EDCP 374A (3) **Curriculum and Pedagogy in Design and Technology I**
(3 Credits) (Winter 2018)

Instructor: Theresa Magee
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Coordinating Professor: Dr. Stephen Petrina
Time: M, W from 10:30am - 12 noon
WWW: http://blogs.ubc.ca/dandt

Office Hours: By appointment, M, W

Location: Scarfe Bldg., Room 1106

COURSE DESCRIPTION

This course provides an effective encounter between the "what to teach" and "how to teach." The course focuses on curriculum, learning, and teaching in the new Applied Design, Skills, and Technologies (ADST) cluster in British Columbia. Technology Education in ADST has traditionally been called Design and Technology (D&T) Education and commonly represents the T and E in Science, Technology, Engineering, and Mathematics (STEM) education. Technology Education extends to include other domains within ADST, including ICT and Media Arts. The main goal is to provide the fundamentals for designing curriculum and teaching ADST. One intention is to help students develop a framework for understanding themselves as a teacher, and technology as a field of study and school curriculum. A second major intention will be in providing students with an understanding of what teaching technology entails, in terms of cultural-historical, ecological-natural, existential-spiritual, ethical-personal, socio-political, and technical-empirical dimensions. A third major intention is in preparing students for their extended practicum experience leading up to their eventual role as a classroom teacher.

Purpose of the Course

The purpose of this course is to prepare teacher candidates with the knowledge, attitudes, and skills to enhance learning in the context of teaching technology education, including ICT and Media Arts, in ADST.

COURSE OBJECTIVES

Upon completion of this course, the student should be able to:

1. State the philosophical basis and principles of design, technology, and engineering education, which include ICT and media arts in ADST.
2. Provide a rationale for implementing the study of technology (or design or engineering) at all levels -- elementary, middle school, high school, and adult.
3. Develop ADST, D&T, ICT, Media Arts, and STEM curriculum and instructional strategies.
4. Evaluate appropriate materials and develop a resource file for use in an ADST, D&T, ICT, Media Arts, and STEM course.
5. Using professional graphic design approaches, design curriculum materials that incorporate a variety of instructional media, including video.
6. Evaluate technology curriculum and recommend appropriate revisions based on findings.
7. Demonstrate an appreciation for systematic curriculum and instructional planning.

PARTICIPATION & ASSIGNMENTS

Students will complete the following assignments:

1. Participation: Complete all readings and participate fully in activities, lectures and discussions.
2. Practicum Unit Plan: To be completed after the two-week practicum as it will be a unit that may be taught during the 10-week extended practicum. To include 2 lesson plans from the unit plan.
3. Information, Procedure, and Safety sheets: Produce one set of Information, Procedure, and Safety sheets for the practicum as part of the new ADST curriculum and Unit Plan proposed.

ASSIGNMENT SCHEDULE

Due date	Assignment
Mon, October 29	#1: Procedure, Safety and Information Sheets for Assignment #2.
Mon, December 3	#2: Practicum Unit Plan (based on ADST Curriculum formats) (include Procedure, Safety & Information Sheets from Assignment #1) #3: Two lesson plans from the Unit Plan (Assignment #2)
Wed, December 5	All assignments must be completed.
	NO LATE ASSIGNMENTS ACCEPTED

ASSESSMENT AND MARKS

The course is graded according to the pass/fail system. Regarding pass/fail evaluation, achieving a pass is contingent on a high standard of performance. The standard for a pass within the B.Ed. program is equivalent to a B+ (76%) in UBC's standard marking system.

General Assessment Guidelines	
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 the TEO and 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* 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.

TEXTS

Required:

1. Petrina, s. (2007). *Advanced Teaching Methods for the Technology Classroom.* Hershey, PA: InformationScience Publishing. Download from http://blogs.ubc.ca/dandt/courses/edcp-374/
2. BC Ministry of Education documents: all ADST curriculum documents for Technology Education, ICT, and Media Arts. Download from BC Ministry. https://curriculum.gov.bc.ca/curriculum
3. ITEA. (2000). *Standards for technological literacy.* Reston, VA: author. Download from http://blogs.ubc.ca/dandt/courses/edcp-374/

Recommended:

1. Braundy, M. (2012). *Men & women and tools: Bridging the divide.* Halifax, NS: Fernwood. http://fernwoodpublishing.ca/book/men-women-and-tools https://fernwoodpublishing.ca/files/menandwomentools.pdf
2. de Vries, M. J. (2005). *Teaching about technology: An introduction to the philosophy of technology for non-philosophers.* http://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=1002&context=ncete_publications
3.
4. Crawford, Matthew B. *Shop Class as Soulcraft: An Inquiry Into the Value of Work* (The Penguin Press, 2009)

When possible, handouts are available online for download. However, a photocopying fee will be charged for any hardcopy handouts.

COURSE OUTLINE

Week 1: Overview (Sept. 5)	
	Curriculum & Pedagogy
Topic	- program orientation - coursework expectations - assignment - BC's new curriculum - Standards for the Education, Competence and Professional Conduct of Educators in BC
Guiding Questions	- What are the expectations for teacher candidates` learning process in this course? - What is important for teacher candidates to know? For their students to know? - What is your passion for teaching applied design, skills and technology education? - What's new in ADST? https://curriculum.gov.bc.ca/curriculum/applied-design-skills-and-technologies/whats-new
Activity	Think-Pair-Share
Readings	1. BC's new curriculum: https://curriculum.gov.bc.ca 2. https://curriculum.gov.bc.ca/curriculum-updates 3. https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/starting_points.pdf 4. http://www.bcteacherregulation.ca/Standards/StandardsDevelopment.aspx 5. https://www.bcteacherregulation.ca/documents/AboutUs/Standards/edu_stds.pdf

Week 2: ADST Curriculum (Sept. 10 + 12)	
Topic	ADST: The New Curriculum

Guiding Questions	• A = What do we mean by Applied? What is applied? Minds on? Hearts on? Hands on? What about theory?
	• D = What do we mean by Design?
	• S = What do we mean by Skills? Cognitive Skills? Emotional Skills? Motor Skills?
	• T = What do we mean by Technologies? Which technologies are most important?
	• What is a big idea?
	  o What are the big ideas of Technology Education, ICT, and Media Arts?
	• What is a Core Competency?
	  o What are the core competencies of Technology Education, ICT, and Media Arts?
	• What is a Learning Standard?
	  o What are the learning standards for Technology Education, ICT, and Media Arts?
	• What are the Goals and Rationales for ADST in Technology Education, ICT, and Media Arts?

Activities	• BC Curriculum Unit Planning Template • Concept Maps • Think-Pair-Share • Jigsaw
Readings	1. BC's new curriculum: https://curriculum.gov.bc.ca 2. https://curriculum.gov.bc.ca/curriculum 3. https://curriculum.gov.bc.ca/curriculum

Week 3: ADST Curriculum + Teaching (Sept. 17)	
Topic	C&P: Guiding Features in Technology Education
Guiding Questions	• What's new in ADST?
Activities	• BC Curriculum Unit Planning Template • Concept Maps • Think-Pair-Share • Jigsaw
Readings	1. Petrina, S. (2007). Advanced teaching methods for the technology classroom. Hershey, PA: Information Science Publishing, Download from http://blogs.ubc.ca/dandt/courses/edcp-374/ Chapter 7: Justifying Technology Studies; Chapter 3: Feelings, Values, Ethics and Skills

Week 3: Field Trip to the Museum of Anthropology at UBC (Wed., Sept. 19: 10:30 - 12 noon)	
Topic	C&P: MOA, Technology Education, First Nations, Global
Guiding Questions	• What questions can I ask? • What are my take-aways from this field trip? • How can I plan to use it in future in my teachings? •
Activities	• Guided Activities with Jill Baird, curator-Education and Karen Duffek, curator- Contemporary Visual Arts & Pacific Northwest
Reading	https://moa.ubc.ca/

Week 4: Planning, Learning, Curriculum & Pedagogy (Sept. 24 + 26)	
Topic	1. Communicating and Planning for Instruction 2. Organizing Knowledge for Instruction 3. Instructional Methods and Learning Styles
Guiding Questions	• What are considerations for communication and planning for instruction? • What are some ways to structure and 'teach' lessons to a diverse group of learners? • What environmental and class management strategies can be used to assist diverse learners? • What conditions need to be considered when selecting instructional strategies? How can instructional strategies be undertaken by individual students, partners, or small groups? • What is reflective practice? • How can deliberation be used to assess one's teaching the curriculum, and considerations for pedagogical change?
Activities	• ADST Activities • Design Activities
Readings	1. BC's new curriculum: https://curriculum.gov.bc.ca 2. (Core Competencies) https://curriculum.gov.bc.ca/competencies) 3. Petrina, S. (2007). *Advanced teaching methods for the technology classroom.* Hershey, PA: Information Science Publishing, Chapter 1: Communicating and Planning for Instruction; Chapter 8: Technology Content, Process and Standards; Chapter 9: Curriculum and Instructional Design

Week 5- 6: Planning, Learning, Curriculum & Pedagogy (Oct. 1, 3 and 10)	
Topic	Indigeneity, Technology, Ecology, and Ethical Education with 21st Century
Guiding Questions	• What is Indigeneity? • What is the role of a teacher in a gendered dominant class? • What is ethical education in a diverse classroom with Indigenous and non-Indigenous students? What is the goal of education? • How do you organize instruction towards making meaning, meaning relevant to you as the teacher and your students? • What is 'Place' in Technology Education?

Activities	• ADST Activities • Think-Pair-Share + Jigsaw Activities
Readings	1. Petrina, S. (2007). *Advanced teaching methods for the technology classroom*. Hershey, PA: Information Science Publishing. Page 9: Feedback; Page 10: Reflection; Page 88: (Chapter 3-Feelings, Values, Ethics & Skills) Projection and Reflective Practice; Page 108: Research Methods. Chap. 5, 6, 9.
See G-Drive for Readings in pdf	• Chawla, L. (2015). The benefits of nature contact for children. *Journal of Planning Literature.* Vol. 30(4) 433-452. Risk: • Forth, C.L. (2014). School Supervision. Risk Ed. Volume 19, Issue 1. • See G-Drive: Readings Brussoni, M., Olsen, L. L., Pike, I., & Sleet, D. A. (2012). "Risky play and children's safety: Balancing priorities for optimal child development." *International Journal of Environmental Research and Public Health,* 9(9), 3134–3148.

Monday, October 8 - UBC Closed to observe Thanksgiving

Week 7-10: Unit Planning, Learning, Curriculum & Pedagogy (Oct. 15-Nov. 7)	
Topic	Classroom Management, Classroom Climate
Guiding Questions	• What is management? How can you create a good classroom climate? • Why is classroom management important? • How can safety be woven into the fabric of curriculum? • Why are values important? • Whose values are important?
Activities	BC Curriculum Unit Planning and lesson planning Templates
Readings	Petrina, S. (2007). Advanced teaching methods for the technology classroom. Hershey, PA: Information Science Publishing. Chapters 11: Classroom Management, Facilities Design and Safety Page 88: (Chapter 3-Feelings, Values, Ethics & Skills) Projection and Reflective Practice
Assignment DUE on Monday, Oct. 29	#1: Procedure, Safety and Information Sheets for Assignment #2.

Weeks 11 & 12: Short Practicum Experience: November 13 - 23, 2018

Week 13: Practicum Reflection & Discussion: Teaching Practices continued (Nov. 26)	
Topic	Practicum Reflection and Discussion
Guiding Questions	**Sharing the Practicum Experience** (students to present their learning experience with supporting artifacts including anecdotal report with photos, diagrams or videos, take-away learning, etc.) • What did I learn from my two-week practicum? What went well, what went badly, how can I improve during my contacts with my school advisor(s) to be prepared and ready to teach in my long practicum?
Activities	Practicum Reflection and Discussion with Faculty Advisors: Theresa Magee and Rob Williamson.
Readings	Review: Petrina, *Advanced teaching methods* (Chapter 11: Classroom Management, Facilities, Design and Safety)

Week 13 and 14: Assessment & Evaluation (Nov. 28, Dec. 3, 5)	
Topic	Bring samples of rubrics to class for discussion.
Assignment DUE Monday, Dec. 3	#2: Practicum Unit Plan (based on ADST Curriculum formats) (include Procedure, Safety & Information Sheets from Assignment #1) #3: Two lesson plans from the Unit Plan (Assignment #2)
Dec. 3 Possible Guest Speakers	TBA: Practicum and UBC Education Experience (past students: speakers to be confirmed)
Wed., Dec. 5	**ACTIVITY: Unit Plan assignment presented to class** **All Assignments must be completed.**

PARTICIPATION
Rubric

PARTICIPATION & ASSIGNMENTS FOR GRADING

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.). *Activities* also are expected to be completed and presented on their due dates; presentations and assignments should be polished, creative, and informative.

Participation

Fail-----------------------**Pass**
Appropriately and accurately articulates key constructs and themes in readings, etc.
F-----------------------------P

Reveals an attempt to synthesize knowledge through readings, discussion, design and development of unit/lesson plans and rubrics for assessment, etc.
F----------------------------P

Prepares and plans with innovative and progressive ideas
F----------------------------P

Total: F or P

ASSIGNMENTS

1. **Procedure, Safety and Information Sheets:** Procedure, Safety and Information sheets are standard curriculum documents for teaching in labs and Lab/Workshops. Prepare one set (Procedure + Safety + Information) for a **specific activity** related to your practicum unit plan. Choose an apparatus, software, tool, material, machine or process that you know you will be teaching as part of your practicum unit plan and this document will be included within your unit plan. This is an opportunity for you to demonstrate your expertise in desktop publishing (DTP) and to transfer your design skills to a graphic design medium. Elements and principles of design are crucial **(Chapters 2 and 11). Due: Monday, October 29**

   *Length: Material for Procedures to use the apparatus, etc; Safety information; Information on the apparatus as for example the machine parts = 1-2 pages for each (include in Practicum Unit Plan)

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Procedure, Safety & Information Sheets

Fail ---------------------- Pass

Accuracy & Comprehensiveness of Information
F----------------------------P

Presentation of Information
F----------------------------P

Graphic design principles and Quality
F----------------------------P
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   Total: F or P

2. **Practicum Unit Plan:** Develop a Technology Education, ICT, or Media Arts unit plan that conforms to the Ministry's ADST curriculum. For example: CAD or ACE-It Carpentry; a Unit in Design -- for example: design a Tiny House using Google SketchUp (https://youtube/nir6Qk_sSrw) *include information on Tiny House history, design, and manufacturing. Present work to the class. **Due: Monday, December 3; Presentation to class on Wednesday, Dec. 5.**

   Format: Use the format provided in the Ministry's *Board/Authority Authorized Courses: Requirements and Procedures* and ADST curriculum documents (see examples given). Download template from Ministry: https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/starting_points.pdf

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Practicum Unit Plan

Fail ---------------------- Pass

Introduction, Synopsis & Rationale (Relevance to Technology Education & Students)
F----------------------------P

Organizational Structure (Comprehensiveness)
F----------------------------P

Unit Topic & Descriptions + Learning Outcomes (Articulation w/ ADST, Creativity, Relevance & Comprehensiveness)
F----------------------------P

Instructional & Assessment Components + Learning Resources (Currency & Relevance)
F----------------------------P

Grammar & Format
F----------------------------P
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   Total: F or P

3. **with two lesson plans from the Unit Plan.**

Format: Use the format provided in the Ministry's ADST curriculum documents (see examples given).

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Practicum Lesson Plans (2)

Fail ---------------------- Pass

Organizational Structure (Comprehensiveness)

F----------------------------P

Lesson Planning (comprehensiveness, clarity of objectives, focus) Goals and Objectives, Comprehensiveness of Information

F----------------------------P

Instructional & Assessment Components + Learning Resources (Currency & Relevance)

F------------------------------P

Grammar & Format

F----------------------------P

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Total: F or P