



MS 101 – TEAM B10/I LOG FILE



Arya Sameer Joshi (23B1853)

Gokularamanan R S (23B1854)

Tanay Amit Agrawal (23B1855)

Ayush Singh (23B1856)

Haris Narrendran R (23B1857)

Aadi Suketu Bharatia (23B1858)

Arya Sameer Joshi (23B1853)

Date	Work Done
10/10/23	Familiarisation with UTM - ME and EE parts, fabrication rules
17/10/23	Brainstorming ideas about construction of the test frame, placement of motors + sketching part of bottom base
20/10/23	Observation of the stress and strain measuring mechanism, researched on gear functioning and ratio, determining of gear ratio based on the data from stress experiment
25/10/23 DESE lab	Made changes in gear ratio; Designed gears with new ratio; modelled in fusion 360; finalised gear ratio to be used
26/10 DESE lab	Gear modelling; final scaling of design
27/10/2023	Fabrication of gears, making changes in the design of the platform
28/10/23	Laser cutting of gears on acrylic sheet
31/10/23	Threading leadscrew, building circuit
2/11/23 DESE	Laser cutting of base part 1 (decreased area of elements in ud5 file)

3/11/23	EE circuit
7/11/23	EE circuit

Outline of jobs done:

1. Determination of gear ratio
2. Designing gears on fusion along with Gokul (before gear generator was provided)
3. Threaded 2 leadscrews using manual tapping tool
4. Worked on the EE circuit (when first made)
5. Stress – calibration experiment using the motor to pull up the weights and measuring the currents.
6. Fabrication - Minimized area in laserCAD software.

Gokularamanan R S (23B1854)

10/10/23	Familiarisation with UTM - ME and EE parts, fabrication rules
17/10/23	Brainstorming ideas about construction of the test frame, placement of motors + sketching part of bottom base
20/10/23	Design of gears on fusion 360, plotting of load vs current (readings obtained from stress experiment (I vs load in g))
25/10/23 outside lab	Designed gears (modified gear ratio); modelled in fusion 360;
26/10 DESE lab	Loading platform design; gear modelling; final scaling of design
27/10/2023	Fabrication of gears
28/10/23	Laser cutting of gears on acrylic sheet; coding on IDE for stress - strain curve (started)
31/10/23	Sanding of 3d printed jaws (painful), code
2/11/23 DESE	Laser cutting of base - part 1, code
3/11/23	Laser cutting of base and platform - part 2, EE code for stress part - code working properly - verified using weights once again

06/11/23 DESE	Debugged code for errors; Also integrated the serial data from the Arduino board to CoolTerm (another application) for plotting stress-strain curve.
07/11/23	Testing code and circuit and helped in assembly of EE and ME parts

Outline of jobs done:

1. Designing of gears on Fusion 360 along with Arya (done before the gear generator was uploaded; did using utilities->add-ins->scripts-> spur gear (.py file)
2. Fabrication – laserCAD operation, laser-cutting the parts – base, platform and gears (test + acrylic)
3. Sanding of jaws (4 jaws)
4. Coding
5. Did the review – 1 video along with Aadi.

Tanay Agrawal (23B1855)

10/10/23	Familiarisation with UTM - ME and EE parts, fabrication rules
17/10/23	Brainstorming ideas about construction of the test frame, placement of motors + sketching part of bottom base
25/10/23 DESE lab	Observation of the stress and strain mechanism, discussing dimensions and modelling claws on Fusion 360, assisted in designing individual parts on fusion 360
26/10 DESE lab	Loading platform design; gear modelling; final scaling of design; gears and platform teeth ready for laser cutting tomorrow
27/10/2023	Fabrication of gears, making changes in the design of the platform
28/10/23	Building electrical circuits - into the EE part of the project
31/10/23	Threading leadscrew, coding on Arduino IDE, lathe for nut
2/11/23 DESE	Threading of 2nd leadscrew
3/11/23	Testing EE circuit
7/11/23	Assembly of EE and ME components

Outline of jobs done:

- 1. Came with idea of doing a horizontal setup instead of a vertical one (Inspired from lathe machine.)**
2. Assisted in designing of the 3d model on fusion 360
(dimensions of individual parts)
3. Helped in writing the code along with Gokul (minor part).
4. Stress experiment (plot between motor current and load)
5. Built major part of EE circuit
6. Threaded leadscrew

Ayush Singh (23B1856)

10/10/23	Familiarisation with UTM - ME and EE parts, fabrication rules
17/10/23	Brainstorming ideas about construction of the test frame, placement of motors

Outline of jobs done:

[Before project objectives were changed on 26/10/23]

1. Conceptualized the idea of moving platform for automated loading of samples and gripping
2. Proposed the idea of 1 jaw being fixed while the other being movable, which was also incorporated in the model for 1 set of jaws.

Haris Narrendran R (23B1857)

10/10/23	Familiarisation with UTM - ME and EE parts, fabrication rules
17/10/23	Brainstorming ideas about construction of the test frame, placement of motors + sketching part of bottom base
20/10/23	Base + platform + modelling in Fusion 360
26/10 DESE lab	Loading platform design; gear modelling; final scaling of design;
27/10/2023	Making changes in the design of the platform
28/10/23	Modifying the right and jaws (gripping) (had to do to reduce the printing time); sent right and left jaws for 3d printing;
31/10/23	Sanding of 3d printed jaws, lathe
2/11/23 DESE	EE circuit, assembling base
3/11/23	Assembly of model and gluing parts
06/11/23 DESE	Assembly of EE and ME components

Outline of jobs done:

1. 3D modelling of individual parts on fusion 360 – base, platform, jaws (minor part), etc.
2. Fracktal works – used for exporting .stl file for 3D printing of jaws (qty 4)
3. Assembly of all parts by gluing them together.
4. Sanding of parts (nuts and leadscrew) to make them go in smoothly.
5. Cutting of acrylic rods with saw with Harish.

Aadi Bharatia (23B1858)

10/10/23	Brainstorming ideas about construction of the test frame, placement of motors + sketching part of bottom base
17/10/23	Designing of individual parts
25/10/23 DESE lab	Observation of the stress and strain mechanism, discussing dimensions and modelling claws on Fusion 360
26/10 DESE lab	Loading platform design; final scaling of design;
27/10/2023	Making changes in the design of the platform
28/10/23	Building electrical circuits
31/10/23	Threading leadscrew, nut making and threading
2/11/23 DESE	Helped in threading of 2nd leadscrew, finished EE along with circuit
3/11/23	Sawing of acrylic rods
7/11/23	Assembly of EE and ME components

Outline of jobs done:

1. Ideation and conceptualization on motion of leadscrew and jaws.
2. Designing of jaws and modelling on Fusion 360 (major part)
3. Idea of serrated edges on jaws for better gripping
4. Fabrication of the nuts on lathe, internal threading and worked part-time on threading of leadscrew.
5. Testing of EE circuit with Tanay and Arya.
6. Cutting of acrylic rods using serrated saw with Haris.
7. Transportation of the partially completed model in between labs and workspace.
8. Made review – 1 video along with Gokularamanan.