ST. PETERSBURG COLLEGE
COLLEGE OF EDUCATION
"Preparing students to serve as effective, reflective and caring teachers."

COURSE SYLLABUS
EEC 4212
Math, Science and Technology For Preschool Education: Birth to Age 4

This syllabus course calendar and other attending documents are subject to change during the semester in the event of extenuating circumstances.

Course Prefix:	EEC 4212
Section #:	3963
Credit Hours:	Three Credits
Co-requisites:	EEC 4942
Pre-requisites:	Admission to Educational Studies BS and EEC 3204

Day, Time and Campus:	Monday	6:00-8:40pm	Clearwater
Modality:	Blended		
Professor:	Mary Harper, PhD		
Office Hours:	Refer to Instructor Page	http://www.spcollege.edu/instructors/id/1701	
Office Location:	Clearwater	NM-133	
Office Phone:	727-791-2480		
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ACADEMIC DEPARTMENT: College of Education

Dean:	Kimberly Hartman, Ph.D.	
Office Location & Number:	Tarpon Springs	BB 159

I. COURSE DESCRIPTION

This course presents the process of introducing science, technology, and math for young children to age 4. It includes planning and implementation of appropriate activities and development of methods and techniques of delivery, fostering an exploration of methods and materials for teaching young children math and science concepts and process skills through discovery and play. This course requires 15 field experience hours in an early childhood setting. 47 contact hours.

II. MAJOR LEARNING OUTCOMES

1. The student will relate the sequence of cognitive development to the acquisition of math and science concepts by:

   a. summarizing the sequential development of mathematical concepts.
   b. outlining appropriate science concepts for children.
   c. describing how the development of mathematical concepts promotes children's thinking skills.
   d. explaining how to promote children's cognitive development and understanding of their world through active, hands-on exploration of science concepts and processes.
   e. comparing theories of cognitive development as they relate to math and science.
   f. summarizing how brain development affects concept formation.
   g. compare gender similarities and differences in the acquisition of math and science concepts.

2. The student will describe the scientific process and its application to the early childhood indoor and outdoor learning environments by:

   a. explaining how to encourage all children to view themselves as competent scientific explorers.
   b. describing ways to promote all children's ability to think scientifically (e.g., by providing opportunities to observe, describe, classify and order).
   c. summarizing ways to nurture all children's natural curiosity by encouraging them to explore and make discoveries about their world (e.g., by using their senses to gain information, draw conclusions and report outcomes).

3. The student will develop strategies which promote thinking and problem-solving skills in children by:

   a. explaining how instructional methods involving the use of various types of thinking (e.g., exploration, discovery learning, problem solving) can enhance children's mathematical and scientific understanding.
   b. describing how to integrate curriculum content through a variety of learning experiences so children make connections across disciplines.
   c. explaining techniques for integrating math and science throughout the curriculum.
   d. planning developmentally appropriate methods that include play, small group projects, open-ended questioning, group discussion, problem solving, cooperative learning and inquiry experiences to help children develop intellectual curiosity, solve problems, make decisions and become critical thinkers.
   e. brainstorming strategies to encourage girls to feel competent in math and science.

4. The student will integrate observation and assessment as a basis for planning discovery experiences for the individual child by:

   a. planning for a variety of assessment strategies.
   b. predicting how assessment information is interpreted and used to provide developmentally appropriate learning activities.
   c. combining a variety of assessment strategies to monitor children's progress in achieving outcomes and planning learning activities.

5. The student will plan for developmentally appropriate materials, equipment and environments to support the attainment of math and science concepts by:

   a. evaluating children's books, software, manipulatives, music, blocks and other materials which enhance math and science concepts for developmental appropriateness.
   b. describing how to create indoor and outdoor environments that encourage emergent numeracy and scientific literacy by offering children varied, meaningful and concrete learning experiences.
   c. discussing how technology can be philosophically and physically integrated to support development of math and science concepts in the curriculum.
   d. exploring community resources, including cultural, available for enhancing math and science concepts.
   e. devising developmentally appropriate, culturally diverse and nonsexist activities and materials to support development of specific math and science concepts.
   f. adapting math and science activities, materials, equipment and environments for children with special needs.

III. REQUIRED TEXTBOOK(S), RESOURCES AND MATERIALS

A. Required Textbooks

Textbook(s)	Required : • *Math & Science for Young Children*, 7th Edition, Authors: Charlesworth & Lind, ISBN: 9781285329635 • *The Young Child & Mathematics*, Author: Copley, ISBN: 9780935989977
	Recommended: None

Students using **eBooks** must have access to the **eBooks** during class sessions.

B. Supplemental Material

Resources:	
Materials:	
Library:	http://www.spcollege.edu/libraries/

C. Technology

Technology is an essential tool for receiving and developing instruction. Students are expected to reference ANGEL continuously to assure all current content for class has been accessed. Additionally students are expected to be familiar or familiarize themselves with PowerPoint presentation methods. The instructor of this course frequently uses smart boards, ELMOs, power point, digital media, and web based resources to disseminate information and engage preservice learners and students.
All work must be submitted in a format compatible with Microsoft Word (e.g.: .doc, .docx, .rtf)

D. Supplies

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IV. COURSE REQUIREMENTS & EXPECTATIONS

A. School Based Hours Course Requirements

This course requires 15 hours of observation/participation in an appropriate classroom setting as approved by the Office of School Partnerships.

B. ALL Course Assignments

EEC 4212
Participation Labs
Reading Quizzes
Math/Science Journal Posts
STEM: Content in Context • STEM: Content in Context – Assessing Environment & Learning • STEM: Content in Context – Changing the Environment • STEM: Content in Context– Changing the Learning (the planning) • STEM: Content in Context – Changing Practice Part I • STEM: Content in Context – Changing Practice Part II
Service Learning Integrated Unit Plan • Unit Plan Overview • Three Implemented Lessons • Full Five Lessons Unit Lesson
Math/Science Lewis Lesson Study • Discussion Memo & Lesson Plan • Presentation • Written Reflection
Final Exam • Service Learning Virtual Field Trip Project • Chalk & Wire Submissions

UCC Assignments: *Teacher candidates must demonstrate UCC competencies and earn a 'C or above (at least 75%)' on all UCC assignments [FEAP, ESOL, FSAC, Reading Competencies (RC), and Additional Element] in order to successfully pass the course.*

FEAP Assignment Rubrics: *In addition to a 'C or above', a teacher candidate must also earn a 'minimum' score on the line item of the rubric for assignments aligned to FEAP standards. For example, a 3 (Progressing) or 4 (Target) is required in courses prior to final internship and a 4 (Target) is required for final internship in order to successfully pass the course.*

If the teacher candidate has not successfully demonstrated the UCC competency as stated above, he/she may have an opportunity (within the term) to work with the instructor to improve the understanding of the concept. The assignment must then be corrected and resubmitted, and will not receive a grade higher than a C. In the event of cheating or plagiarizing, see BOT Rule 6Hx23-4.72 for consequences.

Teacher candidates must upload into Chalk & Wire all FEAP, ESOL, and RC assignments (identified as Critical Reading Tasks) as denoted in the Uniform Core Curriculum Assessments table below.

*** Assignments labeled with an (*) denote required assignments that must be passed at 75%.**

For courses with lesson planning:
Adapting or modifying a lesson plan from an existing source (i.e., the internet) does not mean "copy and paste." It means that, if you use someone else's intellectual property for this purpose, you may read through the given source for ideas, but then rethink and rewrite the idea in your own words with your own modifications to meet the needs of the assignment. Anything adapted or used verbatim must be cited with credit given to the author(s). This includes specific citations on all supplementary materials (i.e., assignment sheets, graphic organizers, checklists) that are not originally your work. This applies to all COE lesson plans unless the instructor directly specifies otherwise.

V. SYLLABUS STATEMENTS COMMON TO ALL COE SYLLABI

A. COE SYLLABUS STATEMENTS
https://angel.spcollege.edu/AngelUploads/Files/larrea_miriam/SPC_Syllabus_Common_Statements_Master.htm

B. SPC SYLLABUS STATEMENTS
http://www.spcollege.edu/addendum/index.php

C. STUDENT ANGEL TUTORIALS
http://www.spcollege.edu/TSC/coe/links/Student_Angel_Tutorials.html

Each student must read all topics within this syllabus and the content of the links. If the student needs clarification on any items in the syllabus or linked statements, he/she should contact the course instructor.

If you remain enrolled after the drop date this signifies that you agree to abide fully by the parameters set in this syllabus and any syllabus addendum.

VI. CALENDAR AND TOPICAL OUTLINE

Sessions	Topics	Assignments	Due Dates

Course Overview	Course Description Major Learning Outcomes Structure of Course ANGEL Tutorial	• Start Here Quiz	Refer to ANGEL calendar
Module 1 Subunit 1.1	Concept Development in Math and Science	• M/S Curriculum Planning 1.1 Activity • Assignment 1.1 Service Learning - Defined	Refer to ANGEL calendar
Module 1 Subunit 1.2	Concept Development in Math and Science	• M/S Methods Analysis1.2 Activity • Quiz: Chapters 1-7 • Assignment 1.2: M/S Lewis Lesson Study	Refer to ANGEL calendar
Module 1 Subunit 1.3	Concept Development in Math and Science	• Current Issues & Methods in M\S Education 1.3 Activity • Assignment 1.3: STEM: Content in Context – Assessing Environment & Learning	Refer to ANGEL calendar
Module 2 Subunit 2.1	Fundamental Concepts & Skills	• M/S Curriculum Planning 2.1 Activity • Assignment 2.1 Service Learning – Unit Plan Overview	Refer to ANGEL calendar
Module 2 Subunit 2.2	Fundamental Concepts & Skills	• Quiz: Chapters 8-16 • M/S Methods Analysis 2.2 Activity • Assignment 2.2: M/S Lewis Lesson Study: Content and Discussion Memo	Refer to ANGEL calendar
Module 2 Subunit 2.3	Fundamental Concepts & Skills	• Current Issues & Methods in M\S Education 2.3 Activity • Assignment 2.3: STEM: Content in Context – Changing the Environment	Refer to ANGEL calendar
Module 3 Subunit 3.1	Applying Fundamental Concepts, Attitudes, Skills & Higher Level Activities	• M/S Curriculum Planning 3.1 Activity • Assignment 3.1 Service Learning – Application One	Refer to ANGEL calendar
Module 3 Subunit 3.2	Applying Fundamental Concepts, Attitudes, Skills & Higher Level Activities	• Quiz: Chapters 17-26 • M/S Methods Analysis 3.2 Activity • Assignment 3.2: M/S Lewis Lesson Study - Implementation	Refer to ANGEL calendar
Module 3 Subunit 3.3	Applying Fundamental Concepts, Attitudes, Skills & Higher Level Activities	• Current Issues & Methods in M\S Education 3.3 Activity • Assignment 3.3: STEM: Content in Context– Changing the Learning (the planning)	Refer to ANGEL calendar
Module 4 Subunit 4.1	Mathematic Concepts & Operations for Primary Grades	• M/S Curriculum Planning 4.1 Activity • Assignment 4.1 Service Learning – Application II	Refer to ANGEL calendar

Module 4 Subunit 4.2	Mathematic Concepts & Operations for Primary Grades	• Quiz: Chapters 27-32 • M/S Methods Analysis 4.2 Activity • Assignment 4.2 M/S Lewis Lesson Study Video submission	Refer to ANGEL calendar
Module 4 Subunit 4.3	Mathematic Concepts & Operations for Primary Grades	• Current Issues & Methods in M\S Education 4.3 Activity • Assignment 4.3: STEM: Content in Context – Changing Practice Part I	Refer to ANGEL calendar
Module 5 Subunit 5.1	Using Skills, Concepts, & Science in the Primary Grades	• M/S Curriculum Planning 5.1 Activity • Assignment 5.1 Service Learning – Application Three	Refer to ANGEL calendar
Module 5 Subunit 5.2	Using Skills, Concepts, & Science in the Primary Grades	• Quiz: Chapters 33-38 • M/S Methods Analysis 5.2 Activity • Assignment 5.2: M/S Lewis Lesson Study Reflection Paper	Refer to ANGEL calendar
Module 5 Subunit 5.3	Using Skills, Concepts, & Science in the Primary Grades	• Current Issues & Methods in M\S Education 5.3 Activity • Assignment 5.3: STEM: Content in Context – Changing Practice Part II	Refer to ANGEL calendar
Final Module	Final Review Module	• Postings to Chalk & Wire • Final Exam: Content and Application • Service Learning Virtual Field Trip Assignment	Refer to ANGEL calendar

VII. UNIFORM CORE CURRICULUM ASSIGNMENTS

There are no UCC assessment points/assignments in this course.