

MPM16B

Introduction to Computation for Experience Design

Times and rooms:

Monday: 9-12pm / Section 021 / RCC-359A

Wednesday: 12-3pm / Section 011 / RCC-359A

Instructor: David Bouchard**Email:** david.bouchard@ryerson.ca**Office:** RCC-307**Class website:** <http://www.ryerson.ca/~d2boucha/mpm16>

Description

This foundational studio class will introduce students to fundamental concepts, techniques and strategies for the production of computer mediated art works. The studio will challenge students to move beyond the role of consumers of software into the position of reflective creators of experiences. Integrated with Studio II: Research for Experience Design this hands-on course will allow students to investigate the interplay between creative expression and technological capability. A variety of conceptual and practical approaches to virtual, hybrid and physical media practices will be explored. Emphasis will be placed on computer and coding literacy as well as constructing and evaluating innovative creative forms and media artifacts.

The class will be centred around learning the Processing development environment: *“Processing is an open source programming language and environment for people who want to program images, animation, and interactions. It is used by students, artists, designers, researchers, and hobbyists for learning, prototyping, and production. It is created to teach fundamentals of computer programming within a visual context and to serve as a software sketchbook and professional production tool”* [processing.org]

Objectives

By the end of this course, students will:

- gain an understanding of the fundamentals of computer programming
- develop a working knowledge of a current programming language (Processing)
- gain a high level understanding of logic, program structures and algorithms
- build their problem-solving skills by learning to go from an idea to execution in an organized, systematic fashion

Communication

Your Ryerson email will be the main method of communication for this class. Class announcements will be made using the BlackBoard system. You will also be required to maintain a simple class webpage where you will post your responses to the assignments. You are expected to have the basic HTML skills required to publish this simple webpage and create links to your assignments.

Textbook

There is a **required** textbook for the class: [Learning Processing](#), by Daniel Shiffman. **Optionally**, students are also encouraged to get [Getting Started with Processing](#), by Casey Reas and Ben Fry. Both books are available for free online as well as at local bookstores or through Amazon and Chapters.

Grading & Evaluation

55% - Problem sets (x3)
20% - Midterm exam
20% - Final project
5% - Participation

Problem sets consist of a few questions addressing specific programming concepts, each to be answered by a short program. Problem sets are to be written individually. Students will need to demonstrate knowledge of the basic programming techniques, problem solving skills as well as creativity.

Problem sets will be evaluated according to the following criteria:

- *Correctness*: does the program answer the question and produce the correct output? Are there compile, runtime or logical errors?
- *Style*: is the program clear and well commented? Does it make use of stylistic techniques covered in class? (naming schemes, program organization, formatting)
- *Creativity*: is the response original and aesthetically appealing? Does it show personal style?

The responses to the problem sets should be available online on the student's class website, *before class* on the day the problem set is due. Late problem sets will be deducted 5% per day, up to a maximum of one week, after which you will get zero.

The **final project** will be an original short program, created either as an answer to a specific design brief (to be announced towards the end of the semester) or as an open project. You will need to submit a short proposal by the end of the semester -- additional guidelines will be handed out closer to the due date. Marking guidelines will be the same as for problem sets. You are encouraged to work in groups of up to three students for this project.

Participation is expected and required. You can demonstrate participation by being on time, voicing questions or opinions in class and helping others. Failure to sign the attendance sheet will constitute an absence; 3 or more absences will be an automatic 0 for participation.

University Policies & Practices

Academic Integrity

Students are expected to follow the Student Code of Academic Conduct which can be found in the calendar or on-line at the Academic Council website: <http://www.ryerson.ca/calendar/2011-2012/pg2030.html>

With respect to writing programs, borrowing bits of source code from various on-line resources is an accepted and wide-spread practice (assuming that the license allows it). However, you are expected to be writing **original code** and therefore you may not borrow entire programs and pass them as your own. If you do borrow small portions of someone else's program, make sure that full references are provided (at the very least a URL and the original author) in your program's documentation. Failure to do so is considered plagiarism.

Accommodation of Students with Disabilities

If you have a disability that might require accommodation, please make sure you register with the Access Centre and supply any necessary Accommodation Forms. Accommodations can not be applied retroactively. <http://www.ryerson.ca/accesscentre/>

Accommodation of Student Religious Observance

At the start of each term, students who have religious observance obligations which will lead to absences from campus or academic activities during the semester should fill out the appropriate forms and have me sign them.

For more information see the Student Guide <http://www.ryerson.ca/studentguide/AcademicMatters2.html>

Discrimination Harassment Prevention Policy

Ryerson University is committed to fostering a collegial study and work milieu that is free of discrimination and harassment and one in which all individuals are treated with respect and dignity.
<http://www.ryerson.ca/equity/dhpspolicy/>

Class Schedule

Dates	Topics	Assignments (due)
Week 1 Jan 9 th Jan 12 th	Introduction Student and instructor introductions The Processing environment	
Week 2 Jan 16 th Jan 18 th	First Steps Drawing, Animation and Interaction	<i>Reading:</i> Processing Handbook preface (8 p) Class Website and Icon
Week 3 Jan 23 rd Jan 25 th	Building Blocks Variables and Conditionals	
Week 4 Jan 30 th Feb 1 st	Building Blocks Loops	
Week 5 Feb 6 th Feb 8 th	Program Organization Functions, Intro to Objects	Problem Set 1: Basics
Week 6 Feb 13 th Feb 15 th	Structures Creating objects	
Feb 20 th Feb 22 nd	<i>Reading Week</i>	
Week 7 Feb 27 th Feb 29 th	Arrays 1 Working with lists of things	Problem Set 2: Structures
Week 8 Mar 5 th Mar 7 th	Arrays 2 Working with lists of things	
Week 9 Mar 12 th Mar 14 th	Review From the beginning.	<i>Reading:</i> Golan Levin: Essay for Creative Code
Week 10 Mar 19 th Mar 21 st	Midterm Exam	
Week 11 Mar 26 th Mar 28 th	Putting it all together Simple Game: Fonts, Algorithms, Timing	

Week 12
April 2nd
April 4th

Advanced Drawing
Vector shapes, 3D drawing

Problem Set 3: Lists and Objects

Week 13
April 9th
April 11th

External Libraries, Sound
The Outside World

Final project proposal due

**Exam
Period**

Final project presentations
