THE UNIVERSITY OF BRITISH COLUMBIA

Faculty *of* Education

Department of Curriculum and Pedagogy

EDUC 450B 305 (3): **Inquiry Seminar I: Design and Technology Education**
Winter 1 2015

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COURSE DESCRIPTION

Inquiry is understood as a deliberate, sustained and systematic process—beyond the everyday reflection required in teaching. Professionals explore what they do and how they do it; it involves sharing one's inquiries with colleagues. It involves classroom teachers, individually and collectively, in a cycle of action, reflection, sharing and adaptation. Teachers are given opportunities for practice, and to address challenges and issues that arise through discussion and reflection, try out new or revised practices, and evaluate the results. The cycle then begins anew based on the outcomes, responses, and possibilities emerging from the inquiry.

EDUC 450, 451, 452: Inquiry Seminars
The inquiry process across the BEd (Secondary) program consists of:

1. Teacher inquiry & support, preparation towards project (EDUC 450 – Inquiry I)
2. Refining and sharing the inquiry project; links to practice (EDUC 451 – Inquiry II)
3. Reflecting, links to practice, ongoing questions and learning over the year (EDUC 452 – Inquiry III)

COURSE OBJECTIVES

Upon completion of this course, the student should have developed:

1. an understanding of technology teaching as a moral and intellectual activity requiring inquiry, judgment and engagement with complex situations and relationships —with students, parents, colleagues and the scholarly community.
2. an appreciation of the importance of research and reflection in understanding design and technology curriculum, teaching and learning.
3. a desire to engage in their own educational inquiries—to become students of teaching.

Texts for EDUC 450B:

Required: Petrina, S. (2007). *Advanced teaching methods for the technology classroom*. Hershey, PA: Information Science Publishing. http://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf

Resources & Readings: Download at http://blogs.ubc.ca/dandt

ASSESSMENT AND MARKS / ASSIGNMENTS (see details below):

Assignment	Due Date:	Percentage
1. Class participation (in-class)	Ongoing	20%
2. Microteaching and feedback	Ongoing	20%
3. e-Portfolio / blog	Ongoing	20%
4. Philosophy of Teaching Design and Technology	October 1	20%
5. Tutorial	December 17	20%

PASS/ FAIL:

Pass	From average to outstanding in all aspects of course. Average to excellent coverage of requirements for assignments. The assignments are coherent and comprehensive. Average to great examples are used to supplement ideas. Communication, demonstrations and presentations are of a high standard— the assignments look professional and are clean (nearly free of typos, few desk-top publishing problems, etc.). The formats followed adhere to the formats provided.
Fail	An inadequate and incomplete performance. Patchy coverage of criteria with omissions in certain areas. No attempt at meeting requirements. Little attempt at being comprehensive. Minimal effort following formats. Poor communication, demonstrations and presentations.

POLICIES

Policies regarding attendance and missed or late assignments follows those recommended by the University and the Faculty of Education.

- **Attendance policy:** If you must miss a class, notify your instructor immediately. The nature of the Teacher Education Program is participatory. Teacher candidates who miss a significant amount of class time (i.e., more than 15% of course hours) are normally required to repeat the course. Teacher candidates are not able to proceed to practicum until all prior courses are successfully completed. See http://teach.educ.ubc.ca/students/policies-and-guides/
- **Academic Honesty and Standards, and Academic Freedom:** Please refer to *UBC Calendar 2015/2016* Policies and Regulations (Selected): http://www.students.ubc.ca/calendar
- **Academic Accommodation for Students with Disabilities:** Students with a disability who wish to have an academic accommodation should contact the Disability Resource Centre without delay (see UBC Policy #73, http://www.universitycounsel.ubc.ca/files/2010/08/policy73.pdf.

COURSE OUTLINE

Topic	**Understanding Inquiry (Sept 10): What does it mean to be a Technology Educator?**
Guiding Questions	• What is this course about? • What are the values we should be considering, teaching, and practicing?
Activities	1. Introduce syllabus 2. Teaching Perspectives Inventory (TPI) http://www.teachingperspectives.com/tpi/ a. Idealized Technology Teacher 3. Teacher Professionalism a. Terry O'Reilly episode: http://www.cbc.ca/radio/undertheinfluence/selling-yourself-the-art-of-personal-branding-1.3106068# b. BCTF code of ethics: https://bctf.ca/ProfessionalResponsibility.aspx?id=4292
Topic	**Understanding Teaching (Sept 17): Why should I become a reflective practitioner?**
Guiding Questions	• *The Reflective Practitioner* • What is reflective practice in technology education?
Readings	1. Petrina, S. (2007). Preface. *Advanced teaching methods for the technology classroom* (pp. ix-xiv). http://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf a. Read pp. ix-xvi. 1. Waks, L. J. (1999). Reflective practice in the design studio and teacher education. *Journal of Curriculum Studies, 31*(3), 303-316. http://goo.gl/QC65q2
Activities	1. Placemat activity for Petrina Preface 2. Placemat activity for Waks article & *The Reflective Practitioner* 3. Introducing blogs and e-Portfolios (blogs.ubc.ca accounts)
Topic	**BC Curriculum and Maker Culture (Sept 24): What do I believe as a Design and Technology Teacher?**
Guiding Questions	• What are the relationships between formal K-12 Technology Education and the informal Maker Movement? • What do I believe as a Design and Technology Teacher?
Readings	1. BC IRPs *Technology Education K-7*, *Technology Education 8-10*, *Technology Education 11-12: Industrial Design* 2. Blikstein, P. (2013). Digital fabrication and 'making' in education: The democratization of invention. https://tltl.stanford.edu/sites/default/files/files/documents/publications/2013.Book-B.Digital.pdf
Activities	1. SWOT analysis of the Maker Movement. 2. Philosophy of Teaching Design & Technology a. TPI cont'd.
Topic	**Culture and Language in the Classroom: Design and Technology (Oct 1): How can be inclusive? How can I help raise the standards for Technology Education in BC?**
Guiding Questions	• How does language contribute to the culture of the Design and Technology classroom? • How can we make the Design and Technology classroom environment and climate accessible and inclusive for all?
Readings	2. Petrina, S. (2007). Classroom management. *Advanced teaching methods for the technology classroom* (pp. 325-352). http://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf a. Read pp. 325-352
Activities	1. Blogs and e-Portfolios cont'd (blogs.ubc.ca) 2. Challenging stereotypes mind mapping activity
Assignment due	**Philosophy of Teaching Technology**
Topic	**Design and Technology in the formal curriculum (Oct 8): How does *my* philosophy conform with the PLOs?**

Guiding Questions:	• What do BC IRPs emphasize as PLOs for Technology Education K-12? • How does *my* philosophy conform with the PLOs?
Readings	1. BC IRPs http://www.bced.gov.bc.ca/irp/subject.php?lang=en&subject=Applied_Skills 2. BC 21st century learning: http://www.gov.bc.ca/premier/attachments/PTC_vision%20for_education.pdf a. Read section on technological literacy 3. BC Education plan: http://www.bcedplan.ca/assets/pdf/bcs_education_plan_2015.pdf 4. New draft curriculum: https://curriculum.gov.bc.ca/
Activities	1. SWOT analysis of BC Applied Design, Skills and Technologies Draft Framework. https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf 2. Introducing Tutorials and video capture apps CamStudio & Camtasia
Topic	**Graphic Design (Oct 15): How well do I transfer my design skills into graphic design?**
Guiding Questions:	• How does graphic design factor into the professionalism of my teaching materials? • What artefacts provide evidence of the transfer of my design skills into graphic design? • What are the key features of a graphic design curriculum for grades 8-12?
Readings	1. Petrina, S. (2007). Communication and planning for instruction. *Advanced teaching methods for the technology classroom* (pp. 1-24). http://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf a. Read pp. 1-24
Activities	1. Investigating and Exploring graphic design applications, including LiveScribe and Camtasia / CamStudio 2. iPad apps for graphic design 3. Design brief challenges 4. Tutorial planning
Topic	**Practice Teaching (Microteaching) and Reflection (Oct 22)**
Guiding Questions	2. Am I prepared? Am I prepared to give and receive sandwich feedback? Am I professional?
Readings	3. Petrina, S. (2007). Creativity and ingenuity, design and problem-solving. *Advanced teaching methods for the technology classroom* (pp. 1-24). http://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf a. Read pp. 123-141
Activities / Assignment	**Microteaching**
Topic	**Practice Teaching (Microteaching) and Reflection (Oct 29)**
Guiding Questions	1. Am I prepared? Am I prepared to give and receive sandwich feedback? Am I professional?
Readings	2. Petrina, S. (2007). Communication and planning for instruction. *Advanced teaching methods for the technology classroom* (pp. 1-24). http://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf a. Read pp. 1-24
Activities / Assignment	**Microteaching**
November 5 & 12: No class for 2 weeks for school practicum	
Topic	**Digital Literacy through Design (Nov 19)**
Guiding Questions	• What is "Digital Literacy"? • How can Design and Technology teachers incorporate Digital Literacy in their classroom?

Readings	"Mapping Digital Literacy Policy and Practice in the Canadian Education Landscape". Media Smarts. http://mediasmarts.ca/sites/mediasmarts/files/publication-report/full/mapping-digital-literacy.pdf
Activities	1. Group summary and reporting of reading. a. Group A: Page 33-39 b. Group B: Page 40-42 c. Group C: Page 43-47 d. Group D: Page 47-50 e. Group E: Page 51-54 2. Rating and Reporting: http://mediasmarts.ca/teacher-resources/digital-literacy-framework/use-understand-create-digital-literacy-framework-canadian-schools-overview
Topic	**TBA (Nov 26)**
	•
Readings	1. Revisit new BC curriculum. Pay close attention to this document: https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/curriculum_intro.pdf 2. School in the cloud: https://s3-eu-west-1.amazonaws.com/school-in-the-cloud-production-assets/toolkit/SOLE_Toolkit_Web_2.6.pdf
Activities	
Topic	**TBA (Dec 3)**
Guiding Questions	•
Activities	1. Introducing inquiry project 2. Work on e-portfolios 3. Work on tutorial
Topic	**Proposing an Inquiry Project (Dec 10)**
Guiding Questions	• What are the stages of inquiry? What are some questions I have about design and Technology Education and teaching, learning and curriculum? Why are these questions significant, and to whom? How would I pursue my particular interest?
Activities	1. Work on inquiry topics 2. Work on e-portfolios 3. Work on tutorial
Topic	**Tutorial Presentations (Dec 17)**
Guiding Questions	• Are the tutorials professional quality?
Activities	1. Tutorial presentations
Assignment due	**Tutorial assignment due**

Participation (Ongoing)
Participation is valued at 20% of your final grade. Participation is interdependent with **preparation** for each class, which involves ***reading*** (highlighting, pagination post-its, margin notes, comments & questions, etc.), ***writing*** and ***speaking*** (discussing, corresponding with peers, chat, etc.), **blogging** and **commenting** on classmates' blogs. ***Challenges*** also are expected to be completed and participated in on their due dates; presentations and assignments should be polished, **creative**, **unique**, and informative. **(20%)**

Participation (20%)

Low----------Avg----------High

Appropriately and accurately participates in readings discussions, reflection, etc.
F----------P

Level of participation in activities and group work is high quality and professional, etc.
F----------P

Total: P / F

My Philosophy of Teaching Design & Technology (450 words / 1 page): [DUE: October 1, 2015]
The intention of this reflective assignment is to encourage you to think clearly and critically about your philosophy of teaching design and technology education. This is a statement of what you believe, and basically of your worldview about education, youth, design and technology. This is living documentation— it necessarily changes and will be rewritten over time. The gist of this is: "I am a work in progress." View your entry from a perspective of preparing a talk rather than writing an essay. In this way, we can describe complex issues in thoughtful ways without being needlessly complicated. If you must quote, please limit to one sentence or so and acknowledge the source. Every word is important. Include **statements and examples** to address the following questions:

a) Biographical and social context: Think about your whole context – personal, social, cultural, economic – in which you became an adult. What factors have influenced your decision to become a teacher?
b) Formal preparation: Do any courses, teachers, or learning experiences stand out? How would incorporate these ideal educational experiences to your own teaching?
c) Curriculum and pedagogy: how do you understand the role of the teacher and student?
d) Technology Education: What key features of the IRPS and PLOs in Technology Education that reflect my practices and beliefs?

Philosophy of Teaching (20%)

Low----------Avg----------High

Biographical and social context: Clear and articulate
F----------P

Formal preparation: Personal educational experiences
F----------P

Technology Education: Responds to IRPs and PLOs
F----------P

Total: P / F

Microteaching and Feedback (5 min): [Due: October 29, 2015]
The intention of this requirement is to help you develop artful and logical approaches to demonstrating and presenting in the classrooms, labs and workshops. This will also provide a tangible way of understanding the importance of small scale planning in curriculum. For each of the microteaching demonstrations that you do, you are required to hand in a lesson plan on the day that you give the demonstration.

Microteaching involves completing a lesson plan or portion of a lesson plan, teaching the lesson or giving a demonstration (or part) to the class, sharing expertise with colleagues, presenting information using appropriate pedagogical approaches and technologies, reflecting on the lesson, and providing feedback to peers. Microteaching will be recorded (videotaped). (Please bring your USB flash drive for documenting and self-evaluation).

1. Complete a 5-minute demonstration in front of the class.
2. Use the Smartboard, Keynote, PowerPoint, Prezi, or other professional-level educational technologies and applications.
3. Prepare to provide and receive feedback from your classmates (details to follow in class).
4. Prepare to have your microteaching and feedback session recorded, so that you may reflect on your teacher experience.
5. Provide reflective summary on your e-portfolio about your experience.

Microteaching Experiences

Low----------Avg----------High

Lesson Planning (comprehensiveness, clarity of objectives, focus)
F----------P

IRPs - Goals and Objectives, Comprehensiveness of Information, Assessment, Questioning, Closure
F----------P

Effectiveness of Lesson Delivery, Motivational Beginning, Voice, Classroom Presence, Non-Verbal Communication, Pacing
F----------P

Visuals, supplementary materials and Quality
F----------P

Total: P / F

Tutorial [Due: December 17, 2015]
Create a tutorial (or small series of lessons) to instruct students on specific design and technology class challenges (e.g., assembly, design, programming, etc.) using Camtasia. The topic must follow the following qualities:

a) Appropriate, appealing, and relevant to students at either the grades 8-10 or 11-12 levels
b) Addresses a challenging procedure. Use screen capture software, CamStudio (CamStudio or Camtasia can be downloaded free through UBC Connect http://elearning.ubc.ca/connect/). Students are also advised to download VideoScribe from Connect. Use screen capture in conjunction with presentation or publishing software such as Publisher or InDesign OR web technologies (Wix, Wordpress, Wikia, Weebly, etc.) to create a professional quality tutorial/unit plan.

c) Relates to and connects the unit/tutorials' learning objectives with either the BC IRPs and PLOs.

The tutorial should include the following elements:

a. **Title/Introduction**: Introduce your tutorial and its learning outcomes.
b. **Procedural Challenge**: What challenge does procedure describe and resolve?
c. **Image. Text & Sound**: Write effective text and insert appropriate images or reference sound files to provide a fully descriptive procedure.
d. **Focus Points:** Provide steps that allow for pause and challenge the students to think through decision trees.
e. **Next steps:** Include next logical steps for the students to pursue after completing the procedure described in the tutorial.
f. **Professional Format**: Uses a variety of digital technologies (interactivity, audio, visual) for tutorial design which are presented through a polished and professional format.
g. **Examples**:

Tutorial (20%)

Low----------Avg----------High

Is it Professional Quality?

Clarity of communication
F----------P

Development and logical flow of procedures
F----------P

Balance of effective animation, still images & text / graphic design
F----------P

Grammar & professional formatting
F----------P

Total: P / F

Blog and E-portfolio [Due: Ongoing]
This assignment involves creating your own website using wordpress on http://blogs.ubc.ca. In this way, you may have a virtual classroom to store your resources (lesson plans, tutorials, CV, etc) that may then be used right away when you are teaching in the classroom environments. The e-portfolio also serves to document your participation in class, your progress and growth as a teacher, technological exemplar to be used for teaching students, and as portfolio to showcase to potential employers. You are expected to build and use the e-portfolio throughout the year. **This first term will serve as the introduction and initial set-up for the e-portfolio**. Your final and completed e-portfolio will be presented in Inquiry III during the summer term. The e-portfolio will include:

Appropriate design framework: You will utilize various wordpress functions to craft a professional e-portfolio that is appropriate for viewing by students, teachers, and potential employers.

Personal Profile page: You will write and post a short biography about your interests and expectations regarding the use of technology. Additionally, you will include a section about your teaching experiences (such as your practicum, or other teaching/learning experiences), resources, and other appropriate links.

Reflective practioners page: Throughout the course you will be responsible for reflecting back on your inquiry experiences and responsibilities. Your task is to analyze your learning during each class and post a small paragraph about what you have learned about yourself, teaching, learning, or technology.

e-Portfolio (20%)

Low----------Avg----------High

Is it Professional ?

Appropriate design – utilize various functions for professional presentation
F----------P

Personal Profile Page – short biography and teaching experiences
F----------P

Reflective practitioners – reflect back on inquiry class experiences; analyze own learning
F----------P

Total: P / F