



# **ILLINOIS VALLEY COMMUNITY COLLEGE**

## **COURSE OUTLINE**

**DIVISION: Humanities, Fine Arts, and Social Sciences**

**COURSE: ECE 1205 Mathematics for the Young Child**

Date: Spring 2020

Credit Hours: 3

Prerequisite(s)/Co-requisite(s): ECE 1000

Delivery Method:  **Lecture**                    **3 Contact Hours (1 contact = 1 credit hour)**  
 **Seminar**                    **0 Contact Hours (1 contact = 1 credit hour)**  
 **Lab**                    **0 Contact Hours (2-3 contact = 1 credit hour)**  
 **Clinical**                    **0 Contact Hours (3 contact = 1 credit hour)**  
 **Online**  
 **Blended**

Offered:  **Fall**     **Spring**     **Summer**

IAI Equivalent –**Only for Transfer Courses**-go to <http://www.itransfer.org>:

### **CATALOG DESCRIPTION:**

This course concentrates on providing early childhood educators with the knowledge, skills, techniques, and strategies necessary to incorporate mathematical concepts through developmentally appropriate practice into the curriculum of early childhood programs from birth through kindergarten. Students will identify what mathematics looks like during the early years and learn strategies to recognize and promote mathematical understanding in young children.

## GENERAL EDUCATION GOALS ADDRESSED

[See last page for Course Competency/Assessment Methods Matrix.]

### Upon completion of the course, the student will be able:

[Choose up to three goals that will be formally assessed in this course.]

- To apply analytical and problem solving skills to personal, social, and professional issues and situations.
- To communicate successfully, both orally and in writing, to a variety of audiences.
- To construct a critical awareness of and appreciate diversity.
- To understand and use technology effectively and to understand its impact on the individual and society.
- To develop interpersonal capacity.
- To recognize what it means to act ethically and responsibly as an individual and as a member of society.
- To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.
- To connect learning to life.

### EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals. See last page for more information.]

#### Upon completion of the course, the student will be able to:

1. Describe math concept development in relation to child development learning theories.

ILECE Math Standards	IPTS	ECE Competencies ILECE Math Standards	NAEYC Standards
a1C, a2B, b1E	2G, 9D, 9G, 9H	FCR4	6a, 6b

2. Compile developmentally appropriate activities to promote basic math concepts and processes.

ILECE Math Standards	IPTS	ECE Competencies ILECE Math Standards	NAEYC Standards
a2A, b2A	2J, 4E, 5P, 6C, 7G, 7I, 8C, 8P, 8Q, 9K, 9L, 9N, 9P, 9Q	CPD1	1a, 1b, 1c, 2a, 2b, 2c, 3b, 3c, 3d, 4a, 4b, 4c, 4d, 5c, 6b, 6c, 6d

3. Evaluate children's knowledge and skills of deemed math concepts in terms of development.

ILECE Math Standards	IPTS	ECE Competencies	NAEYC Standards
	6H, 7A, 7C, 7E, 7F, 7H, 7K, 7O, 7Q	OA1	3a, 3b, 3c, 3d

4. Apply math vocabulary to scaffold learning through child-guided activities and math talk and literacy.

ILECE Math Standards	IPTS	ECE Competencies	NAEYC Standards
b1D, b1F, b2B	1A, 1B, 1C, 1D, 1E, 2E, 2J, 3A, 3C, 3P, 4A, 4E, 4F, 4G, 4H, 4L, 4M, 4N, 4P, 4Q, 5P, 6C, 7G, 7I, 8C, 8P, 8Q, 9A, 9K, 9L, 9N, 9P, 9Q	IRE3, CPD1	1a, 1b, 1c, 2a, 2b, 2c, 3b, 3c, 3d, 4a, 4b, 4c, 4d, 5b, 5c, 6b, 6c, 6d

5. Utilize math strategies in teacher-guided activities in the classroom.

ILECE Math Standards	IPTS	ECE Competencies	NAEYC Standards
b1A	1A, 1B,1C, 1D, 1E, 1L, 2E, 3A, 3C, 3D, 3J, 3O, 3P, 4A, 4B, 4C, 4D, 4E, 4F, 4G, 4H, 4I, 4J, 4K, 4L 4M, 4N, 4O, 4P, 4Q, 8C, 8F, 9A	IRE3, IRE4	1a, 1b, 1c, 2a, 2b, 2c, 4b, 4c, 4d, 5b, 5c, 6b, 6c

6. Demonstrate and apply knowledge of the Illinois Early Learning and Development Standards.

ILECE Math Standards	IPTS	ECE Competencies ILECE Math Standards	NAEYC Standards
MP1-8	1A, 1B, 1C, 1D, 1E, 1F, 1L, 2C, 2G, 2M, 2N, 3A, 3E, 3I, 3J, 3L, 3O, 3P, 3Q, 4B, 4C, 4D, 4K, 4L, 5A, 5E, 5F, 5H, 5I, 5K, 5L, 5S, 7B	CPD2	1a, 1b, 4a, 4b, 4c, 4d, 5a, 5b, 5c, 6b

7. Explain the key mathematical concepts and skills that young children (pre-k) must develop and understand including the following concepts: numbers, counting and cardinality, operations and algebraic thinking, standard and non-standard measurement, shapes, patterns, spatial relations, and analysis of data.

ILECE Math Standards	IPTS	ECE Competencies ILECE Math Standards	NAEYC Standards
a1A, a1B, a1C, b1C, b2D, c1A, c1B, c1C, c1D, c1E, c1F, c2A, c3A, c5A, c5B, c5C, c6A, c6B, c6C, c6D, c6E	2A, 2B, 2C, 2D, 2I, 2N, 2O, 2P, 2Q, 3A, 5A, 5B, 5C, 5D, 5E, 5F, 5G, 5H, 5I, 5J, 5K, 5L, 5M, 5N, 5O, 5P, 5Q, 5R, 5S, 6A, 6B, 6E, 6I, 6J, 6Q	CPD5, CPD6	4b, 4c, 5a, 5b, 5c

## MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS

*[For each of the goals selected above, indicate which outcomes align with the goal.]*

Goals	Outcomes
<b>First Goal</b>	
To connect learning to life.	2. Compile developmentally appropriate activities to promote basic math concepts and processes. 4. Apply math vocabulary to scaffold learning through child-guided activities and math talk and literacy. 5. Utilize math strategies in teacher-guided activities in the classroom.

## COURSE TOPICS AND CONTENT REQUIREMENTS:

Sets; Number Sense; Counting; Number Operations; Pattern; Measurement; Data Analysis; Spatial Relationships; Shape; Illinois Early Learning and Development Standards related to mathematics; and Vocabulary related to mathematics.

## **INSTRUCTIONAL METHODS**

- Lecture
- Discussion on weekly assignments
- Student presentations of math activities
- Video/videoclip reviews
- Guest lecturers/presenters
- Child observations

## **INSTRUCTIONAL MATERIALS:**

The Early Math Collaborative – Erikson Institute (2014). *Big Ideas of Early Mathematics: What Teachers of Young Children Need to Know*. Pearson. ISBN: 978-0132946971

## **ADDITIONAL READING**

NAEYC. 2010. "Early Childhood Mathematics: Promoting Good Beginnings." A joint position statement of NAEYC and the National Council of Teachers of Mathematics (NCTM). [www.naeyc.org/files/naeyc/file/positions/psmath.pdf](http://www.naeyc.org/files/naeyc/file/positions/psmath.pdf).

## **STUDENT REQUIREMENTS AND METHODS OF EVALUATION:**

Weekly assignments/Assessment of Knowledge papers

Discussion Board Postings/Reflections

Observations

Article/Video reviews

Math Activities Resource File

Assessment of Children's Literature

Family Math Newsletter/Communication

A= 90-100

B= 80-89

C= 70-79

D= 60-69

F= 0-59

## **OTHER REFERENCES**

ECE Competencies: [www.ilgateways.com/docman-docs/professional-development/higher-education-programs/entitlement/851-ece-competencies-by-credential-level-and-suggested-role/file](http://www.ilgateways.com/docman-docs/professional-development/higher-education-programs/entitlement/851-ece-competencies-by-credential-level-and-suggested-role/file).

Illinois Professional Teaching Standards (IPTTS 2010)

[http://www.isbe.state.il.us/peac/pdf/IL\\_prof\\_teaching\\_stds.pdf](http://www.isbe.state.il.us/peac/pdf/IL_prof_teaching_stds.pdf)

NAEYC Initial Standards for Early Childhood Professional Preparation Programs 2010

[http://www.naeyc.org/ncate/files/ncate/Stdts\\_1pager.pdf](http://www.naeyc.org/ncate/files/ncate/Stdts_1pager.pdf)

Common Core: [http://www.corestandards.org/assets/CCSSI\\_Math%20Standards.pdf](http://www.corestandards.org/assets/CCSSI_Math%20Standards.pdf) (pgs 1-12)

Illinois Early Learning and Development Standards:

[http://www.isbe.state.il.us/earlychi/pdf/early\\_learning\\_standards.pdf](http://www.isbe.state.il.us/earlychi/pdf/early_learning_standards.pdf)

# Course Competency/Assessment Methods Matrix

ECE 1205 – Math for Young Children	Assessment Options																															
<p>For each competency/outcome place an “X” below the method of assessment to be used.</p>	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D						
<p>Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.</p>																																
<p>Describe math concept development in relation to child development learning theories.  <b>ECE COMPETENCY: FCR4; LVL3</b>  <b>IPTS: 2G, 9D, 9G, 9H</b>  <b>NAEYC: 6a, 6b</b>  <b>ILECE MATH STANDARDS: a1C, a2B, b1E</b></p>		X								X				X																X	X	
<p>Compile developmentally appropriate activities to promote basic math concepts and processes.  <b>ECE COMPETENCY: CPD1; LVL3</b>  <b>IPTS: 2J, 4E, 5P, 6C, 7G, 7I, 8C, 8P, 8Q, 9K, 9L, 9N, 9P, 9Q</b>  <b>NAEYC: 1a, 1b, 1c, 2a, 2b, 2c, 3b, 3c, 3d, 4a, 4b, 4c, 4d, 5c, 6b, 6c, 6d</b>  <b>ILECE MATH STANDARDS: a2A, b2A</b></p>																											X				X	
<p>Evaluate children’s knowledge and skills of deemed math concepts in terms of development.  <b>ECE COMPETENCY: OA1; LVL3</b>  <b>IPTS: 6H, 7A, 7C, 7E, 7F, 7H, 7K, 7O, 7Q</b>  <b>NAEYC: 3a, 3b, 3c, 3d</b></p>		X								X				X																	X	



