

COURSE NAME: ECE204 Math and Science for Young Children

Credit Value: 2
 Total Course Hours: 27
 Prerequisite Course(s): ECE 111
 Corequisite Course(s): None

COURSE DESCRIPTION

This course employs an active learning, inquiry and project based approach to the exploration of how young children develop skills and concepts in science and mathematics. Students learn about scientific thinking, how to encourage science exploration, and how to support children's scientific inquiry from various perspectives. Students will explore how young children develop mathematical concepts and knowledge. Students will learn about design and creation of learning environments as well as intentional teaching practices that advance children's knowledge and skills development

PLAR INFORMATION

This course is eligible for Prior Learning Assessment and Recognition. Students are advised to discuss options with their program coordinator.

COURSE LEARNING OUTCOMES

Upon completion of this course, the student will have reliably demonstrated the ability to:

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| <p>1.0 Analyze child development and theoretical influences and practices</p> <p>1.1 Understand various relevant child development theories</p> <p>1.2 Incorporate teaching strategies that support current research</p> <p>1.3 Facilitate theoretical practices into the learning environment</p> <p>2.0 Demonstrate an understanding of supporting a climate and environment for experiential learning</p> <p>2.1 Designing indoor and outdoor space to encourage exploration of math and science skills in meaningful ways</p> <p>2.2 Understand how to establish an environment that promotes self-initiated learning and provokes curiosity</p> <p>2.3 Incorporate the essentials of aesthetics into the learning environment</p> <p>2.4 Identify developmentally appropriate opportunities that support learning in math and science</p> <p>2.5 Utilize the learning environment to support the interests of the children</p> <p>2.6 Assimilate natural elements into the early</p> | <p>childhood classroom</p> <p>2.7 Incorporate components of the Reggio Emilia approach to learning into class materials and environment</p> <p>3.0 Exhibit comprehension in supporting the learning of math concepts in young children</p> <p>3.1 Knowledge of child development guidelines and acquisition of math concepts</p> <p>3.2 Understand that math develops in a sequential manner</p> <p>3.3 Facilitate early learning in the following math concepts:</p> <p>3.4 -one-to-one correspondence</p> <p>3.5 -comparison and classification</p> <p>3.6 -number sense and numeration</p> <p>3.7 -measurement</p> <p>3.8 -geometry</p> <p>3.9 -data analysis</p> <p>3.10 Provide hands on learning experience to support understanding of math concepts</p> <p>4.0 Exhibit comprehension in supporting the learning of science concepts in young children</p> <p>4.1 Knowledge of child development guidelines and acquisition of science concepts</p> <p>4.2 Facilitate early learning in the following</p> |
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- science concepts
- 4.3 -physical science
 - 4.4 -life/health sciences
 - 4.5 -natural/earth sciences
 - 4.6 -environmental sciences
 - 4.7 Provide hands on learning experience to support understanding of science concepts
- 5.0 Evaluate and validate the role of the educator as a facilitator in learning process
- 5.1 Identify developmentally appropriate opportunities that support learning in math and science
 - 5.2 Create a learning environment that supports exploration of various math and science concepts
 - 5.3 Understand various forms of questioning to support higher level thinking in children
 - 5.4 Recognize the value in observing, assessing and documenting children's understanding of math and science concepts
 - 5.5 Support inquiry based discoveries and child directed learning as well as teacher guided learning experiences
 - 5.6 Recognize the importance of, and build upon connections between the learning environment, home and the community
 - 5.7 Value the influence of scaffolding the children's learning
- 6.0 Understand the educational approach of STEM/STEAM
- 6.1 Recognize the value of STEM/STEAM education in early childhood
- 6.2 Acknowledge the benefits of student inquiry, dialogue & critical thinking, problem solving and collaboration
- 6.3 Comprehend the learning connection of STEM/ STEAM with meaningful and complex real world problems
- 6.4 Examine leadership within a culture of adaptability, meaningful risk taking and flexibility
- 7.0 Demonstrate the ability to meet course requirements and display professional skills required within the field
- 7.1 Consistently and punctually attend all classes as scheduled
 - 7.2 Comprehensively complete all tasks assigned in the course, according to the deadlines as outlined
 - 7.3 Demonstrate professional and presentable conduct conducive to working with those of a vulnerable sector, at all times
 - 7.4 Display the capabilities of safely and competently engaging with young children and their perspective agencies
 - 7.5 Demonstrate the ability to follow the College of Early Childhood Educators Code of Ethics and Standards of Practice within the classroom setting
 - 7.6 Display the ability to work collaboratively and effectively with peer groups and professors

GENERAL EDUCATION

This is not a General Education course.

PROGRAM VOCATIONAL OUTCOMES

This course contributes to the following Ministry of Training, Colleges and Universities approved program vocational learning outcomes (PVLO):

Early Childhood Education

1. design, implement and evaluate inclusive and play-based early learning curriculum and programs that support children's holistic development and are responsive to individual children's and groups of children's observed abilities, interests and ideas.
2. establish and maintain inclusive early learning environments that support diverse, equitable and accessible developmental and learning opportunities for all children and their families.

3. select and use a variety of screening tools, observation and documentation strategies to review, support and promote children's learning across the continuum of early childhood development.
4. establish and maintain responsive relationships with individual children, groups of children and families.
5. assess, develop and maintain safe, healthy and quality early learning environments which meet the requirements of current legislation, agency policies and evidence-based practices in early learning.
6. prepare and use professional written, verbal, nonverbal and electronic communications when working with children, families, colleagues, employers, and community partners.
8. apply a developing personal philosophy of early learning in accordance with ethical and professional standards of early childhood education practice.
10. engage in reflective practice, develop learning goals and maintain an ongoing professional development plan in accordance with evidence-based practices in early learning and related fields.

ESSENTIAL EMPLOYABILITY SKILLS OUTCOMES

This course contributes to the following Ministry of Training, Colleges and Universities approved essential employability skills (EES) outcomes:

1. Communicate clearly, concisely, and correctly in the written, spoken, and visual form that fulfils the purpose and meets the needs of the audience.
2. Respond to written, spoken, or visual messages in a manner that ensures effective communication
3. Execute mathematical operations accurately
4. Apply a systematic approach to solve problems
5. Use a variety of thinking skills to anticipate and solve problems
6. Locate, select, organize, and document information using appropriate technology and information systems.
7. Analyse, evaluate, and apply relevant information from a variety of sources.
8. Show respect for the diverse opinions, values, belief systems, and contributions of others
9. Interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals.
10. Manage the use of time and other resources to complete projects.
11. Take responsibility for one's own actions, decisions, and consequences.

EXTERNAL COURSE ACCREDITATIONS AND CONDITIONS

COURSE EVALUATION

- 25% Assignment
- 25% Assignment
- 25% Assignment
- 25% Final Exam

PROGRAM SPECIFIC GRADING

Per College Grading System

GRADING SYSTEM

A+:	90-100%	B+:	77-79%	C+:	65-69%	D:	50-54%	S - Satisfactory
A:	85-89%	B:	73-76%	C:	60-64%	F:	0-49%	I - Incomplete
A-:	80-84%	B-:	70-72%	D+:	55-59%			F - Repeat course

*For a complete detailed description please refer to the College website.

LEARNING RESOURCES

Recommended: optional resources listed below

Active Experiences for Active Children: Science

Active Experiences for Active Children: Mathematics

Resources listed on the course outline support the achievement of learning outcomes, and may be used throughout the course to varying degrees depending on the instructor's teaching methodology and the nature of the resource.

LEARNING ACTIVITIES

In class discussion supported with practical application activities

DELIVERY MODE

Lecture/Lab

ACADEMIC POLICIES

- Academic Integrity
- Academic Appeal
- Academic Attendance
- Grading and Assessment

For academic policies please see: <http://www.canadorecollege.ca/about-us/corporate-policy-manual>.

COLLEGE POLICIES

- Protecting human rights in support of a respectful college community

For college policies please see: <http://www.canadorecollege.ca/about-us/college-policies>.

STUDENT SUCCESS SERVICES

YOUR SUCCESS MATTERS!

We offer comprehensive, student-focused services designed to help you succeed. Canadore is committed to Student Success and offers CONFIDENTIAL services to help you in your studies. We offer:

- Study skills workshops
- Peer tutoring
- Career guidance
- Mental health and wellness tips and strategies
- Resource centre
- Assistive devices

The ultimate goal of Student Success Services is to support students so they can achieve success academically, in their career aspirations, and in their personal lives. Please don't hesitate to drop by C262 or to book an appointment please call 1-705-474-7600 ext. 5205.

FIRST PEOPLES' CENTRE:

We offer a culturally safe environment where our student focused services provide you with the following CONFIDENTIAL services:

- One on one counselling
- Elder in residence
- Peer tutoring
- Peer mentorship
- Lunch & learn workshops on study skills, self-care, life skills
- Resource Centre

Drop by our offices at C254 College Drive, E101 Commerce Court or call 705 474 7600 Ext. 5961 College Drive / 5647 Commerce Court.

WAIVER OF RESPONSIBILITY

Every attempt is made to ensure the accuracy of this information as of the date of publication. The college reserves the right to modify, change, add, or delete content.

HISTORICAL COURSE OUTLINES

Students use course outlines to support their learning. Students are responsible for retaining course outlines for future use in applications for transfer of credit to other educational institutions.