FACULTY OF EDUCATION

DEPARTMENT OF CURRICULUM & PEDAGOGY

EDCP 377 301

Design & Technology II
Secondary: Curriculum and Pedagogy

(3 Credits) (Winter 2019)

General Course Outline

Location: SCARFE Room 1106
Time: Friday - 9:00am - 12 Noon

Academic staff:
        Dr. Tony Edwards
        Office: Scarfe Bldg., Room 1106
        Email: anthony.edwards@ubc.ca
        Meetings: by appointment

        Coordinating Professor: Dr. Stephen Petrina
        WWW: http://blogs.ebc.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 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, Arts and Mathematics (STEAM) education. Technology Education extends to include other domains within ADST, including ICT and Media Arts.

The Design & Technology1 course (EDCP 374) focuses on the development of instructional materials, unit and lesson plans. This course (EDCP 377) 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, including ICT (Information and Communications Technology) and Media Arts, in ADST.

COURSE OBJECTIVES

This course aims to help teachers:

1. Demonstrate an appreciation for systematic lesson planning.
2. Demonstrate an appreciation and understanding of the design process.
3. Develop artful and logical approaches to demonstrating and presenting in the classrooms, labs and workshops.
4. Develop a design brief, an instructional material, as part of the planning process in the design of curriculum.

UBC Values

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available here (https://senate.ubc.ca/policies-resources-support-student-success)

TEXTS

Required:

1. Petrina, S. (2007). *Advanced teaching methods for the technology classroom.* Hershey, PA: Information Science Publishing. Download from https://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf
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. Applied Design, Skills and Technologies Framework: https://curriculum.gov.bc.ca/sites/curriculum.gov.bc.ca/files/pdf/applied-skills.pdf

Recommended:

1. Brown, R. A., & Brown, J. W. (2010). What is technology education? A review of the "Official Curriculum". *The Clearing House*, *83*(2), 49-53.
2. Courtney, M., Lee, K., McGlashan, A., Toso, M., & Neveldsen, P. (2017). Initial teacher education students' conceptions of creativity in technology and science education: A large-scale New Zealand study. *Australasian Journal of Technology Education*, *4*(1).
3. Crawford, M. B. (2009). *Shop Class as Soulcraft: An inquiry into the value of work.* New York, NY: Penguin.
4. De Vries, M. J. (Ed.). (2018). *Handbook of technology education.* Springer.
5. Haynes, A. (2007). *100 ideas for lesson planning.* New York Continuum International Publishing Group
6. ITEA. (2000). *Standards for technological literacy.* Reston, VA: author. https://www.iteea.org/File.aspx?id=42513&v=2a53e184
7. Nagro, S. A., Fraser, D. W., & Hooks, S. D. (2019). Lesson Planning With Engagement in Mind: Proactive Classroom Management Strategies for Curriculum Instruction. *Intervention in School and Clinic*, *54*(3), 131-140.
8. Owen-Jackson, G. (2013). *Learning to teach design and technology in the secondary school: A companion to school experience.* Routledge.

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

COURSE OVERVIEW

Week	Date	Content	Text/readings
1	September 6	Welcome & orientation (Coursework expectations) Guiding Features in Technology Education Teaching Practice #1 • What does it mean to be an educator? • What does teaching look like? • BC's new curriculum, *Standards for the Education, Competence and Professional Conduct of Educators* in BC • Assignments *Activities:* • K.W.L. • Self-Portrait - 5-minute presentation (18 students)	1. BC's new curriculum: https://curriculum.gov.bc.ca 2. https://bctf.ca/NewTeachers.aspx?id=31794
2	September 13	Guiding Features in Technology Education Teaching Practice #2 Enacting the curriculum: Constructing plans for pedagogy • Where does our planning begin • What elements contribute structure to our planning for teaching & learning? How do teachers inform their practice? *Activities:* • ADST Activities • Visit the Education library	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 Bruce Nussbaum, one of Design Thinking's biggest advocates (04/05/11) https://www.fastcompany.com/1663558/design-thinking-is-a-failed-experiment-so-whats-next
3	September 20	Guiding Features in Technology Education Teaching Practice #3 • How do we locate and promote the significance of learning in and around ADST? • What are the distinguishing features of teaching and learning ADST? *Activities:* • Observations • Interpretations • Exploring possibilities for teaching	• BC's new curriculum: https://curriculum.gov.bc.ca • (Core Competencies) https://curriculum.gov.bc.ca/competencies • Petrina, S. (2007). *Advanced teaching methods* (Chapters 2 + 7) • http://www.technologystudent.com/designpro/problem1.htm • Owen-Jackson, G. (2013). *Learning to teach design and technology in the secondary school: A companion to school experience.* Routledge. Chapter 1
4	September 27	Guiding Features in Technology Education Teaching Practice #4 Instructional Methods and Teaching Practices • What should a repertoire of design and technology teaching practices include?	1. Petrina, Advanced teaching methods (Chapter 4: Instructional Methods and Learning Styles) 2. Owen-Jackson, G. (2013). *Learning to teach design and technology in*

		• What are the knowledges of ADST and how can these be promoted in classrooms? *Activities:* • ADST Activities: preparing for micro-teaching • Design Activities • Planning a plan	*the secondary school: A companion to school experience*. Routledge. Chapter 7
5	October 4	Teaching Practice *Activities:* • Micro-teaching #1 - Hand Tools • Microteaching – presentation in class to be videotaped with peer-review the following week • Lesson Plan handed in previous week, Sept. 28	1. Petrina, *Advanced teaching methods* (Chapters 1, 2, 4 + 11)
6	October 11	Feedback and Reflection *Activities:* • **Feedback and Reflection:** In the small group session you will meet with 4-5 of your peers and will receive feedback on your teaching **and** give feedback to the other group members on theirs. Prepare a **short analysis** (1 page) of reflections on your first lesson along with an assessment of several aspects of your microteaching that you need to work on in the future. • **Your video analysis / reflection** will be handed in to your instructor and shared with a group of peers for feedback. We will be expecting to see continued growth through the term as well as progress on aspects of your teaching that that require more work.	1. Petrina, Advanced Teaching Methods (Chapter 1 and 4) 2. https://blogs.ubc.ca/dandt/files/2014/07/Petrina2007.pdf
7	October 18	Teaching Practice *Activities:* • **Micro-teaching #2 - Machinery** (own hand-held power tool or machinery available in class) Microteaching – presentation in class to be videotaped with peer-review. • **Lesson Plan** handed in previous week, **Oct. 11**	1. Petrina, *Advanced teaching methods* (Chapters 1, 2, 4 + 11)
8	October 25	**Friday Oct. 25: NO CLASSES** **BCTEA Conference** Alpha Secondary School, Burnaby	
9 - 10	October 28 – November 8	School-based orientation practicum - short	
11	November 15	Classroom Management *Activities:* • Lecture/discussion: Classroom Management • Review of case studies & scenarios	1. Petrina, Advanced teaching methods (Chapter 1: The Concept of Knowledge Media: Past and Future, Chapter 2: Organizing Knowledge for Instruction, Chapter 4: Instructional Methods and Learning Styles, Chapter 11: Classroom Management, Facilities, Design and Safety) 2. Nagro, S. A., Fraser, D. W., & Hooks, S. D. (2019). Lesson Planning With

			Engagement in Mind: Proactive Classroom Management Strategies for Curriculum Instruction. *Intervention in School and Clinic*, *54*(3), 131-140.
12	November 22	Teaching Practice *Activities:* • **Micro-teaching #3 - Computer based** (AutoCADD, PowerPoint, Google Sketch Up, etc.) • Microteaching – presentation in class to be videotaped with peer-review • **Lesson Plan** handed in previous week, **Nov. 15**	
13	November 29	Guest Speaker: TBA	
14	December 6	Teaching Practice *Activities:* • **Micro-teaching #4 - STEM, coding or Robotics** • Poster presentation session – communicating learning intentions, procedural & conceptual underpinnings • **Lesson Plan** handed in previous week, **Nov. 29** • **Wrap-up –** class members have an opportunity to display and discuss how they would approach the planning for teaching their selected topic while also talking to their recent insights to planning for ADST learning.	

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.

POLICIES

Policies regarding attendance and missed or late assignments are 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 www.universitycounsel.ubc.ca/ policies/policy73.pdf).

PARTICIPATION AND ASSIGNMENTS

Students will complete the following assignments:

1. **Participation**: Complete all readings and participate fully in activities, lectures and discussions.	25%
2. **4x - Microteaching and Lesson Plans:** 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 a week before the demonstration.	60% (15% each assignment: planning and presentation)
3. Reflection for #1 Microteaching (groups of 4)	15%

ASSIGNMENT SCHEDULE

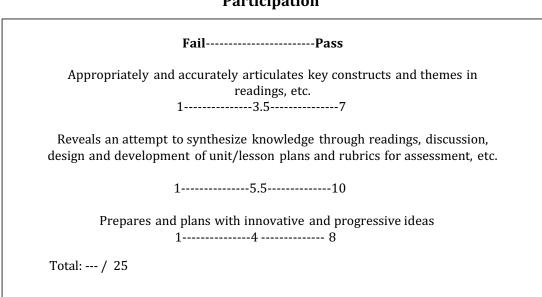| |
|---|
| **Micro-teaching presentations** x 4, with a **lesson plan** for each handed in a week prior to the presentation. |
| **Due Dates**
Micro-teaching presentations
4 dates for presentation: Friday
• **October 4**: Hand Tool (eg. Vernier Caliper, chisels, etc.)
• **October 18**: Machinery (hand-held power tool or machinery available in class)
• **November 8**: Computer based (eg. AutoCADD, PowerPoint, etc.)
• **December 6**: Choice of coding, unplugged, Lego Mindstorm, VEX robotics or games design. |
| **Feedback and Reflection** |
| **Due Dates**
Reflection for #1 Microteaching
October 11: In-class work for Feedback and Reflection
1-page **short analysis due by Oct. 18** (no class on this date) |

Please be aware that late assignments will not be accepted.

ASSESSMENT

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.
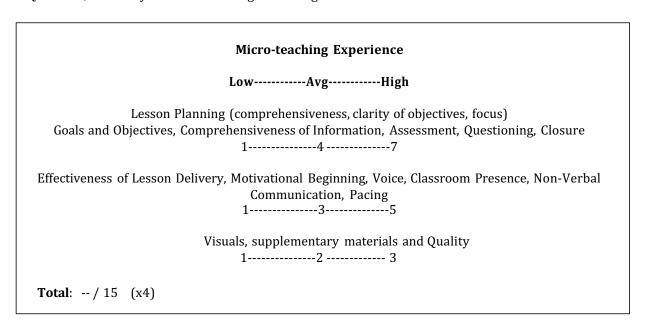
Participation

Fail-----------------------**Pass** Appropriately and accurately articulates key constructs and themes in readings, etc. 1---------------3.5---------------7 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---------------4 -------------- 8 Total: --- / 25

Assignments

1. **Microteaching and Lesson Plans x4:** 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 a week before your presentation date **(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).

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

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Micro-teaching Experience

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

Lesson Planning (comprehensiveness, clarity of objectives, focus)
Goals and Objectives, Comprehensiveness of Information, Assessment, Questioning, Closure
1---------------4 --------------7

Effectiveness of Lesson Delivery, Motivational Beginning, Voice, Classroom Presence, Non-Verbal Communication, Pacing
1---------------3--------------5

Visuals, supplementary materials and Quality
1---------------2 ------------- 3

Total: -- / 15 (x4)

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2. **Feedback and Reflection:** In the small group session you will meet with 4-6 of your peers and will receive feedback on your teaching **and** give feedback to the other group members on theirs. Prepare a **short analysis** (1 page) of reflections on your first lesson along with an assessment of several aspects of your microteaching that you need to work on in the future. Your video analysis / reflection will be handed in to your instructor and shared with a group of peers for feedback. We will be expecting to see continued growth through the term as well as progress on aspects of your teaching that that require more work **(Chapters 1 and 4).**

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.

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   (50-54%) Flaws or deficits in understanding. Unable to integrate broad orientations towards language and learning

F level - Failing Work

F   (0-49%) Inadequate for successful completion of the course or submitted beyond the final date of acceptance or not all required work provided for assessment. Reveals an inadequate or lack of engagement with learning experiences in the course and an unwillingness or inability to participate appropriately.