ECE374e Early Years Technology

Level: 3

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY JAN

E-Learning: FULL - Learning is done ENTIRELY online using interactive study materials in Canvas. Students receive guidance and support from online instructors via discussion forums and emails. There are no face-to-face sessions. If the course has an exam component, this will be administered on-campus.

Synopsis:

ECE374 Early Years Technology is designed to introduce technology as practical tools, robotics, coding, computational thinking and engineering design principles to preschoolers (4-to-6-year olds) in developmentally appropriate ways that promote playful learning, exploration, problem-solving and experimentation. Through Papert's constructionist perspective, the course unveils how young children can think and learn with the use of screen-based and non-screen-based technology. The course also promotes the integration of literacy and engineering, specifically through the use of stories to provide humanistic contexts for engineering problems. To be successful in this course, participants will be required to have first-hand experiences with the tools introduced, so that they are able to plan and design appropriate learning experiences to engage preschoolers, promote the development of self-regulation and executive function skills, and nurture dispositions such as curiosity, persistence, flexibility, reflectiveness and a collaborative outlook to problem solving. The course is suitable for anyone who is interested to learn more about how young children can engage with technology appropriately and learn to utilise them in healthy ways.

Topics:

- Debates surrounding the inclusion of technology in young children's lives
- Technology for developmentally appropriate learning and exploration
- Being inclusive in the use of early years technology
- Digital literacy for pre-schoolers
- Supporting mathematical and computational thinking in young learners
- Marina Bers' idea of "coding as playground"
- Basic engineering design process
- Identifying engineering contexts in children's picture books
- Strategies to engage children in conversation and collaboration
- Overview of STEM/STEAM standards in curriculum frameworks
- Integrating technology with loose parts and widely available classroom resources
- Home-school partnerships

Textbooks:

Bers, M.U.: Coding as a Playground (eText) 2018 New York: Routledge
ISBN-13: 9781315398921

Learning Outcome:

- Examine developmentally appropriate technology for young children
- Discuss the strengths and limitations of integrating STEM into an early childhood curriculum
- Examine the teacher's role in an inclusive and technology-enriched curriculum
- Apply constructionism to instructional and curriculum design
- Demonstrate familiarity using child-friendly technologies
- Employ a variety of resources and strategies to support digital literacy, coding, and/or
- Design developmentally appropriate learning experiences that introduce children to robotics, coding, computational thinking and/or engineering design

Assessment Strategies (Evening Class):

Components	**Description**	**Weightage Allocation (%)**
Overall Continuous Assessment	TUTOR-MARKED ASSIGNMENT 1	30
	DISCUSSION BOARD 1	10
Overall Examinable Components	ECA	60
Total		**100**