

Fabrication Camp

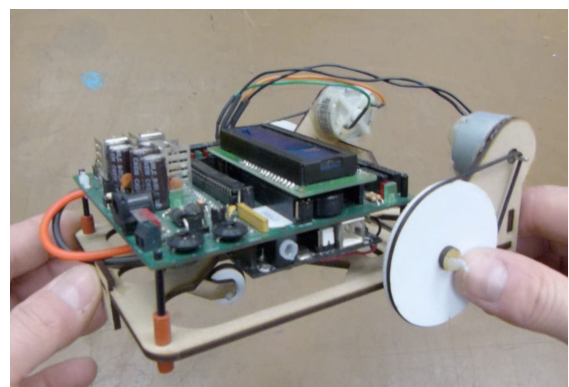
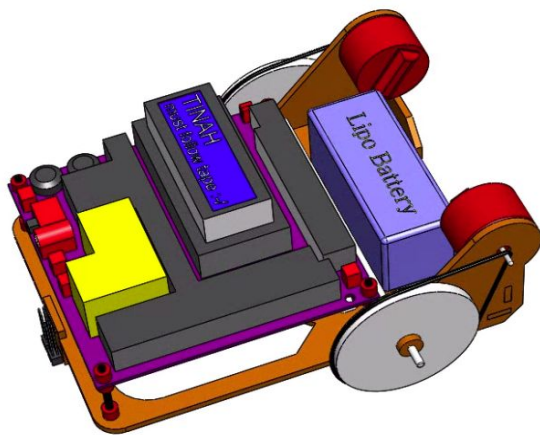
Engineering Physics 253 [Instrument Design] 2018

Week 1 Session 1

Goals for the next three afternoons:

- Become familiar with the 253 work spaces
- Get used to safety procedures and cleanliness standards
- Begin fabrication of a computer controlled car that is needed for a lab in week 5 (June 13):

The "Tape Follower" ([video view of it](#))



Code of Conduct

Standards, Rules and Responsibilities

For the coming weeks in this course, and for the rest of your life as a graduate from UBC Engineering Physics.

- 1) “Safety First”
- 2) “Leave it nicer than you found it”
- 3) Be an example for everybody with regards to points 1) and 2)

Some more specific rules for all our labs:

- Keep things clean. Clean up after yourself. That includes the floor surrounding your work area.
- Be extra-careful and diligent when using messy techniques like glueing, epoxying, bonding, painting, and anything that generates dust, snippets and crumbles.
- If you work with heat conducting paste, wipe things clean when you are done.
- In general, if we have to put a hand on anything to clean up after you, it means that you probably missed something. Try doing a better job next time.
- When putting batteries in the recycle, use tape to insulate its contacts to make sure it won't cause a short circuit and a fire.
- Label your stuff, ask us for sortiment boxes, allow others to see what you have and share with everyone
- Tell us - **by writing it on the blackboard** - if something is missing or broken
- Treat instruments and equipment well, test everything before using it (never trust it works) and try repairing your own stuff. Ask us for parts and help with this.
- When taking wires from spools, take utmost care to not cause a mess: Hold on to the end, because if you let go it might cause a giant pile spaghetti. If that happens to you, wind it back up to fix that.
- Common sense is not so common: If you are not sure about details, please ask us. If you see something we can do better, please always tell us. If you see us doing something unsafe, tell us.

Cleanup-Squad

- All teams will take turns in becoming the daily cleanup-squad.
- The squad will return tools and clean up common areas at the end of each day.
- Please help each other keeping things nice and efficient at all times.

Your Name:

sections

Show to instructor or TA when done.



Please keep the volume down when watching videos, or use earbuds.

There will be a lineup for laser and other tools at the beginning of the camp, please proceed to do other sections that don't have **[prerequisites]**.

1. Get Started: set onshape units to millimeters ([video](#)), make a name tag in onshape and export as DXF ([video](#))
[no prerequisites]

Instructor / TA:

2. Use the laser cutter to make a name tag. ([video](#))
[completion of #1 is required to do this]

Instructor / TA:

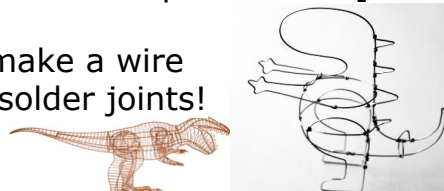
3. Learn how to use Omax Layout to line trace and generate a DXF file for the laser cutter ([video](#)). You can laser cut the result if you wish, or just show the resulting DXF file to the instructor/TA.
[no prerequisites]

Instructor / TA:

4. Use the laser for rastering an image ([video](#)).
[completion of #'s 1 and 2 is required to do parts of this]

Instructor / TA:

5. Learn how to solder ([video](#)) then make a wire sculpture ([video](#)). Must have >20 solder joints!
[no prerequisites]



Instructor / TA:

6. Learn how to desolder ([video](#)) and then show desoldered parts & PCB to instructor/TA. Make sure to have >10 desoldered joints to show for.
[no prerequisites]

Instructor / TA:

7. Make a little sheet metal pedestal with a riveted name tag ([video](#)) and then learn how to use epoxy ([video](#)) to mount the sculpture ([video](#)). Main goal: Cleanliness. Make zero mess!
[completion of #5 is required to do this]

Instructor / TA:

Instructor / TA:

8. Connectors: learn how to use MTA connectors ([video](#)).
[no prerequisites]

Tape Follower deadline: June 13

Once you know how to use the laser cutter, download the shapes ([hardboard parts](#)) ([foamboard parts](#)) to cut one set of tape follower parts per 2 students (you will make just one machine per work bench). Be extremely efficient with your material use, so others can cut more of the same from the sheet of material you are using for this! Then watch the ([video](#)) to understand the final assembly of the machine. Look at a 3D model of the tape follower using ([this link](#)).

To activate Omax, find the Projectlab laptop in Life 2408, click on “IntelliMAX Premium”

OMAX
ABRASIVE WATERJETS

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Activate License

Click the software below to begin activation - Step 1

Intelli-MAX Premium

Intelli-CAM

...enter the yellow code you found in “Layout” and click “I agree” to get your registration code.

Intelli-MAX Premium

Intelli-CAM

Please enter the registration information below - Step 2

License Expires: Never ⓘ

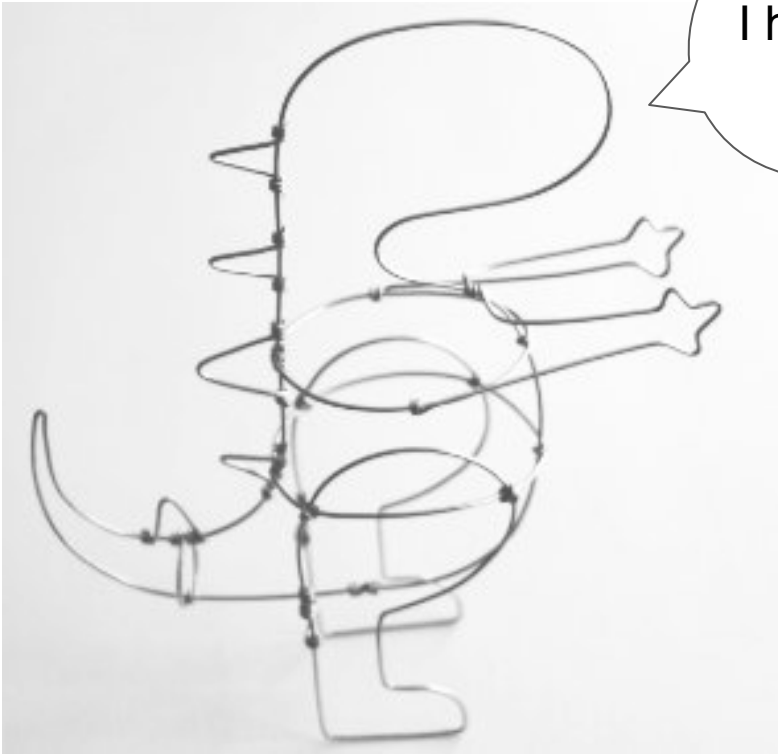
Registration Code:

Your PC Date:

I Agree to the Terms of the [License Agreement](#)

SUBMIT

Set up Cura for 3D Printing



Help!
I have no
eyes!

