning students are encouraged to contact Disability Services at the beginning of each semester to receive an Accommodation Letter for the current

semester. Students on all campuses can contact Disability Services at 508-588-9100 X 2132 or by e-mail at DisabilityServices@massasoit.edu for further information or questions.

Title IX Statement: Massasoit Community College is committed to providing a safe learning and work environment for all. If you believe you have experienced discrimination, sexual harassment, sexual assault, domestic/dating violence, stalking, or retaliation, we encourage you to report it to *Yolanda Dennis, Chief Diversity Officer and Title IX Coordinator, Office of Diversity and Inclusion, at 508-588-9100, x1309 or* ODI@massasoit.edu. While you may talk to a faculty member, understand that as a "responsible employee" of the College, the faculty member must report what you share to the College's Title IX Coordinator. On and off campus resources and interim measures are available to assist you. Information about both of these policies can be found at www.massasoit.edu/title-ix and www.massasoit.edu/eeo. We are here to support you.

Academic Integrity: Academic dishonesty will not be tolerated. Please see the following URL for more information on the college's policies on academic integrity:

http://www.massasoit.edu/academics/policies/academic-honesty/index