ECE204 Facilitating Children's Mathematical Thinking

Level: 2

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern:

Synopsis:

Young children are self-motivated to explore shapes, patterns, measurement and how numbers work in our world. Hence, ECE204 advocates for mathematical literacy in early childhood classrooms, rather than school mathematics. The emphasis is on facilitating children's use of mathematical and scientific thinking to make sense of the world. Early childhood mathematics should offer children challenge and joy, and invite them to experience mathematics as they play and live in the world.

Topics:

- Fundamentals of mathematical literacy:number (cardinality and ordinality), spatial relations, patterns, measurement, data, words and symbols
- Curriculum design principles
- Examining approaches such as curriculum by Maria Montessori, Kamii-Devries, High/Scope, and Clements & Sarama's "Building Blocks"
- Pedagogical materials (e.g., manipulatives and technology) that support mathematical exploration and learning
- Block play and constructivism
- Use of language to support mathematical and scientific thinking
- Creating daily opportunities for children to count, compare, categorise, reason, analyse, enquire, solve problems and dialogue
- Use of picture books and songs
- Setting up learning corners to encourage mathematical play
- Supporting child-initiated play
- Assessing progress, and documenting and communicating children's learning
- Children requiring additional support

Textbooks:

: Big Ideas of Early Mathematics: What Teachers of Young Children Need to Know - The Early Math Collaborative Pearson, Singapore
ISBN-13: 9780132946971

: Big Ideas of Early Mathematics: What Teachers of Young Children Need to Know - The Early Math Collaborative Pearson, Singapore
ISBN-13: 9780132946971-AA

Learning Outcome:

- Describe fundamental mathematical concepts
- Discuss children's ability to think mathematically
- Explain the various types of teacher scaffolding and guidance
- Observe and analyse a centre's use of time, space, materials and teaching strategies to support children's mathematical learning
- Demonstrate ability to plan activities that engage all age groups

Continuous Assessment Component	**Weightage (%)**
PRE-COURSE QUIZ	5
TUTOR-MARKED ASSIGNMENT	40
DISCUSSION BOARD	5
Sub-Total	**50**

Examinable Component	**Weightage (%)**
ECA	50
Sub-Total	**50**

Weightage Total	**100**