

ASHA 421: "Invention"

Winter 2018

Lectures: Tues/Thurs 9:30-10:45 AM

Location: TI Learning Studio D

Instructors	Office Location	Email
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COURSE WEBPAGE

Accessible through MyUofC – this course will be offered in the Desire2Learn (D2L) learning management system, specifically for posting detailed office hours and assignments, submitting assignments and posting grades.

COURSE DESCRIPTION

Everything that is not nature was designed by somebody. Our ability to invent is fundamental to our own humanity; while there are many myths surrounding innovation and invention, in practice it stems from collaboration, failure, and persistence. This course will examine the nature and development of conceptual and technological invention using a practice-based approach.

COURSE LEARNING OBJECTIVES

The course learning objectives are centred around three critical questions.

<i>What is invention and why do we invent?</i>	The definition of invention, and how it plays with human creativity. How different disciplines (science, engineering, humanities and arts) conceptualize invention. How invention may lead to incremental or radical change.
<i>What supports invention?</i>	The infrastructure needed for invention and design, including socio-cultural factors such as idea ownership, addressing societal needs, and end-user feedback. How place facilitates and triggers invention. How/why the place of invention has changed throughout history. Also, the role of multi-disciplinary teams and value of teamwork in invention.
<i>How do we invent?</i>	Variations on the design process, as expressed through different models. The importance of iteration and design refinement. Design communication and representation as a driver of invention.

By exploring these questions, students will leave this course able to...

- Describe and appreciate the complex social, cultural, and contextual factors that support or influence invention and design.
- Apply idea generation methods to come up with a quantity and variety of novel ideas on a given prompt.
- Ask questions about a design problem to better understand the constraints and assumptions behind it.

- Support the development of constructive teams and teamwork.
- Describe and represent at least one theoretical model for the design process and apply this to their own inventive experience.
- Give, solicit, and iterate based-on constructive and targeted feedback.
- Express design ideas to an external audience using diverse representations, including writing, oral presentation, and visual or physical prototypes.

ASSIGNMENTS AND EVALUATION

There are 4 major assignments in this course that will be part of the course final grade. These assignments and their weighting towards the final grade are listed below. Detailed descriptions of these assignments, their sub-components and expected performance criteria will be provided in supplemental course materials.

- **Design Journal** (Individual) – 20%
Each student will keep a journal throughout the term to visually document their innovation process, sources of inspiration, and reflections. We will evaluate your design journal in four installments. Due dates for each installment are:
 - Friday January 19 at 11:59 pm
 - Friday February 9 at 11:59 pm
 - Friday March 2 at 11:59 pm
 - Friday March 30 at 11:59 pm
- **Invention Medley** (Group) – 15%
Each student will select six mini-assignments, each challenging them on a different innovation skill or fundamental knowledge (creative mind-set, prototyping, design communication, critique, innovation infrastructure)
Final Due Date: January 30 & February 1 (in class)
- **Innovation Tournament** (Group) – 15%
Students will participate in a week-long design hackathon, applying what was learned in your invention medley and before beginning the invention project. During this week, we'll challenge teams to complete short, focused design tasks on-the-spot, sprinting to the "finish line" to share their work.
Due Date: February 16 (in class)
- **Invention Project** (Teams – 2 to 3) – 50% (broken down into 6 components outlined below)
 - **Team contract** (3%)
Due Date: February 16 at 11:50 p.m.
 - **Pitch** (5%) – a 2-minute presentation to the class of your proposed invention
Due Date: March 1 (in class)
 - **Project Plan** (7%) – a outline of your project
Due Date: March 9 at 11:59 pm
 - **Interim Critique** (10%) – a 10-minute presentation to the class to gain feedback on your invention prototype v.1.0
Due Date: March 20 & March 22 (in class)
 - **Final Presentation** (10%) – a 10-minute presentation to a "panel of experts" on your invention prototype v.2.0
Due Date: April 3 & 5 in class
 - **Final Report** (15%) – a 5-page paper describing the details of your invention
Due Date: April 11 at 11:59 pm

There is no registrar scheduled final exam in this course.

GRADING SYSTEM

A+	96-100
A	90-95
A -	85-89
B+	80-84
B	75-79
B-	70-74
C+	65-69
C	60-64
C-	55-59
D	50-54
F	0-49

Policy for Late Assignments

Assignments submitted after the deadline may be penalized with the loss of 5% per day. Late assignments will not be accepted after 5 days past the due date.

ADDITIONAL INFORMATION

Freedom of Information and Protection of Privacy Act

This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIP). As one consequence, students should identify themselves on all written work by using their ID number. You will be required to provide a piece of picture identification in order to pick up an assignment or look at a final exam.

For more information see <http://www.ucalgary.ca/secretariat/privacy>.

Plagiarism

Using any source whatsoever without clearly documenting it is a serious academic offense. Consequences include failure on the assignment, failure in the course and possibly suspension or expulsion from the university.

You must document not only direct quotations but also paraphrases and ideas where they appear in your text. A reference list at the end is insufficient by itself. Readers must be able to tell exactly where your words and ideas end and other people's words and ideas begin. This includes assignments submitted in non-traditional formats such as Web pages or visual media, and material taken from such sources. Please consult your instructor if you have any questions regarding how to document sources.

Internet and Electronic Communication Device Information

Electronic communication devices are permitted in this class. Some class activities will require the use of electronic devices.

Academic Misconduct

For information on academic misconduct and the consequences thereof please see the current University of Calgary Calendar at the following link: <http://www.ucalgary.ca/pubs/calendar/current/k.html>

Academic Accommodation Policy

The student accommodation policy can be found at: <http://ucalgary.ca/access/accommodations/policy> Students needing an Accommodation because of a Disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities <http://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>. Students needing an Accommodation based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to either course instructor.

Emergency Evacuation and Assembly Points

Please note the evacuation points for this particular classroom. All classrooms on campus exit to specific places in case of emergency. The emergency assembly points differ depending upon where your classroom is located. For information on the emergency evacuation procedures and the assembly points see <http://www.ucalgary.ca/emergencyplan/assemblypoints>

"SAFEWALK" Program

Campus Security will escort individuals day or night -- call 403-220-5333 for assistance. Use any campus phone, emergency phone or the yellow phone located at most parking lot booths.

Faculty of Arts Program Advising and Student Information Resources

Have a question, but not sure where to start?

The Arts Students' Centre is the overall headquarters for undergraduate programs in the Faculty of Arts. The key objective of this office is to connect students with whatever academic assistance they may require.

In addition to housing the Associate Dean (Undergraduate Programs and Student Affairs) and the Associate Dean (Teaching, Learning & Student Engagement), the Arts Students' Centre is the specific home to:

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|------------------------------------|-----------|--------------------------------|
| • Program advising | Location: | Social Sciences Room 102 |
| • Co-op Education Program | Phone: | 403-220-3580 |
| • Arts and Science Honours Academy | Email: | ascarts@ucalgary.ca |
| • Student Help Desk | Website: | arts.ucalgary.ca/undergraduate |

For registration (add/drop/swap), paying fees and assistance with your Student Centre, contact Enrolment Services at 403-210-ROCK [7625] or visit them at the MacKimmie Block.

Contacts for the Students' Union Representative for the Faculty of Arts:

arts1@su.ucalgary.ca

arts2@su.ucalgary.ca

arts3@su.ucalgary.ca

arts4@su.ucalgary.ca

For your student ombudsman, see: <http://www.ucalgary.ca/provost/students/ombuds>