PROJECT ONE: MILESTONE 4 – COVER PAGE

Team Number: Mon-31

Please list full names and MacID's of all *present* Team Members

Full Name:	MacID:
Avery Thurston	thurstoa
Gurleen Dhillon	dhillg25
Olutayo Oluwasegun	olutayoo
Kavishalini Gurunathan	gurunatk

MILESTONE 4 (STAGE 1) – FINALIZED DESIGN: ESTIMATE THICKNESS REQUIREMENT

Document the results of your materials selection and ranking on the following page.

→ Each team member is required to complete this on the *INDIVIDUAL* worksheet document, and then copy-and-paste to this document

We are asking that you submit your work on both worksheets**.** It does seem redundant, but there are valid reasons for this:

- Each team member needs to submit their estimation of deflection with the **Milestone Four Individual Worksheets** document so that it can be ***graded***
- Compiling your individual work into the **Milestone Four Team Worksheets** document allows you to readily access your team member's work
    - This will be especially helpful when completing ***Stage 2*** of the milestone

Team Number:	Mon-31

Copy-and-paste from the INDIVIDUAL worksheet

Full Name:	MacID:
Avery Thurston	thurstoa

1. The title of the scenario

EWB Humanitarian Aid Mission

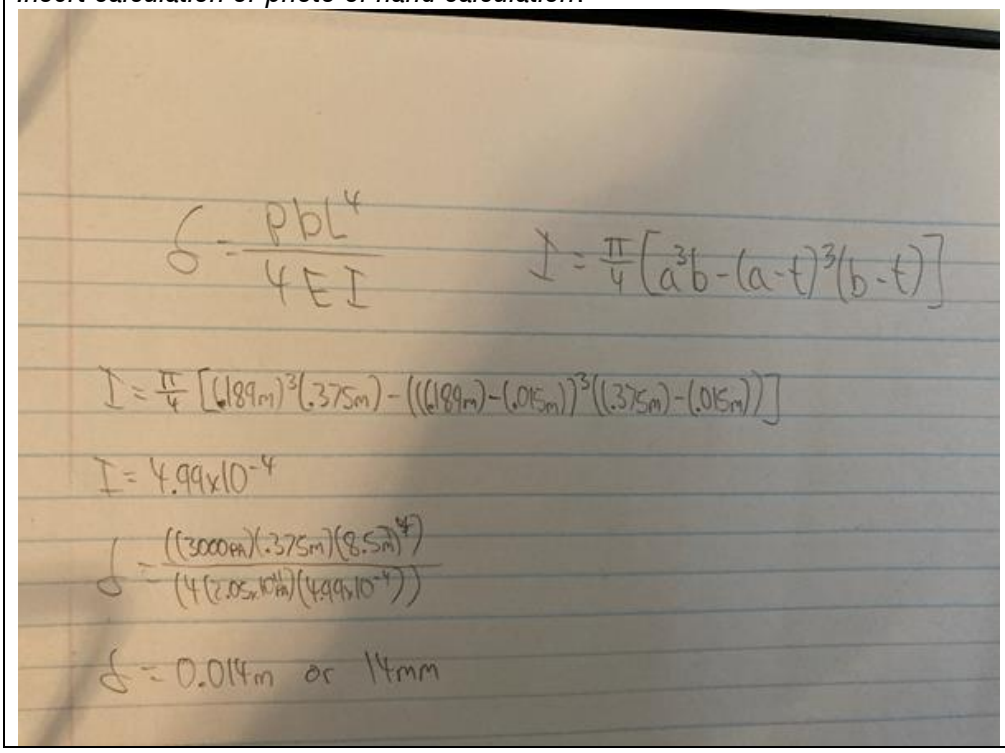
2. Chosen Material

	Material Name	Young's Modulus (GPa)	Yield Strength (MPa)
Chosen Material	Low Alloy Steel	205	1034.5

3. Estimate of Deflection - Analytical Model

Assigned thickness, *t* from Table 1 (mm)	**15-mm**
Estimated deflection δ (mm)	14 mm

Insert calculation or photo of hand calculation.



Team Number:	Mon-31

Copy-and-paste from the INDIVIDUAL worksheet

Full Name:	MacID:
Gurleen Dhillon	dhillg25

1. The title of the scenario

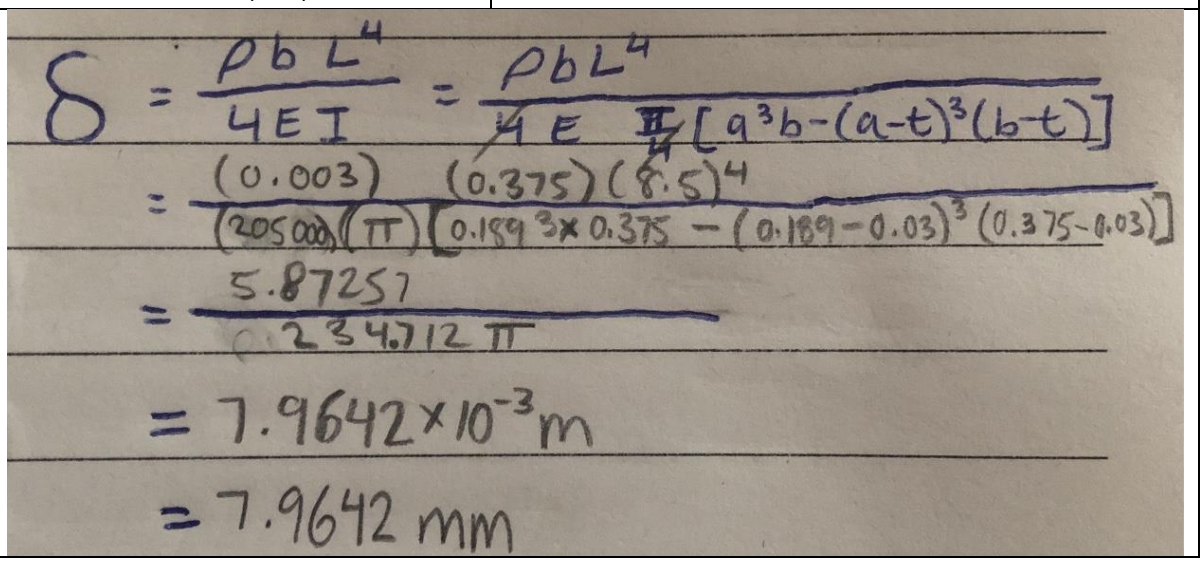
EWB Humanitarian Aid Mission

2. Chosen Material

	Material Name	Young's Modulus (GPa)	Yield Strength (MPa)
Chosen Material	Low Alloy Steel	205	1034.5

3. Estimate of Deflection - Analytical Model

Assigned thickness, *t* from Table 1 (mm)	**30-mm**
Estimated deflection δ (mm)	7.96 mm



Team Number:	Mon-31

Copy-and-paste from the INDIVIDUAL worksheet

Full Name:	MacID:
Kavishalini Gurunathan	gurunatk

1. The title of the scenario

EWB Humanitarian Aid Mission

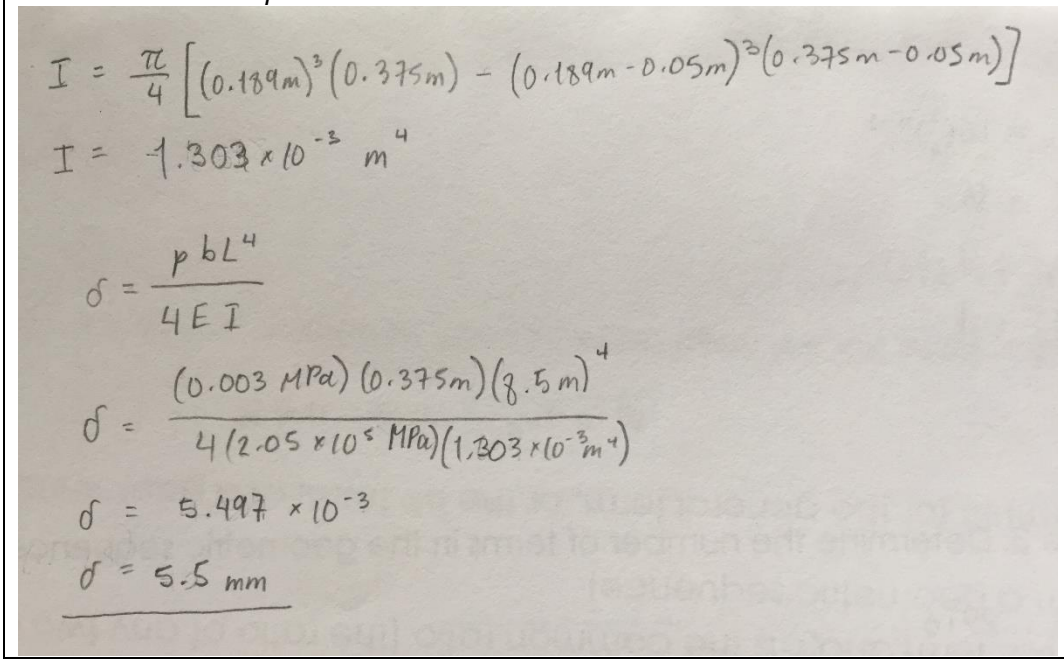
2. Chosen Material

	Material Name	Young's Modulus (GPa)	Yield Strength (MPa)
Chosen Material	Low Alloy Steel	205	1034.5

3. Estimate of Deflection - Analytical Model

Assigned thickness, *t* from Table 1 (mm)	**50-mm**
Estimated deflection δ (mm)	5.5 mm

Insert calculation or photo of hand calculation.



Team Number: Mon-31

Copy-and-paste from the INDIVIDUAL worksheet

Full Name:	MacID:
Olutayo Oluwasegun	olutayoo

1. The title of the scenario

EWB Humanitarian Aid Mission

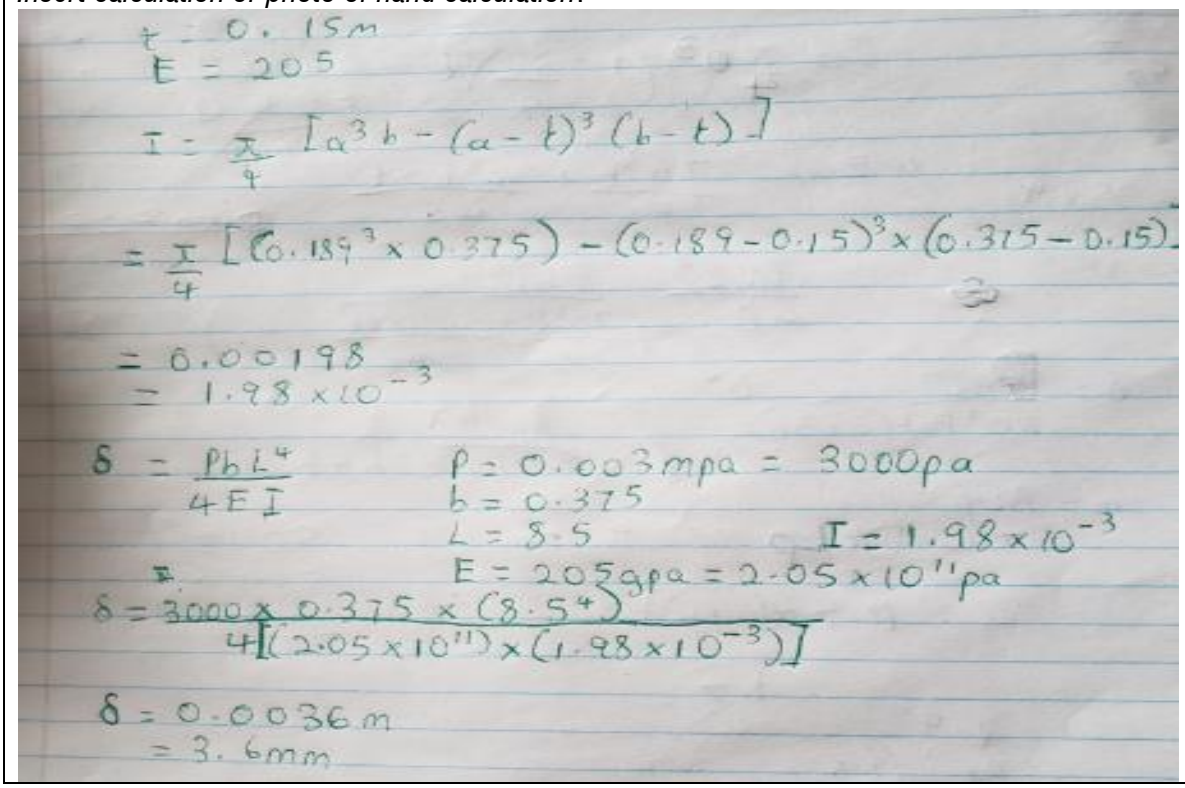
2. Chosen Material

	Material Name	Young's Modulus (GPa)	Yield Strength (MPa)
Chosen Material	Low Alloy Steel	205	1034.5

3. Estimate of Deflection - Analytical Model

Assigned thickness, *t* from Table 1 (mm)	**150-mm**
Estimated deflection δ (mm)	3.6mm

Insert calculation or photo of hand calculation.



*If you are in a team of 5, please copy and paste the above on a new page

MILESTONE 4 (STAGE 2) – FINALIZED DESIGN: REFINE THICKNESS REQUIREMENT

Team Number: Mon-31

1. Calculate Thickness Requirement Based on Deflection Simulation

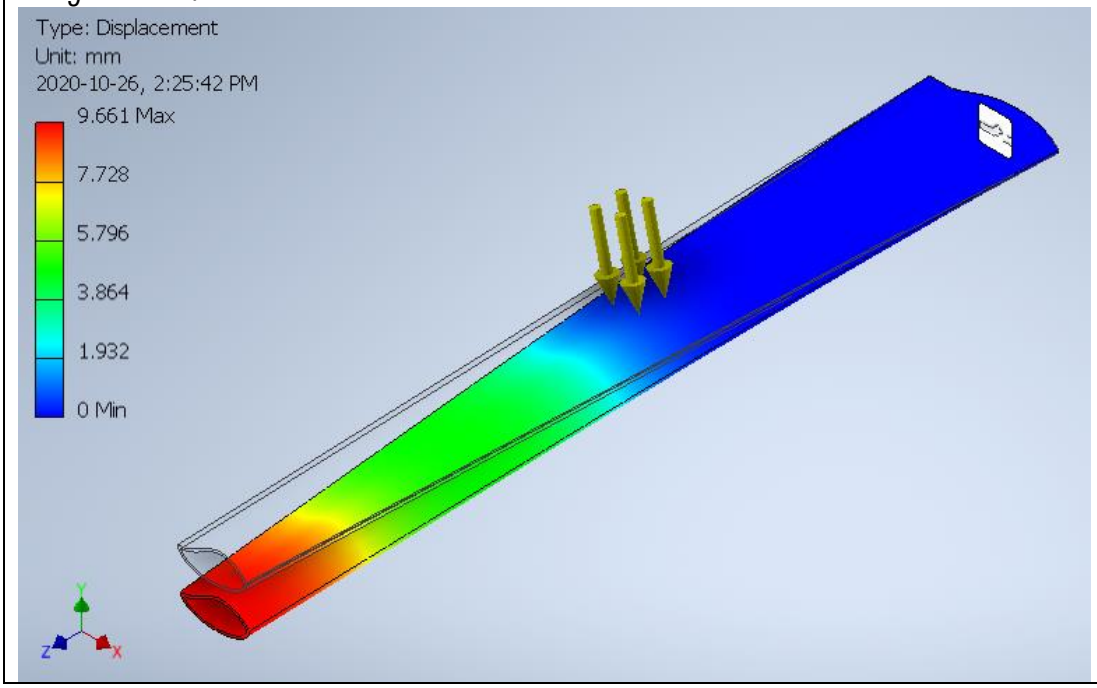
Initial Thickness range, obtained from stage 1 (e.g. 30mm < t < 50 mm):	15mm ≤ t ≤ 30mm

For every iteration, include your thickness and observed deflection in the table below. Only include as many rows as needed until you get a deflection of 10 mm (Do not over-design the turbine blade. i.e., if your deflection is less than 8.5 mm, it is over-designed). Add more rows, if needed:

Thickness (mm)	**Observed deflection (mm)**
30	8.275
25	9.661

Final refined turbine blade thickness *t* (mm):	25

Insert print screens of deflection simulation and provide evidence that the deflection satisfies the design constraint.



MILESTONE 4 (STAGE 3) – PEER INTERVIEW

Team Number: Mon-31

1. Peer Interview Notes

Discuss what you have learned from another group.

- Scenario: pioneer in clean energy, Sweden
- Make efficient and lot of turbines, lots of energy
- Reliable on renewable energy
- Objective: Materials produced with least energy and least carbon footprint
- Used Low carbon steel
- Thickness: 24.2mm
- Deflection: 9.8 mm
- Main objective was efficiency (not measurable in inventor)
- Seconds: clean recycled materials
- Choices : wood, bamboo, low carbon steel
- Based on clean production
- 2 equations: co2 output during material production, energy output while producing material

Note: Please be mindful that you are expected to write a short reflection on what you have learned from the other team in your final deliverable