YORK UNIVERSITÉ UNIVERSITY **Faculty of Education 2023/24**

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Welcome! I am excited to have this opportunity to learn from and with you this term.

Course Code	EDPJ 2000	Title	Science & Technology in the Primary-Junior Divisions
Term	Winter	Credit	3

Section	**N**	Meeting Day	Tuesdays (12 seminars)
Location	MC157AB	Time	8:30- 11:30 (3 hours)

What is this course about?

This course examines purposes and practices of Primary-Junior-Intermediate division science in Ontario. You are engaged in theory and authentic science-student and science-teacher experiences through course participation and assessments.

Topics may include: Purposes of science education; The science curriculum; Concept development; Science and technology within social and environmental contexts; Nature of Science (NOS); Science Inquiry and problem solving; Science pedagogy and approaches; Lesson planning and development; Assessment in school science.

General encompassing themes may include:
- ❑ Science, Society, Technology and the Environment
- ❑ Equity and inclusion in Science
- ❑ The Nature of Science
- ❑ Indigenous ways of knowing
- ❑ Outdoor and environmental science education
- ❑ Student engagement in science

You will develop an understanding of principles underlying teaching science and technology in elementary school. Through hands-on activities, you will practice skills of scientific inquiry and technological problem solving. You will have an opportunity to examine and challenge assumptions about the nature of science and technology and what it means to teach in ways that are both meaningful and relevant. This course will focus on the continuing process of becoming an

effective educator through refinement of program planning skills and instructional practice in areas of Science & Technology. The program will be based on the latest Ontario Science and Technology curriculum document. This course contributes to the improved preparation of teacher candidates to teach in the Primary, Junior and Intermediate Divisions (Grades 1-8) of Ontario schools.

What are our learning goals? BIG IDEAS

By the end of this you course you will demonstrate:

1. the ability to locate and organize resources for science teaching that are distinguished by the range of perspectives they represent, their relevance to the developmental needs of learners, and their relation to learners' histories and interests;

2. critical engagement with Ontario Science curriculum and policy documents;

3. a commitment to diversity, inclusion, understanding, acceptance and social responsibility in dialogue with local, national, and global communities.

4. an understanding of ways of knowing and how science knowledge is made, learned, and used;

5. the ability to recognize the values embedded in science educational trends and discourses;

6. the capacity to work with science and interdisciplinary knowledge;

7. a critical understanding of the dynamics of gender, race, ethnicity, class, sexuality, culture, ability/disability, and structures of privilege in knowing and learning of science;

8. a repertoire of science teaching practices that are responsive to the needs of diverse learners;

9. effective individual science education planning strategies;

10. the ability to develop and maintain a positive, inclusive, and engaging science learning environment;

11. an understanding of local and global considerations of how community is made in classrooms;

12. an ability to create science curricular study focused on questions of community and culture;

13. the ability to create science curricular study focused on questions of environmental sustainability;

From: Key course objectives/UUDLEs

How will our course be delivered?

This is a face-to-face seminar course. There is no online or blended component. We will have large and small group instruction. We will work in collaborative teams and independently. We will communicate our understanding in our classroom settings. This course will be delivered in a similar fashion as to what you would be doing as a classroom educator.

What is expected from me as a learner?

In this course, you will abide by York's Code of Student Rights & Responsibilities as well as the Ontario College of Teachers Professional Standards and Ethical Standards. These expectations inform our interactions.

You will be prepared for each seminar class by completing pre-activities and actively engaging in classroom discussions while working within our community agreements These in class learning experiences are embedded in all of our course assignments. If you consistently attend and arrive on time , you are more likely to engage in class discussions and activities, and may be more prepared to contribute.Thus deep learning is contingent on active engagement.

Please add seminar dates to your organizing calendar and plan your personal commitments outside of these dates. You can find your schedule on BEd Program Calendars and on the chart below.

Your presence in our class matters. We learn as a community. Attendance and engagement is a key component of all assignments in this course and will be tracked. You are engaged in a program of professional preparation. Thus to fulfil your learning and teaching responsibilities attendance is mandatory.

In the event of an unavoidable absence, please fill out this form when missing a seminar instead of sending an email. This Google form will notify me of your absence. As well, since we engage in group work, kindly email any classmates affected by your absence as soon as possible. If your absences exceed the ceiling of 2 seminars out of the 12 seminars- you will not obtain this credit.

What resources are available to support me on campus?

Visit these websites to explore the services that are available

Undergraduate Student Services & Advising | Faculty of Education

Student Counselling, Health & Well-being

Student Accessibility Services

Academic Accommodation for Students with Disabilities

What are the course assignments? How will you assess/evaluate what I know and can do?

Assignments	Weight %	Due Date
Assignment 1: Critical Reflection and Professional Engagement (shared Seminar 1)	40	Seminar 11
Assignment 2: Unpacking The Science and Technology Curriculum (shared Seminar 3)	30	Seminar 6
Assignment 3: Planning, Instructing, and Assessing- An Inquiry Lesson using the Science and Technology Curriculum (shared Seminar 6)	30	Seminar 10-12

Evaluations will use the York University Undergraduate Grading system.

What is the schedule for the seminars? What will we be doing to engage with the learning goals of this course?

Below are the themes we will be exploring. More details will be shared and discussed as the course proceeds and as we co-construct our learning.

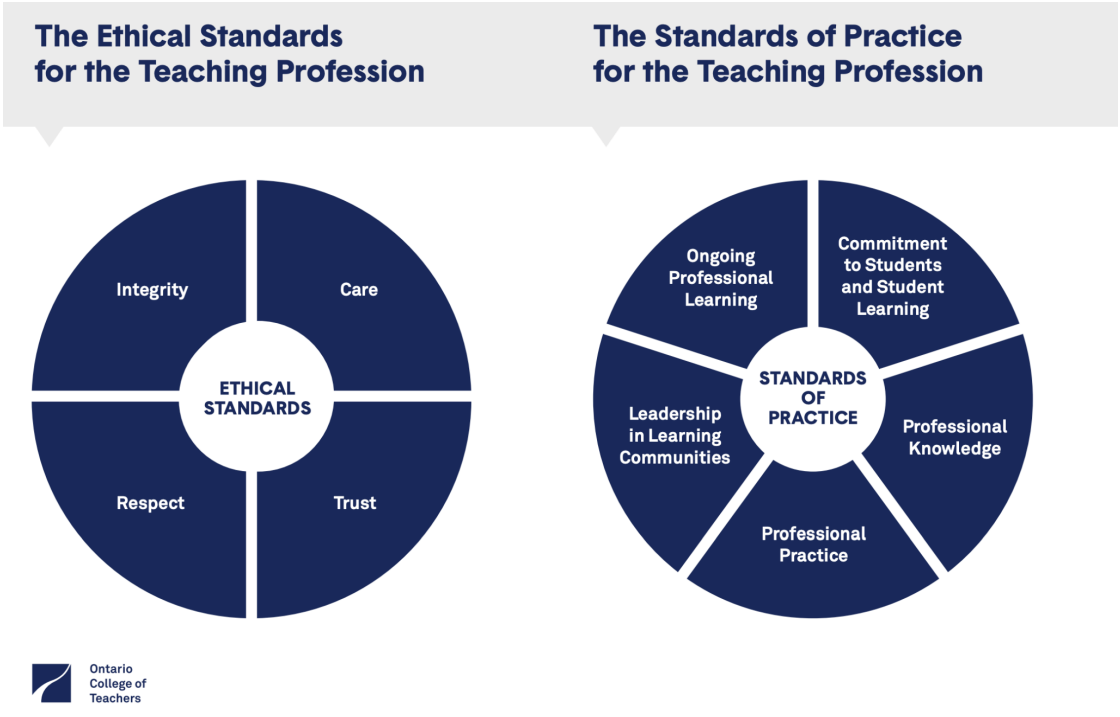
Seminar	Date	Topic
Setting Foundations: Learners, Community, Inquiry and Justice		
1	Jan 9	Building Community in Our Science/Technology Education Practice
2	Jan 16	Equity and Justice in Science and Technology Education
3	Jan 23	Incorporating Inquiry-based Learning
Planning, Instruction, and Assessment: What works?		
4	Jan 30	Part 1:Design an Inquiry & Curriculum Analysis
5	Feb 6	Part 2: Engineering Design Process & Curriculum Analysis
6	Feb 13	Considerations in Unit Planning - Making Connections between Strands, and Cross-Curricular Themes
Reading Week		
7	Feb 27	Lesson planning using the 5E Model of Instruction
8	Mar 5	Part 1: Assessing and Planning for Student Learning in Science

9	Mar 12	Part 2: Assessing and Planning for Student Learning in Science
Applying and Extending Our Practice: Teaching Micro Inquiry Lessons		
10	Mar 19	Part 1: Applying and Extending Our Practice: Teaching Micro Inquiry Lessons
11	Mar 26	Part 2: Applying and Extending Our Practice: Teaching Micro Inquiry Lessons
12	Apr 2	Part 3: Applying and Extending Our Practice: Teaching Micro Inquiry Lessons

What about academic honesty and integrity?

In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's Academic Integrity module at the beginning of the course. Breaches of academic integrity range from cheating to plagiarism (i.e., the improper crediting of another's work, the representation of another's ideas as your own including AI generated work, etc.). All instances of academic dishonesty in this course will be reported in accordance with the Senate Policy on Academic Honesty

What other standards and ethics apply?



See Standards of Practice | Ontario College of Teachers and Ethical Standards | Ontario College of Teachers

What if I have more questions and/or feedback about our class?

I welcome your feedback and questions. Please reach out when you have questions and/or comments particularly during class when I can provide just in time feedback. Like me, your colleagues are also resources. I thank you for your commitment to learning. Looking forward to what we will create together.

* This course outline may be subject to change as we co-construct our learning. Any changes made will be announced in class.