CSCI 1108
Introduction to
Experimental Robotics

Intro to the course format

Robotics Examples

My video collection:

Asimo https://www.youtube.com/watch?v=OvgLJTpoVc0

Boston Dynamics SpotMini: https://www.youtube.com/watch?v=tf7IEVTDjng

Boston Dynamics Atlas: https://www.youtube.com/watch?v=rVlhMGQgDkY

Starfish https://www.youtube.com/watch?v=ehno85yI-sA

Thrun
https://www.ted.com/talks/sebastian_thrun_google_s_driverless_car?language=en

Objective of this course

- To learn about robotics
- To learn about computing in the real world
- To learn about working in a team
- To learn about project management
- …
- and to have fun

You Learn Best when You

- Learn collaboratively (in small groups)
- Learn by doing (hands-on)
- Learn by figuring things out on your own
- Learn by problem solving

- Success at university requires your initiative and self-motivation.
- Think about why you are here. If you want to learn we are happy to help.
- Do not hesitate to contact us about any questions you may have, We are here to help!

Format:

- The course is to be highly interactive
- Some lectures in the first half of the course
- Majority of learning is done in the labs

Labs start TODAY

- Tutorials with guided exercises
- Tutorial time and lecture time for project work

See details on web page:

https://projects.cs.dal.ca/hallab/CSCI1108_(2017b)

Course Structure: Labs

- Labs are where you will do most of the hands-on learning
- Four sections on Monday / Wednesday :
  – B01: 1135-1325 (CS Lab 4, room 134)
  – B02: 1135-1325 (CS Lab 6, room 228)
  – B03: 1635-1825 (CS Lab 4, room 134)
  – B04: 1635-1825 (CS Lab 6, room 228)
- You must attend the labs.
  – No changing in lab sections
  – **Please attend the labs for which you have signed up**
- Each team must submit a lab report at end of the lab
  – All attending team members are noted on the report
  – **The lab reports require participation from all team members**

Lab Report
Introduction to Experimental Robotics

	Name	Student #	Signature
1			
2			
3			
4			

Date: _____ Lab section: B0___ Tutorial #: _____ Team #: _____

Use about three to four sentences to answer each of the following questions:

1. What did each team member do in this lab? (For each absent member, **explain** why they could not attend.)

2. What challenges were encountered in this lab?

3. How were these challenges overcome?

4. Answer any additional questions specified by the instructor or the course notes. Attach additional pages as needed.

Tentative Schedule of Topics

Week	Lect 1 (M)	Lab 1 (M)	Lect 2 (W)	Lab 2 (W)
1			Administrivia & Robotics overview	Team work
2	Programming basics in Aseba 1	Tut 1 The Programming Environment	Programming basics in Aseba 2	Tut 2 Intro to Aseba Studio
3	Simulator	Tut 3 Simulator	Sensors and Sensor Models	Tut 4 Modeling Sensors
4	Actuator/Kinematics	Tut 5 Modeling Drive Actuators	State Transitions	Tut 6 State Transition
5	Dealing with failure	Tut 7 Dealing with failure	Project Management	Small Project
6	Thanksgiving Day	Thanksgiving Day	Debugging	Small Project
7	Midterm A	Small Project	Technical Writing	Small Project Presentation
8	Midterm B	Tut 8 Programming Techniques	Localization	Tut 9 Localization
9	object recognition	Tut 10 Object Recognition	Search	Large Project
10	Study week			
11	Remembrance Day	Remembrance Day	Controler	Large Project
12	Final A	Large Project		Large Project
13	Final B	Large Project		Large Project
14		Large Project		Tuesday: Olympics

Working Together

creative teamwork

Team Work

- Teams are assigned today and after the small project presentation.
- Teams comprise usually of three/four individuals
- Teams are expected to
  - Establish good communication
  - Share equally in the work involved
  - Use individual strengths to benefit the group
- Teams share the same project grade
  - Failure to participate in the team may result in an individual's grade being reduced

Peer Evaluation Form for Team Work

Peer Evaluation Form for Team Work

Lab section: _____ Team number/name _____

Write the name of each of your team members in the numbered boxes as a team. For each person, indicate the extent to which you agree with the statement on the left, using a scale of 1-4 (1=strongly disagree; 2=disagree; 3=agree; 4=strongly agree). Total the numbers in each column.

Evaluation Criteria	1.	2.	3.	4.
Attends team meetings regularly and arrives on time.				
Contributes meaningfully to team discussions.				
Completes team assignments on time.				
Prepares work in a quality manner.				
Demonstrates a cooperative and supportive attitude.				
TOTALS				

Evaluation

- **Team Work (done in teams of 3 or 4)**
  - 10% : Small Robotics Project
    - 75% : Robot Functionality and Performance
    - 25% : Project Report
  - 30% : Large Robotics Project
    - 50% : Robot Functionality and Performance
    - 50% : Project Report
  - 10% : Lab Reports (due at end of each lab)
- **Individual Work**
  - 50% : Exams
    - 2 midterms and 2 finals

You must pass (50%) both the individual and group components to pass the course.

A student's project evaluation may be lowered if they do not contribute sufficiently to the project.

To Do List

- Make sure your CS account is active.
  - Go to the CS Help Desk on the first floor of the CS building to activate it.
- Install Aseba Studio and Thymio Robot simulator on your own laptops.
  - You might ask CS Help Desk to install the simulator and Aseba
- If you are facing any issues with course registration
  - please contact Anne Publicover (annep@cs.dal.ca)

Check your Dal email regularly (access through my.dal.ca)