Cape Breton University

Happen.

Course Outline

EDUC 6800— Education for Sustainability, Creativity and Innovation Project

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Course Schedule: On-line delivery

Department Mission and Core Focus

The Department of Education at Cape Breton University is committed to preparing teachers for their responsibilities as educators in both local and global contexts. To achieve this, we provide programs in both pre-service and continuing teacher education that emphasize disciplined professional inquiry while reflecting the best classroom practice and the results of current research on teaching and learning. The Department of Education is dedicated to preparing teachers, who will be knowledgeable, skilful, flexible, caring pedagogues and responsible members of the profession.

A core focus for the Education programs at Cape Breton University is Education for Sustainability (EfS). This vision of EfS is inclusive of the three realms of sustainability – environment, society and economy and addresses content, context, pedagogy, global issues and local priorities. Teachers and teacher candidates will engage in learning designed to cultivate, critical thinking, creativity, knowledge, and skills to actively address challenges with sustainable solutions. EfS supports the values of interdependence, empathy, equity, personal responsibility, social justice and holistic perspectives required to participate in society and to live sustainably and well.

Course Description

This project-based course provides the opportunity for students to integrate sustainability education into a project. Students will assess the current strengths and areas for development regarding sustainability education in their school or organization. Based on the assessment

students will design, implement, evaluate and report on a project that is completed within the timeframe of the course.

Pre-requisites: Students must be enrolled in M.Ed (SCI) and have completed at least 21 credits. The project is intended to fulfil the requirements for a significant and independent piece of scholarship that is equal to a thesis in academic quality but which may be more limited in scope and/or degree of originality. This course is worth six credits towards the M.Ed (SCI) degree and is completed over two terms.

Course Outcomes

The course is designed to develop skills, knowledge, and values aligned with:

- the capacity to develop and implement a sustainability education project in a school/organization or community
- using a Design Thinking process to generate, evolve and implement ideas
- demonstrating the ability for systemic thinking
- working and thinking from a futures oriented perspective
- a commitment to decisiveness, action and an entrepreneurial mindset to advance sustainable solutions
- becoming an effective communicator able to use digital media technology creatively to deepen and accelerate sustainability education across all education processes

Course Objectives
Students will:

- utilize design thinking as a creative processes to plan and implement a sustainability project
- define an actionable, approachable problem, or challenge to create meaningful solutions
- define goals and measures of success
- undertake research to establish the context and significance of the work
- understand and adhere to Tri-Council Ethics policies to guide research
- understand and adhere to institutional policies regarding permissions regarding research and project activities
- develop a project proposal to define ideas and describe project
- incorporate and integrate feedback
- develop a detailed framework/model
- create timeline, identify gaps, move forward with project implementation
- evaluate project against known measures
- identify potential sources of funding to support project
- communicate project design process and implementation in a final report
- share the story of the project and disseminate knowledge and outcomes

Textbook(s) and Other Resources

Required readings and supplemental readings and resources are available on the course Moodle site.

Tri-council Policy Statement 2: TCPS 2 Tutorial on Research Ethics
http://www.pre.ethics.gc.ca/eng/education/tutorial-didacticiel/

Design Thinking for Educators – Online Toolkit - https://designthinkingforeducators.com/

COURSE OVERVIEW

EDUC6800 is a project-based graduate course that aligns itself with design scholarship. The course is based on interpreting and integrating research and theory, while exploring possibilities through design thinking. The project is intended to fulfill the requirements for a significant and independent piece of scholarship that is equal to a thesis in academic quality but may be more limited in scope and more applied and practical in focus. This course is equivalent to six (6) credits towards the M.Ed (SCI) degree and is completed over two (2) academic terms.

The project-based EDUC6800 course should:

- Use existing research to a establish the context and significance of the work
- Be reviewed and approved by applicable research ethics boards and departments if involving research with human participants
- Be reviewed and approved by applicable department within the institutions where the project will be undertaken
- Explore questions through the design process as well as traditional forms of analysis
- Develop design goals and outcomes and reflect critically on these outcomes
- Demonstrate evidence of a creative, innovative project proposal based on the design process
- Include written components (reports) documenting the implementation of the project and its relation to the above

Projects, while based on theory, have practical import. They can be developmental or non-traditional in nature. The following examples demonstrate a wide variety of acceptable formats available to students. This is not a comprehensive list, but rather a sample of possibilities.

Developmental design projects
Handbooks/Manuals
Program Planning
Problem/Project/Phenomenon-based Learning Designs
Community projects
School projects
Professional learning
Non-traditional Designs

Arts-based Project
Comprehensive Portfolio
Narrative/Personal Journal/Digital Media Design
Publications
Action Research Project

Calendar Description

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Pre-requisites: Students must be enrolled in M.Ed. (SCI) and have completed at least 21 credits in the M.Ed. program.

While design thinking and doing is inherently collaborative in nature, each student is required to design, plan and implement an **individual** project. There will be opportunities in the course to collaborate and receive feedback from colleagues. Students will also be encouraged to confer with others in their workplace to plan and implement the project.

Supervision

The course instructor will act as academic supervisor for all aspects of the project proposal process. The instructor will be named as supervisor for ethics approval applications and for any required letters of supports from external organizations and agencies.

Students are required to provide the name of a person who can offer impartial verification of the implementation of the project. This person may be a principal, vice principal, department head, manager, supervisor or other professional who is familiar with the scope of the project and can sign to verify the project was implemented as proposed by the student. It is the student's responsibility to identify this person and to keep them informed of the project's progress and implementation. A signed letter of verification will be required as part of the final project report.

Education for Sustainability is Action Oriented

The course is developed using the fundamentals of "Design Thinking" (IDEO, 2016). Design thinking is an intentional process to get to new, relevant solutions that create positive impact.

Students will be led through the Design Process (d-School, Stanford University, 2016) as a structured approach to generating and evolving ideas. There are five connected, progressive phases to help navigate the education for sustainability project.

Education for Sustainability is action oriented. Students will research existing projects undertaken in schools and organizations to better understand the scope of possibilities as they relate to their own organizations.

** the Design Process was developed by IDEO (2016). *Design thinking for educators - toolkit.* Retrieved from designthinkingforeducators.com is available as open source at no charge.

Design Thinking for Educators

Being a change agent and leader for transformative educational reform requires creative development and the growth in creative capacity of an individual over time. Creative capacity increases through creative practice. Design thinking provides a creative process through which people can engage in meaningful problem or challenge finding and solving. It is important that students find a challenge that they can become passionate about so they can be intrinsically motivated to engage the process for hopeful, optimistic change.

Students are encouraged to explore realistic, approachable, understandable challenges during the M.Ed. (SCI) program so they can come to EDUC6800 having some focus to allow for further exploration and experimentation. The first step in the design process is idea generation the focus of which is to ensure students have a topic that is realistic, yet significant and implementable in the course timeframe. =

The phases of the Design Thinking process are outlined below. ** adapted from IDEO (2016).

Phase 1: DISCOVERY

- Define a challenge – approachable, understandable, actionable
- List possible topics/ideas
- Frame the problem
- Define the goals
- Define measures of success
- Establish constraints

PHASE 2: INTERPRETATION

- Research – observation, sharing your stories
- Capture the information
- Search for meaning – finding themes
- Make sense of findings - finding links; getting outside input
- Define insights – making them actionable

Phase 3: IDEATION

- Generate ideas – brainstorming
- Select promising ideas
- Refine ideas – reality checks
- Describe idea

Phase 4: EXPERIMENTATION

- Make a prototype – storyboard, diagram, story, mock up, model
- Get feedback
- Capture feedback
- Integrate feedback

Phase 5: Evolution

- Identify indicators of success
- Track indicators
- Engage others, build partnerships
- Document progress
- Move forward, create a timeline; assign champions, identify gaps, plan regular check ins
- Share your story; collect memories, build a narrative, spread your story

Each phase of the Design Process will require students to complete tasks, and provide evidence of engaging with the steps in the design phase. Design thinking is fundamentally collaborative. Students will have opportunities to share, to get peer input and feedback in small group settings and to build their individual ideas together.

Tentative Timelines

The proposed timeline is illustrative and meant to give you an overall sense of how the course may unfold. Timelines shift according to student, organizational and instructor needs.

<u>**Term 1: Project Design and Plan**</u>

Week 1: Introduction to Course and Design Thinking

Week 3: Defining the Challenge – (1-2 pages)

Week 5: Ethics Application Submitted/Departmental Approvals Submitted

Week 6: Presentation – Sharing Project Design Challenge

Week 7: Exploring Funding Possibilities <u>(accessing funding is not mandatory)</u>

Week 8: Developing Full Proposal

Week: 10: Submission/Presenting Full Project Plan (8 – 10 pages)

Term 2: Project Implementation

Project Implementation (ongoing)

Week 1: Dissemination Strategies – providing community engagement and inspiration

Week 4: Graduate Seminar – Publishing Opportunities

Week 8: Mid term Implementation Report

Week 10: Final Presentation/Report (5 – 7 page report – additional appendices can be included)

Week 12: Reflection/Evaluating Project

Applying for Grants and Funding

Students will research possible sources of local, provincial, and national funding to support sustainability projects. Writing effective grant proposals will be explored. There is not an expectation that students will be awarded external funding.

Applying for Ethics Approval

The project involves gathering and analyzing data, sharing information and possible publication of project results. Students will be introduced to the Tri Council Policy (TCP) on Research and be expected to complete online certification in TCP Ethics.

- Complete certification
- Apply to necessary school/organization ethics review bodies for ethics approval
- Name an on-site supervisor to verify project implementation
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Publication Opportunities:

Students will explore the opportunities to publish and to creatively disseminate the results of the project.

Evaluation

1. **Collaboration and Cooperative Learning:** online activities, discussion forums, group meetings, online workshops 10%

2. **Ethics Tutorial/Approvals:** completion of TCP credential; successful ethics approval/departmental approval of project 15%

3. **Defining the Challenge:** completion of a brief outline defining and demonstrating an initial understanding of the design project 10%

4. **Project Plan and Design Process:** completion of a written report outlining the design thinking process and project plan. Includes evidence of goals, objectives, research, and timelines for the planning of a realistic, actionable project 20%

5. **Mid-Term 2:** Reflection and Update: completion of a progress report on the implementation phase of the project 5%

6. **Final Report:** a documentation of the implementation includes appendices containing a record of the journey, planning sheets, artefacts, photos, digital record to document the journey. Students may choose how to present their design story 30%

7. **Demonstration of Dispositions and Work Habits:** able to demonstrate creativity, problem solving, organization, independence, leadership, perseverance in design completion and implementation of the project 10%

Total: 100%

Accommodation/ Special Needs

Students requiring accommodation should self-identify to the instructors and refer to Jennifer Keeping Accessibility Centre at www.cbu.ca/jkac for available resources.

Comprehensive descriptions and expectations will be given previous to the assigned learning tasks. The project development and implementation will require students to be proactive, self directed and able to work collaboratively, but also independently in the design , planning and implementation process. Students are expected to communicate with the instructor regularly and to ask for assistance or clarification if unsure how to proceed with any portion of the assigned work. There will be opportunities to discuss assignments and your progress with the instructor through scheduled virtual "office hours" and other means of communication.

A Note on Grades

Grades in the range of 90-100 indicate work that is of exceptional quality that represents achievement that is quite rare; all course outcomes are met and exceeded. Grades in the range of 80-89 reflect a level of achievement that is excellent and indicate a high degree of sustained effort and a demonstration of mastering most course content and skills. A grade in the 70 -79 range communicates a good effort with many course concepts and skills being mastered and an acceptable quality of course work being produced. Grades below 70 communicate that many of the core course outcomes have not been met by the student. Grades below 70 indicate the student has been unsuccessful in completing the course.

Code of Student Behaviour

All students should read carefully the section in the University calendar pertaining to "Ethical Behaviour in Academic Matters". This information can be found at: http://www.cbu.ca/cbu/Calendar/Calendar_2007_2009/pdfs/calendar_07-09.pdf

Late/Missed Assignments

It is important to have open and transparent communication with your instructor in the event of late or missed course work. Consistent with University policy on evaluated tasks, acceptable documentation if assignments/evaluated tasks are missed due to absence is required. Students are responsible for any missed materials and when acceptable documentation is received a mutually acceptable alternate arrangement for evaluation will be made. Penalties may be incurred unless alternate arrangements are made prior.

It is the student's responsibility to ensure that any course work that is submitted electronically is actually received by the instructor. Students should follow up with instructors to ensure emails and file attachments were received.