

## All Students of EP1000 Dig. Fabrication Fundamentals (Gp 1 and Gp 2)

Dear Students,

We will soon be opening the Fab Labs for practicals when term starts on the 28th June 2021. We will also be practising safe distancing rules when we return to the labs.

The following timetable will be followed for the first 2 weeks of the term.

Date	Time	Group	Location	Activity
Mon 28 June '21	2-4 pm	1	T11C	Laser Cutting
	2-4 pm	2	T1442	3D Printing
Fri 2 July '21	8-10 am	1	T11C	Laser Cutting
	10-12 noon	2	T11C	Laser Cutting
Mon 5 July '21	2-4 pm	1	T1442	3D Printing
	2-4 pm	2	T11C	Laser Cutting
Fri 9 July '21	8-10 am	1	T11C	Laser Cutting / 3D Printing
	10-12 noon	2	T11C	Laser Cutting / 3D Printing

As such, please **prepare** your assignments for the Practical work ahead. You have limited time on the physical machines for preparation.

## 3D Printing Assignment - Knight Chess Piece

1. In Fusion 360, complete Exercise 3 Chess Piece - Knight (ref: [https://rdorville.github.io/digfab/presentations/ep1000\\_3dmodel2/ep1000\\_3dmodel2.pdf](https://rdorville.github.io/digfab/presentations/ep1000_3dmodel2/ep1000_3dmodel2.pdf) pg 10)
2. When completed, using Tools > 3D Printing, prepare the model for 3D printing.
3. save your design as an STL file.
4. Use CURA to slice your STL file for printing, using the following
  - a. Printer: Ultimaker 2+, Nozzle: 0.4mm. Extrude: 0.2mm
  - b. Use supports,
  - c. Tweak your slicer such that your print takes max 45 minutes to complete
  - d. Write down your slicer parameters for your documentation
5. Export your sliced file and bring it along for the lab

You will find the necessary help and information at esp.sp.edu.sg > My Community > Fablab@SP > FabLab Skill Set Training > 3D Printers

When you are ready, you should also complete the Fab Lab 3D Printer Certification Quiz. Your completed 3D assignment may be used as the project for the certification.

This assignment is worth 40% of your CA2 marks. (Ref: [https://rdorville.github.io/digfab/presentations/ep1000\\_assessment/ep1000\\_assessment.pdf](https://rdorville.github.io/digfab/presentations/ep1000_assessment/ep1000_assessment.pdf) )

## Laser Cutting Assignment - Music Box with Lid

1. Design your music box (with lid) using Fusion 360 as tasked in the assignment ([https://rdorville.github.io/digfab/presentations/ep1000\\_cutting2/ep1000\\_cutting2.pdf](https://rdorville.github.io/digfab/presentations/ep1000_cutting2/ep1000_cutting2.pdf) )
2. Extract the 2D cut layouts of the box and export them as DXF files. Combine the DXFs of each side to form a single DXF layout, minimizing the space wasted between each of the cuts.
3. Use LibreCAD or a DXF viewer to check your file for mistakes. Bring along this file for your Laser Cutting lab. If you do NOT have this file, you will not be allowed to continue with the lab.
4. At the Lasercutting lab, you will have 5~10 minutes to adjust, add graphics/engravings to your laser cutting using CorelDraw. You will be given assistance for this part.
5. You will then have an opportunity to cut/engrave your project assessment.

You will find the necessary help and information at  
esp.sp.edu.sg > My Community > Fablab@SP > FabLab Skill Set Training > Laser  
Cutter

When you are ready, you should also complete the Fab Lab Laser Cutter  
Certification Quiz. Your completed Box assignment may be used as the project for  
the certification.

This assignment is worth 40% of your CA2 marks. (Ref:  
[https://rdorville.github.io/digfab/presentations/ep1000\\_assessment/ep1000\\_assessment.pdf](https://rdorville.github.io/digfab/presentations/ep1000_assessment/ep1000_assessment.pdf) )

If you have any queries, please do not hesitate to contact your Group Lecturer to  
have your designed checked before term practicals starts.