

# PROJECT ONE: MILESTONE 3B – COVER PAGE

Team Number:

Tues-24

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

Full Name:	MacID:
Taaha Atif	AtifT
Pritika Thevakanthan	thevakap
Yasmine Elkhoully	Elkhoully
Borna Sadeghi	sadegb1

# MILESTONE 3B – DESIGN EMBODIMENT

Team Number:

Tues-24

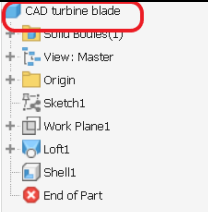



## 1. Deflection Estimation (Stage 1)

Estimate deflection $\delta$ (mm):	9.390246176mm
$I = \frac{\pi}{4} \left( (0.129m)^3 (0.375m) - (0.129m - 0.05m)^3 (0.375m - 0.05m) \right)$ $= \frac{\pi}{4} \left( 1.6588997 \times 10^{-3} m^4 \right)$ $= 1.302896778 \times 10^{-3} m^4$ $\delta = \frac{(0.000036N)(0.375m)(8.5m)^4}{4(120GPa)(1.302896778 \times 10^{-3} m^4)}$ $= 9.390246176 \times 10^{-3} m$ $= 9.390246176 mm$	

Team Number:

Tues-24

## 2. Solid Model of Turbine Blade (Stage 2)

Volume (mm <sup>3</sup> ):	
	<p>Steps to find the volume:</p> <ol style="list-style-type: none"> <li>1. Right-click on 3D part (see picture to the left)</li> <li>2. Click on "iProperties"</li> <li>3. Click on the tab called "Physical"</li> <li>4. Click on "Update" to show the <b>volume</b></li> </ol>
Mass	<div>921.072 kg (Relative)</div> <div></div> <div>X</div>
Area	<div>36766578.500 mm<sup>2</sup></div> <div></div> <div>Y</div>
Volume	<div>921072171.341 mm<sup>3</sup></div> <div></div> <div>Z</div>

Team Number:

Tues-24

### 3. Deflection Simulation (Stage 3)

Simulated deflection  $\delta$  (mm): 9.393mm

*Insert screenshots of your team's deflection simulation and provide evidence of the simulated deflection.*

