



*Department of Curriculum and Pedagogy*

**EDCP 377A (3) Curriculum and Pedagogy in Design and Technology II  
(3 Credits) (Winter 2015)**

**Instructor:** Theresa Magee  
**Email:** temagee@mail.ubc.ca  
**Coordinating Professor:** Dr. Stephen Petrina

**Office:** Scarfe Bldg., Room 2224  
**Office Hours:** By appointment, M, W  
**Location:** Scarfe Bldg., Room 1106  
**Time:** M from 4:30pm – 7:30pm

**WWW:** <http://blogs.ubc.ca/dandt>

### COURSE DESCRIPTION

This course complements EDCP 374, again providing an effective encounter between the "what to teach" and "how to teach." The course focuses on Design and Technology (D&T) education or the T and E in Science, Technology, Engineering, Arts and Mathematics (STEAM) education. The Curriculum I course focuses on the development of instructional materials and unit plans. This Curriculum II course focuses on lesson planning and practice teaching or microteaching. The main goal is to provide the fundamentals for teaching design, engineering, technology education and information and communication technology. The intention is to help students develop a framework for understanding themselves as a teacher, and technology as a field of study and school curriculum.

### 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.

### COURSE OBJECTIVES

This course aims to help teachers:

1. Demonstrate an appreciation for systematic lesson planning.
2. Develop artful and logical approaches to demonstrating and presenting in the classrooms, labs and workshops.

### PARTICIPATION AND ASSIGNMENTS

**Students will complete the following assignments:**

1. <b>Participation:</b> Complete all readings and participate fully in Activities, Lectures and Discussions.	20%
2. <b>Microteaching and Lesson Plans x 4:</b> 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.	60% - (15% each assignment)
3. Design Brief: STEM/STEAM orientation (groups of 2)	20%

### ASSIGNMENT SCHEDULE

Due date	Assignment
Various dates	Microteaching experiences x 4
Dec. 7 (assignment), Dec. 14 (presentation)	Design Brief: STEM/STEAM orientation
	<b>NO LATE ASSIGNMENTS ACCEPTED</b>

## ASSESSMENT AND MARKS

The course is graded. The standard for a pass within the B.Ed. program is equivalent to a B+ (76%) in UBC's standard marking system.

### EDCP Grading Guidelines July 2008

#### **A level - Good to Excellent Work**

- A+ (90-100%) A very high level of quality throughout every aspect of the work. It shows the individual (or group) has gone well beyond what has been provided and has extended the usual ways of thinking and/or performing. Outstanding comprehension of subject matter and use of existing literature and research. Consistently integrates critical and creative perspectives in relation to the subject material. The work shows a very high degree of engagement with the topic.
- A (85-89%) Generally a high quality throughout the work. No problems of any significance, and evidence of attention given to each and every detail. Very good comprehension of subject and use of existing literature and research. For the most part, integrates critical and creative perspectives in relation to the subject material. Shows a high degree of engagement with the topic.
- A- (80-84%) Generally a good quality throughout the work. A few problems of minor significance. Good comprehension of subject matter and use of existing literature and research. Work demonstrates an ability to integrate critical and creative perspectives on most occasions. The work demonstrates a reasonable degree of engagement with the topic.

#### **B level - Adequate Work**

- B+ (76-79%) Some aspects of good quality to the work. Some problems of minor significance. There are examples of integrating critical and creative perspectives in relation to the subject material. A degree of engagement with the topic.
- B (72-75%) Adequate quality. A number of problems of some significance. Difficulty evident in the comprehension of the subject material and use of existing literature and research. Only a few examples of integrating critical and creative perspectives in relation to the subject material. Some engagement with the topic.
- B- (68-71%) Barely adequate work at the graduate level.

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**NOTE: For UBC's Faculty of Graduate Studies (FOGS), a final mark below 68% for Doctoral students and below 60% for Masters students is the equivalent of a Failing mark.**

#### **C & D level - Seriously Flawed Work**

- C (55-67%) Serious flaws in understanding of the subject *material*. Minimal integration of critical and creative perspectives in relation to the subject material. Inadequate engagement with the topic. Inadequate work at the graduate level.

#### **D level**

- D (50-54%)

#### **F level - Failing Work**

- F (0-49%)

## 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 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 2015/16 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 [www.universitycounsel.ubc.ca/policies/policy73.pdf](http://www.universitycounsel.ubc.ca/policies/policy73.pdf)).

## TEXTS

### Required:

1. Petrina, S. (2007). *Advanced teaching methods for the technology classroom*. Hershey, PA: Information Science Publishing. Download from <http://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf>
2. BC Ministry of Education Documents: All ICT and technology education IRPs. Download from Ministry [http://www.bced.gov.bc.ca/irp/subject.php?lang=en&subject=Applied\\_Skills](http://www.bced.gov.bc.ca/irp/subject.php?lang=en&subject=Applied_Skills)
3. Applied Design, Skills and Technologies Framework: <https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf>
4. ITEA. (2000). *Standards for Technological Literacy*. Reston, VA: Author. Download from <http://www.cust.educ.ubc.ca/programs/tsed/Resources/Standards/TechLitStandards.pdf>

### Recommended:

5. Crawford, M. B. (2009). *Shop class as soulcraft: An inquiry into the value of work*. New York, NY: Penguin.

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

## COURSE OUTLINE: EDCP 377 – Winter 2015

Unit 1: Week 1-4: Guiding Features in Technology Education Teaching Practice	
<b>Week 1 Sept. 14</b>	<b>Introduction: Coursework expectations</b> <ul style="list-style-type: none"> <li>• Assignments</li> <li>• BC IRP Overview, <i>Standards for the Education, Competence and Professional Conduct of Educators in BC</i></li> </ul>
Guiding Question and Activities	<ul style="list-style-type: none"> <li>• What is Technology? What is Design? What is Technology Education?</li> <li>• BC IRP- STEAM: Science, Technology, Engineering, Art, Math</li> <li>• ‘Tech in a Bag’ Activity <a href="https://vimeo.com/47531095">https://vimeo.com/47531095</a></li> </ul>
Readings	<ol style="list-style-type: none"> <li>1. BC IRP Overview</li> <li>2. <i>Standards for the Education, Competence and Professional Conduct of Educators in BC</i> <a href="https://www.bcteacherregulation.ca/Standards/StandardsOverview.aspx">https://www.bcteacherregulation.ca/Standards/StandardsOverview.aspx</a></li> <li>3. Applied Design, Skills and Technologies <a href="https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf">https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf</a></li> </ol>
<b>Week 2 Sept. 21</b>	<b>Communicating and Planning for Instruction</b>
Guiding Question and Activities	<ul style="list-style-type: none"> <li>• What are considerations for communication and planning for instruction?</li> <li>• Design Challenge activity (putting on the Student’s hat while holding onto the Teacher’s hat)</li> </ul>
Readings	<ol style="list-style-type: none"> <li>1. Applied Design, Skills and Technologies <a href="https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf">https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf</a></li> <li>2. Petrina, <i>Advanced teaching methods</i> (Chapter 1)</li> </ol>
<b>Week 3 Sept. 28</b>	<b>Organizing Knowledge for Instruction</b> <ul style="list-style-type: none"> <li>• Guest Lecturer: Jim Scoten presenting the STEM curriculum from Templeton Secondary</li> </ul>

Guiding Question and Activities	How do we expand or transition from TE to STEM? Working in groups: 'Design Project and Brief' assignment • TBA
Readings	1. BC IRPs (Applied Skills + Art, Math and Science Math subject areas) 2. Applied Design, Skills and Technologies <a href="https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf">https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf</a> 3. Petrina, <i>Advanced teaching methods</i> (Chapters 2 + 7)
<b>Week 4 Oct. 5</b>	<b>Instructional Methods and Learning Styles</b> Lecture and Working activity: -- STEAM: Design Project and Brief Assignment With TM and Guest Lecturer: Jim Scoten
Guiding Question and Activities	• What should a repertoire of design and technology teaching practices include? • Working in groups: 'Design Brief' assignment • TBA
Readings	• Petrina, <i>Advanced teaching methods</i> (Chapter 4: Instructional Methods and Learning Styles) Design Brief: p. 147-150.
<b>Week 5 Oct. 12</b>	<b>Thanksgiving Holiday – NO CLASSES</b>
<b>Unit 2: Week 6-7: Teaching Practices</b>	
<b>Week 6 Oct. 19</b>	<b>Microteaching</b>
<b>Assignment Due</b>	DUE: #1 Microteaching: 'Expert' demonstration or Starter Activity (2 min. demo with possible student participation, with lesson plan handed in at beginning of class)
Activities	Microteaching
Readings	Petrina, <i>Advanced teaching methods</i> (Chapters 1, 2, 4 + 11)
<b>Week 7 Oct. 26</b>	<b>Microteaching</b>
<b>Assignment Due</b>	DUE: #2 Microteaching: 5-minute Demonstration (eg: classroom, CAD, workshop – hand or power tool) with lesson plan handed in at beginning of class)
Activities	Microteaching
Readings	Petrina, <i>Advanced teaching methods</i> (Chapters 1, 2, 4 + 11)
<b>Week 8 &amp; 9: 2-week Short Practicum Experience (November 2 – 13, 2015): Teaching Practices</b>	
<b>Unit 4: Week 10 &amp; 11 – Practicum Reflection &amp; Discussion: Teaching Practices continued</b>	
<b>Week 10 Nov. 16</b>	<b>Practicum Experience Sharing</b> (students present their learning experience with supporting artifacts including anecdotal report with photos or videos, take-away learning, etc.)
Activities	4-minute presentation with 1 minute for Q&A from peers.
Readings	NA
<b>Week 11 Nov. 23</b>	<b>Microteaching</b>
<b>Assignment Due</b>	DUE: #3 Microteaching: 5-minute Demonstration with lesson plan
Activities	Microteaching
Readings	Petrina, <i>Advanced teaching methods</i> (Chapters 1, 2, 4 + 11)

Unit 5: Week 11-14: Assessment	
<b>Week 12 Nov. 30</b>	<b>Microteaching</b>
<b>Assignment Due</b>	DUE: #4 Microteaching: 5-minute Demonstration with lesson plan
Guiding Question and Activities	Microteaching
Readings	Petrina, <i>Advanced teaching methods</i> (Chapters 1, 2, 4 + 11)
<b>Week 13 Dec. 7</b>	<b>Design Briefs</b>
<b>Assignment Due</b>	<b>Design Brief</b>
Guiding Question and Activities	<ul style="list-style-type: none"> <li>• How can assessment strategies be used to be a reflective practitioner?</li> <li>• What various kinds of questions do teachers use in your teachable subject(s)?</li> </ul>
Readings	1. Petrina, <i>Advanced teaching methods</i> (Chapter 10) 2. <a href="http://www.merga.net.au/documents/RP72007.pdf">http://www.merga.net.au/documents/RP72007.pdf</a>
<b>Week 14 Dec. 14</b>	<b>Presentation of Design Brief project</b>

## PARTICIPATION

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. 1-----3-----5
Reveals an attempt to synthesize knowledge through readings, discussion, design and development of unit/lesson plans and rubrics for assessment, etc. 1-----5.5-----10
Prepares and plans with innovative and progressive ideas 1-----3-----5
<b>Total: x / 20</b>

**ASSIGNMENTS**

**1. Microteaching and Lesson Plans x 4:** 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 (**Chapters 1-3**).

**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 (video taped). (Please bring your USB flash drive for documenting and self- evaluation). **DUE: Various dates throughout the term**

Each lesson plan should adhere to the template of items provided in the book (*Advanced teaching Methods*): Title, Introduction, Objectives (Goals) and Major Message, Lesson Strategy, Instructional Materials, Tools Materials, Procedure, Assessment, Special Safety, Integration, Social Context (Relevance), New Terms, Questions, Summary. Lesson Plan Length: 1-2 Pages

**Microteaching Experiences**

	Low-----Avg-----High
Lesson Planning (comprehensiveness, clarity of objectives, focus)	
IRPs - Goals and Objectives, Comprehensiveness of Information, Assessment, Questioning, Closure	1-----3-----5
Effectiveness of Lesson Delivery, Motivational Beginning, Voice, Classroom Presence, Non-Verbal Communication, Pacing	1-----3-----5
Visuals, supplementary materials and Quality	1-----3-----5
<b>Total:</b> xx / 15	

**2. Design Brief:** Create a Design Brief to present a design challenge. **Create a professional design brief.** Choose a topic that: a) is coordinated with your peers; b) is appropriate, appealing, and relevant to students at grades 8-10 or 11-12 levels; c) addresses a design challenge. The Design Brief format should adhere to the format below and have a STEM/STEAM orientation. (**Groups of 2**) (**20%**)

Names: \_\_\_\_\_

Date: December 2015

Design Brief Title: \_\_\_\_\_

Total: \_\_\_\_/20 \_\_\_\_

**University of British Columbia**  
**EDCP 377**  
**Design Brief Assessment**

The Design Brief must be for a specific grade (e.g., grade 8), must involve a technology challenge, and must be planned for as part of a larger project brief. The design challenge can be either dynamic or static in nature. All information should be provided—The Design Brief must be comprehensive enough to be self-sufficient. Create a progressive design challenge OR redesign/rethink an existing challenge. **(Chapters 5 and 9 in Dr. Petrina's book)**

Design Brief Format: Use format provided

Criteria for marking:

- Content: (Format, Comprehensiveness, Substance, Depth of Knowledge, Graphic layout and Appropriateness)
- Creativity: (Creativity in strategy, Presentation, Coherence)
- Originality

Component / Level	Redo (1-2)	Average (3)	High (4-5)	Total /20
<b>Professional Quality</b> ✓ Presentation of Content ✓ Desk Top Publishing ✓ Images + Text	Quality is compromised Materials look unprofessional	Quality is OK Attempt to meet Standard	Extremely professional High standard of quality for materials	5
<b>Format</b> ✓ Title ✓ Background Context ✓ Problem ✓ Constraints ✓ Design Consideration ✓ Sequence ✓ Related Studies ✓ Management Issues ✓ Self-Evaluation ✓ Assessment	Format is incomplete Certain aspects are missing	Format is generally complete Most aspects of format are OK	All aspects of format are outstanding Format is clear and thorough	5
<b>Content</b> ✓ Relevance ✓ Comprehensiveness ✓ Progressiveness	Content is sparse Content is inappropriate for Grade level	Content is adequate ✓ Content is conventional	✓ Content is very relevant and thorough Content is fresh and exciting	5
<b>Resources</b> ✓ Applicability ✓ Relevance ✓ Volume	Few resources Inappropriate resources	Resources are somewhat thoughtful ✓ Adequate volume of resources	✓ Resources are extremely thoughtful Large volume of resources	5