

ECE-911: Counting and Other Early Math Skills

Independent Study Online Course Syllabus

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Number of Graduate Semester Units: 3 units

Target Audience: Preschool/TK/K Teachers

Course Access: <https://connect.fresno.edu>

Course Description

This course will help you understand and make connections between counting as a foundational math concept and how it leads to and supports the development of later developing skills, including: number sequences, base ten number system, counting principles, cardinality, one to one correspondence, comparing, subitizing, and more. The developmental progression of counting and related skills in young children will be studied, as well as how counting extends into solving problems and story problems. Many video examples will be used to guide learning and give opportunity for personal self-reflection and application. This course can be completed with or without practical application in real classrooms. *The National Association for the Education of Young Children (NAEYC) Professional Standards and Competencies for Early Childhood Educators* will be utilized and applied in this course, as relative to developmentally appropriate practice and individualization for specific children when teaching early math skills.

The California Preschool Learning Foundations, Desired Results Developmental Profile and research/resources from the Stanford Development and Research in Early Math Education (DREME) Teacher Educator (TE) Network will be utilized in this course. Individuals not residing/teaching in the state of California can utilize their own standards or assessment tools for study and reflection within the course.

Note: Required book must be acquired separately.

Required Texts and Course Materials

Book: Carpenter, T., Franke, M., Johnson, N., Turrou, A., Wager, A. (2017). *Young Children's Mathematics*. Heinemann Publishing. ISBN: 9780325078120.
<https://www.heinemann.com/products/e07812.aspx>.

Note: Students are responsible for purchasing their own textbook, analyzing the content, and applying what they learned to the course assignments. You are welcome to purchase used, e-book, or new versions to save money. You can order the book directly from the publisher or from one of several discount aggregators (for example): <https://amazon.com>

Online Resources: Relevant online resources that support the course content and encourage further investigation will be available throughout the course assignments. Active hyperlinks are utilized throughout the course and will link to the appropriate information when clicked. These include videos, podcasts, worksheets, online activities, journal articles and other resources.

Canvas: This course will be delivered totally online. Canvas is a web-based learning management system (LMS) that provides students access to online resources, documents, videos, assignments, quizzes, forums, etc. Canvas is easy to learn and has a user-friendly interface.

Course Dates

Self-paced; students may enroll at any time and take up to one year, from the date of registration, to complete assignments. Students may complete assignments in no less than three weeks for a 3-unit course (one week per unit).

National Standards Addressed in This Course

National Association for the Education of Young Children (NAEYC) Professional Standards and Competencies for Early Childhood Educators

https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/position-statements/standards_and_competencies_ps.pdf

- Standard 1: Child Development and Learning in Context
- Standard 2: Family-Teacher Partnerships and Community Connections
- Standard 3: Child Observation, Documentation and Assessment
- Standard 4: Developmentally, Culturally, and Linguistically Appropriate Teaching Practices
- Standard 5: Knowledge, Application, and Integration of Academic Content in the Early Childhood Curriculum
- Standard 6: Professionalism as an Early Childhood Educator

Continuing Education Student Learning Outcomes (CE-SLO)

CE-SLO 1	Demonstrate proficient written communication by articulating a clear focus, synthesizing arguments, and utilizing standard formats in order to inform and persuade others, and present information applicable to targeted use.
CE-SLO 2	Demonstrate comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
CE-SLO 3	Reflect on their personal and professional growth and provide evidence of how such reflection is utilized to manage personal and professional improvement.
CE-SLO 4	Apply critical thinking competencies by generating probing questions, recognizing underlying assumptions, interpreting and evaluating relevant information, and applying their understandings to the professional setting.
CE-SLO 5	Reflect on values that inspire high standards of professional and ethical behavior as they pursue excellence in applying new learning to their chosen field.

CE-SLO 6	Identify information needed in order to fully understand a topic or task, organize that information, identify the best sources of information for a given enquiry, locate and critically evaluate sources, and accurately and effectively share that information.
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Course Student Learning Outcomes (C-SLO)

Student Learning Outcomes for This Course By the end of this course students will be able to:		National Standards Addressed*	CE-SLO Addressed**
C-SLO 1	Demonstrate knowledge of the connection between number sense and early counting skills.	NAEYC Standard 4	CE 1, 2, 6
C-SLO 2	Identify variations of children's counting abilities and the relation to their developmental progression.	NAEYC Standard 5	CE 3, 5
C-SLO 3	Apply knowledge of evidence-based practices to make decisions that support the development of each child.	NAEYC Standard 1	CE 1, 2, 4, 6
C-SLO 4	Learn to use the appropriate state framework to individualize learning opportunities based on student needs and abilities.	NAEYC Standard 3	CE 1, 2, 6
C-SLO 5	Describe "Cognitively Guided Instruction" and demonstrate understanding of classroom application.	NAEYC Standard 3, 5	CE 3, 4, 5

* Please refer to the section on **National Standards Addressed in This Course**

** Please refer to the section on **Continuing Education Student Learning Outcomes**

Topics, Assignments, and Activities

Module Title	Module Assignments and Activities	Points Possible for Each Assignment
Welcome Module	- Welcome Video - Course Syllabus - Introduce Yourself Forum	
Module 1 – Developing Learning Opportunities	- Read chapter 1 - Introduction - Read preschool curriculum frameworks 1.1 Assignment: Counting Collections Activity & Reflection 1.2 Forum: To Calendar or Not to Calendar Debate 1.3 Choice Project	15 pts 25 pts 40 pts
Module 2 – Counting	- Read Chapter 2 & 3 - Read preschool curriculum frameworks 2.1 Video Reflection Forum 2.2 Counting Lesson & Evaluation 2.3 Search & Source Activity: Counting	15 pts 30 pts 40 pts

Module Title	Module Assignments and Activities	Points Possible for Each Assignment
Module 3 – Extending Counting to Solve Problems	• Read Chapter 4 • Supporting videos • 3.1 Mid-Course Quiz • 3.2 Reflection Questions Choice • 3.3 Using Picture Books Activity • 3.4 Choice Forum	50 pts 15 pts 15 pts 15 pts
Module 4 – Solving Story Problems	• Read chapter 6 • Read preschool curriculum frameworks • 4.1 Does Charlotte Understand? • 4.2 Direct Modeling Guide Choice Assignment • 4.3 Chapter 6 Forum	10 pts 30 pts 15 pts
Module 5 – Mathematical Thinking	• Read Chapter 7 • Preschool curriculum frameworks reading • 5.1 Connections & Individualization • 5.2 Chapter 7 Forum • 5.3 Final Choice Assignment	30 pts 15 pts 50 pts
Course Wrap-up – Grading and Evaluation	• Final Reflection Forum • Course Evaluation • Course Completion Checklist • Grade Request / Transcript Request	
	TOTAL POINTS	410 pts

Grading Policies, Rubrics, and Requirements for Assignments

Grading Policies

- Assignments will be graded per criteria presented in the course rubrics.
- A = 90-100% and B = 80-89%, (anything below 80% will not receive credit.)
- The discernment between an A or a B letter grade is at the discretion of the instructor based on the quality of work submitted (see course rubrics).
- Coursework falling below a B grade will be returned with further instructions.
- All assignments must be completed to receive a grade and are expected to reflect the quality that teacher-training institutions require of professional educators. If completed assignments do not meet this standard, students will be notified with further instructions from the instructor.

Grading Rubrics

Grade	Percent	Description	Rubric
A	90-100%	Excellent	Meets all course / assignment requirements with significant evidence of subject mastery and demonstration of excellent graduate level professional development scholarship.

B	80-89%	Very Good	Adequately meets criteria for all course/assignment requirements - demonstrates subject competency with very good graduate level professional development scholarship.
NC	Below 80%	Unacceptable	Does not meet the minimum criteria for all course/assignment requirements and demonstrated little, if any, evidence of acceptable graduate level professional development scholarship.

Writing Requirements

- **Superior:** Writing is clear, succinct, and reflects graduate level expectations. Clearly addresses all parts of the writing task. Maintains a consistent point of view and organizational structure. Includes relevant facts, details, and explanations.
- **Standard:** Writing is acceptable with very few mistakes in grammar and spelling. Addresses most parts of the writing task. Maintains a mostly consistent point of view and organizational structure. Includes mostly relevant facts, details, and explanations.
- **Sub-standard:** Writing contains noticeable mistakes in grammar and spelling. Does not address all parts of the writing task. Lacks a consistent point of view and organizational structure. May include marginally relevant facts, details, and explanations.

Lesson Plan Requirements

- **Superior:** Instructional goals and objectives clearly stated. Instructional strategies appropriate for learning outcome(s). Method for assessing student learning and evaluating instruction is clearly delineated and authentic. All materials necessary for student and teacher to complete lesson clearly listed.
- **Standard:** Instructional goals and objectives are stated but are not easy to understand. Some instructional strategies are appropriate for learning outcome(s). Method for assessing student learning and evaluating instruction is present. Most materials necessary for student and teacher to complete lesson are listed.
- **Sub-standard:** Instructional goals and objectives are not stated. Learners cannot tell what is expected of them. Instructional strategies are missing or strategies used are inappropriate. Method for assessing student learning and evaluating instruction is missing. Materials necessary for student and teacher to complete lesson are missing.

Instructor/Student Contact Information

Throughout the course participants will be communicating with the instructor and their classmates on a regular basis using asynchronous discussion forums. Students are provided with instructor contact information in the event they want to make email or phone contact. In addition, students are encouraged to email or phone the instructor at any time. Students will also receive feedback on the required assignments as they are submitted.

Forums

Participation is an important expectation of this course and all online courses. Online discussions promote reflection and analysis while allowing students to appreciate and evaluate positions that others express. While students may not be engaging with the same students throughout this course, they will be expected to offer comments, questions, and replies to the discussion question whenever possible. The faculty role in the discussion forum is that of an observer and facilitator.

Coursework Hours

Based on the Carnegie Unit standard, a unit of graduate credit measures academic credit based on the number of hours the student is engaged in learning. This includes all time spent on the course: reading the textbook, watching videos, listening to audio lessons, researching topics, writing papers, creating projects, developing lesson plans, posting to discussion boards, etc. Coursework offered for FPU Continuing Education graduate credit adheres to 45 hours per semester unit for the 900-level courses. Therefore, a student will spend approximately 135 hours on a typical 3-unit course.

Services for Students with Disabilities

Students with disabilities are eligible for reasonable accommodations in their academic work in all classes. In order to receive assistance, the student with a disability must provide the Academic Support Center with documentation, which describes the specific disability. The documentation must be from a qualified professional in the area of the disability (i.e. psychologist, physician or educational diagnostician). Once documentation is on file, arrangements for reasonable accommodations can be made. For more information and for downloadable forms, please go to <https://www.fresno.edu/departments/disability-access-education>.

Plagiarism and Academic Honesty

All people participating in the educational process at Fresno Pacific University are expected to pursue honesty and integrity in all aspects of their academic work. Academic dishonesty, including plagiarism, will be handled per the procedures set forth in the Fresno Pacific University Catalogue and Handbook - <https://handbook.fresno.edu/graduate/academic-policies>

Technology Requirements

To successfully complete the course requirements, course participants will need Internet access, can send and receive email, know how to manage simple files in a word processing program, and have a basic understanding of the Internet. Please remember that the instructor is not able to offer technical support. If you need technical support, please contact your Internet Service Provider.

Getting Help with Canvas: If you need help with Canvas, please contact the FPU Help Desk by phone: (559) 453-3410 or email: helpdesk@fresno.edu. Help is available Mon-Fri 8:00 am to 7:00 pm.

Final Course Grade and Transcripts

When all work for the course has been completed, students will need to request their final grade by accessing the form at ce.fresno.edu/grade-request. Once the instructor receives the request and posts their final grade, students will receive an email communication from the University. Please allow at least two weeks for the final grade to be posted before you order your transcripts online.

University Policies and Procedures

Students are responsible for becoming familiar with the information presented in the Academic Catalog and for knowing and observing all policies and procedures related to their participation in

the university community. A summary of university policies may be found on the university website at <https://www.fresno.edu/departments/registrars-office/academic-catalogs>.

Fresno Pacific University Student Learning Outcomes (FPU-SLO)

FPU-SLO 1	Student Learning Outcomes Oral Communication: Students will <i>exhibit</i> clear, engaging, and confident oral communication – in both individual and group settings – and will critically <i>evaluate</i> content and delivery components.
FPU-SLO 2	Written Communication: Students will <i>demonstrate</i> proficient written communication by <i>articulating</i> a clear focus, <i>synthesizing</i> arguments, and utilizing standard formats in order to <i>inform</i> and <i>persuade</i> others.
FPU-SLO 3	Content Knowledge: Students will <i>demonstrate</i> comprehension of content-specific knowledge and the ability to apply it in theoretical, personal, professional, or societal contexts.
FPU-SLO 4	Reflection: Students will <i>reflect</i> on their personal and professional growth and <i>provide evidence</i> of how such reflection is utilized to manage personal and vocational improvement.
FPU-SLO 5	Critical Thinking: Students will <i>apply</i> critical thinking competencies by <i>generating</i> probing questions, <i>recognizing</i> underlying assumptions, <i>interpreting</i> and <i>evaluating</i> relevant information, and <i>applying</i> their understandings to new situations.
FPU-SLO 6	Moral Reasoning: Students will <i>identify</i> and <i>apply</i> moral reasoning and ethical decision-making skills, and <i>articulate</i> the norms and principles underlying a Christian worldview.
FPU-SLO 7	Service: Students will <i>demonstrate</i> service and reconciliation as a way of leadership.
FPU-SLO 8	Cultural and Global Perspective: Students will <i>identify</i> personal, cultural, and global perspectives and will employ these perspectives to <i>evaluate</i> complex systems.

FPU-SLO 9	Quantitative Reasoning: Students will accurately <i>compute</i> calculations and symbolic operations and <i>explain</i> their use in a field of study.
FPU-SLO 10	Information Literacy: Students will <i>identify</i> information needed in order to fully understand a topic or task, <i>explain</i> how that information is organized, <i>identify</i> the best sources of information for a given enquiry, <i>locate</i> and critically <i>evaluate</i> sources, and accurately and effectively <i>share</i> that information.