

ASHA421 - Invention
Winter 2014
Lectures: Tues/Thurs – (9:30-10:45 am)
Location –

Instructors	Office Location	Phone	Email	Office Hours
Dr. Dave Cramb	SA229	403-220-5340	dcramb@ucalgary.ca	TBA*
Dr. Leslie Reid	BI 570	403-220-7405	lfreid@ucalgary.ca	TBA*

*We will set office hours in the first week of the semester after we have identified times that are most convenient for students in ASHA421.

Course Webpage

Accessible through My UofC – this course will be offered in the Desire2Learn (D2L) learning management system.

Course Description

From the slingshot to steam power to intellectual property, from prophets to scientists to novelists; the theory and practice of invention looms large in human history and is of particular importance to the present age. This course will examine the nature and development of technological, conceptual, and linguistic invention in a variety of contexts.

Course Learning Objectives

The course learning objectives are centered around 6 Big Ideas and Understandings.

Big Idea	Understandings (Students will understand...)
Discovery, Invention and Innovation	How scientific discoveries and inventions are related. The relationship between discovery, invention and innovation.
(Is?) Necessity is the mother of invention	The needs that drive the creation of inventions. How necessity has influenced inventions throughout history.
Defining Invention	The definition of an invention. How different disciplines (science and engineering, humanities and arts) conceptualize invention.
Places of Invention	How place facilitates and triggers invention. How/why the place of invention has changed throughout history.
Modern Inventions	Current inventions are changing the way we think and live today. the next great inventions.
Ingredients of invention	The key components of inventions. The inventive process.

Through exploring these big ideas and understandings of invention, the specific intended learning outcomes for students at the end of the course are:

- To explain and describe the complexity of the process of inventions – drawing on both historical and modern inventions.
- Explain and discuss the inventive process and components of inventive thinking, and whether the inventive mind is innate, learned or both.
- Describe historical and modern inventions that have affected society and what that affect has been.
- Apply and synthesize the ‘components of inventive thinking’ to an invention proposal.
- Articulate (verbally and written) and enhance their inventive thinking process
- Reflect and articulate aspects of their own thinking to those identified as components of inventive thinking.

Textbooks and Readings

Burke, J. (2007). *Connections*. Simon & Shuster, 320 pp.

Assignments and Evaluation

There are 6 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.

- Weekly Idea diary (Individual) -20%
This assignments will be completed in four installments, due dates for each installment are: Friday January 31st at 5 pm, Friday February 28 at 5 pm, Friday March 28 at 5 pm, Thursday April 10 at 5 pm
- Invention project (Individual) – 25%
Due Date for final project: Friday April 11 at 11:59 pm
- Invention Case Study #1 presentation (Group) – 15%
Due Date: February 11 (in class)
- Summary of learning from case study presentations (Individual) – 10%
Due Date: Monday February 24 at 5 pm
- Invention Case Study #2 presentation (Group) – 20%
Due Date: April 1 (in class)
- Summary of learning from case study presentations (individual) – 10%
Due Date: Monday April 7 at 5 pm

There is no registrar scheduled final exam in this course.

Grading System

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

Policy for Late Assignments

Assignments submitted after the deadline may be penalized with the loss of 10% per day. Late assignments will not be accepted after 5 days past the due date.

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. Also 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 also <http://www.ucalgary.ca/secretariat/privacy>.

Class Schedule

Week	Date	Topic
1	Jan 9	Overview and Intro to ASHA421. Creative process activity
2	Jan 14	Components of Invention / Inventions in our everyday lives
	Jan 16	Critical thinking, asking questions, idea diary (intro)
3	Jan 21	Definitions: Invention, Discovery, Innovation and Creativity
	Jan 23	Inventions in History
4	Jan 28	Inventions in History
	Jan 30	Necessity and Invention
5	Feb 4	Group work time for Invention Case Study #1
	Feb 6	Group work time for Invention Case Study #1
6	Feb 11	Case Study Presentations
	Feb 13	Case Study Debrief
FEBRUARY 17-21: READING DAYS – NO CLASSES		
7	Feb 25	Modern and Future Inventions
	Feb 27	Components of Invention / Becoming an Inventor / Connecting Creativity and Invention
8	Mar 4	Perspectives of Invention: The Natural World (Dr. Tony Russell)
	Mar 6	Perspectives of Invention: GUEST Lecturer (TBA)
9	Mar 11	Perspectives of Invention: GUEST Lecturer (TBA)
	Mar 13	Discussion of perspectives of invention
10	Mar 18	Modern and Future Inventions / Interpolation vs Extrapolation

	Mar 20	Recapitulation of Invention
11	Mar 25	Group work time for Case Study #2
	Mar 27	Group work time for Case Study #2
12	Apr 1	Case Study #2 Presentations
	Apr 3	Case Study Debrief
13	Apr 8	Building Inventors: Apple and Xerox Case studies
	Apr 10	Building Inventors: Inventive thinking: innate or learned?

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

If you are a student with a disability who may require academic accommodation, it is your responsibility to register with the Student Accessibility Services (220-8237) and discuss your needs with your instructor no later than fourteen (14) days after the start of the course. For further information, please see <http://www.ucalgary.ca/access/>

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.

Student Representation

There are now four Arts reps because of the amalgamation, with the email addresses being arts1@su.ucalgary.ca, arts2@su.ucalgary.ca, arts3@su.ucalgary.ca, and arts4@su.ucalgary.ca. Please contact them if you have questions related to Students Union matters, events, or concerns.

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

Faculty of Arts Program Advising and Student Information Resources

- Have a question, but not sure where to start? The new Faculty of Arts Program Information Centre (PIC) is your information resource for everything in Arts! Drop in at SS102, call us at 403-220-3580 or email us at artsads@ucalgary.ca. You can also visit the Faculty of Arts website at <http://arts.ucalgary.ca/undergraduate> which has detailed information on common academic concerns.
- For program planning and advice, contact the Student Success Centre (formerly the Undergraduate programs Office) at (403) 220-5881 or visit them on the 3rd Floor of the Taylor Family Digital Library
- 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 Library Block.