

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER:	EEC 4219
COURSE TITLE:	Integrated Science and Math for Young Children
PREREQUISITE(S):	None
COREQUISITE(S):	None
STUDENT ADVISING NOTES:	Junior Level Status
CREDIT HOURS:	3
CONTACT HOURS/WEEK:	3
CONTACT HOUR BREAKDOWN:	
Lecture/Discussion:	3
Laboratory:	
Other/Field:	
FACULTY WORKLOAD POINTS:	3
STANDARDIZED CLASS SIZE ALLOCATION:	35

CATALOG COURSE DESCRIPTION: In this course students explore beginning sequential science and mathematical concepts for the appropriate stages of cognitive development of young children, focusing on ages 5 through 8. Integrated field experience required (minimum of 6 contact hours).

Charlesworth, R. & Lind, K.K. (1999), Math and Science for Young Children. Albany, NY: Delmar.

Bredenkamp, S., & Rosegrant, T. (1995). Reaching Potentials: Transforming Early Childhood Curriculum and Assessment, Volume 2. Washington, D.C.: National Association for the Education of Young Children.

SUGGESTED TEXT(S): (CONTINUED)

Duckworth, E. (1987). The Having of Wonderful Ideas and Other Essays on Teaching and Learning, New York: Teachers College Press. Kellogg, R. D., Cabin, A.A., Seefeldt, C., Barbour, N., & Souviney, R.J. (1996)

Integrating Mathematics and Science for Kindergarten and Primary Children, Englewood Cliffs, NJ: Merrill.

National Council of Teachers of Mathematics, (1989), Curriculum and Evaluation Standards for School Mathematics, Reston, VA: National Council of Teachers of Mathematics.

National Research Foundation, (1996), National Science Standards, Washington, D.C.: National Academy Press

Florida Sunshine State Standards

IMPLEMENTATION DATE:

Fall Term, 2009 (20101)

REVIEW OR MODIFICATION DATE:

COURSE TOPICS	CONTACT HOURS <u>PER TOPIC</u>
I. Theories of Learning A. Constructivism, Piaget B. Socio cultural, Vygotsky C. Multiple intelligences, Gardner	3
II. Planning A. Learning cycle B. Types of learning experiences C. Materials D. Assessment & its role in planning 1. methods of assessment: observation, interview 2. methods of documentation: checklists, rating scales, anecdotal notes, work samples, portfolios; rubrics	6
III. Adapting Instruction for Special Populations A. Linguistic diversity B. Cultural diversity C. Special needs D. Teaching strategies E. Modifying materials	6
IV. Appropriate Technology in the Classroom A. Appropriate software B. Critiquing software C. Using the internet D. Hyperstudio & other packages	6
V. Approaches to Integrated Curriculum & Standards A. Thematic units B. Using children's literature C. Project approach D. Overview of national mathematics standards (NCTM) E. Overview of national science standards (NSF) F. Sunshine state mathematics & science standards G. Local community expectations H. Family and community involvement	6

COURSE TOPICS (Continued)	CONTACT HOURS <u>PER TOPIC</u>
VI. Preoperational Mathematics	6
A. Number, rote & rational counting,	
B. Classification, shape, space, measurement,	
C. Graphing, patterns, language connection,	
D. Using Unifix cubes, pattern blocks, links,	
VII. Preoperational Science	3
A. Science process skills	
B. Science topics from the child's world: weather, human body, plants & life cycle, animals (pets) & life cycle	
VIII. Concrete Operational Mathematics	6
A. Operations (addition, subtraction, multiple, division),	
B. Fractions, place value, standard & metric measurement,	
C. Geometry, graphing,	
D. Using base ten blocks, Tangrams, standard units of measurement	
IX. Concrete Operational Science	3
A. Life, physical, earth & environmental sciences	
B. Units such as body systems, simple machines, recycling, water cycle	



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

<i>Section 1</i>	
COURSE PREFIX AND NUMBER: <u>EEC 4219</u>	SEMESTER CREDIT HOURS (CC): CONTACT HOURS (NCC): <u>3</u>
COURSE TITLE: <u>Integrated Science and Math for Young Children</u>	

Section 2

TYPE OF COURSE: (Click on the box to check all that apply)

<input type="checkbox"/> AA Elective	<input type="checkbox"/> AS Required Professional Course	<input type="checkbox"/> College Prep
<input type="checkbox"/> AS Professional Elective	<input type="checkbox"/> AAS Required Professional Course	<input type="checkbox"/> Technical Certificate
X Other <u>Upper level BS ECE</u>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7)	Apprenticeship	

Section 3 (If applicable)

INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES:

<input type="checkbox"/> Communications	<input type="checkbox"/> Social & Behavioral Sciences	<input type="checkbox"/> Mathematics
<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Humanities	

Section 4

INTELLECTUAL COMPETENCIES:

<input type="checkbox"/> Reading	<input type="checkbox"/> Speaking	<input type="checkbox"/> Critical Analysis	<input type="checkbox"/> Quantitative Skills	<input type="checkbox"/> Scientific Method of Inquiry
<input type="checkbox"/> Writing	<input type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy	<input type="checkbox"/> Ethical Judgment	<input type="checkbox"/> Working Collaboratively

<i>Section 5</i>	
LEARNING OUTCOMES	METHOD OF ASSESSMENT
Understand the principles of child development and the development of mathematics and science concepts in young children birth through age 8.	Students will be assessed through use of rubrics defining the standards for oral presentations and short reflective papers
Understand goal setting, planning, creating materials, implementing and assessing appropriate content in the area of mathematics and science for children 3 – 8.	Students will be assessed through use of rubrics defining the standards for oral presentations and short reflective papers
Understand that mathematical and science learning takes place in integrated learning experiences with concrete materials throughout the day in a variety of contexts.	Students will be assessed through lesson plans, group projects and presentations on curricular implementation

Section 5 (Continued)		
LEARNING OUTCOMES		METHOD OF ASSESSMENT
	Develop an awareness and understanding that all children have individual needs which include children who are learning challenged and those from diverse language and cultural backgrounds.	Students will be assessed through lesson plans, group projects and presentations on curricular implementation
	Develop an understanding of the importance of the integration of mathematical and science experiences at home with parents, in the community and at school/center.	Students will be assessed through rubrics defining the implementation of assessment or curricular projects during field based learning
	Implement appropriate curricular content and instructional strategies presented during the course in the field placement.	Students will be assessed through rubrics defining the standards for comprehensive portfolios or resource files on curriculum implementation
	Develop developmentally appropriate assessment and reporting techniques.	Students will be assessed through rubrics defining the standards for comprehensive portfolios or resource files on curriculum implementation
	Demonstrate the use of age appropriate software and technology.	Students will be assessed through rubrics defining the standards for comprehensive portfolios or resource files on curriculum implementation

Section 6

Name of Person Completing This Form: Dr. Carole Byrd, Associate Dean of Education

Date: February 20, 2009