Lab 3 – Test: Version C
Simple Assemblies and Gear Design

Design a gearing mechanism consisting of a spur gear mechanism (four spur gears – G1, G2, G3, G4) connected to a worm drive (1 worm – W1, 1 worm gear – WG1).

Spur Gear Mechanism:
For your spur gear mechanism, adhere to the following:

- G1 is the input, rotating at **38,400** revolutions per minute clockwise
- G4 is the output, rotating at **2,400** revolutions per minute clockwise
- Minimum number of teeth on a spur gear is 12
- The gear ratio between any 2 meshing gears cannot exceed 5 (i.e., 5 times larger or 5 times smaller)
- The module of each gear is 1 and the Facewidth is 5mm

Worm Drive Mechanism:
For your worm drive mechanism, adhere to the following:

- The input of your worm drive is axially connected to the output of your spur gear mechanism
- The output of your worm drive is rotating at **2.0** revolutions per second

Use the following design parameters

	Length, L (mm)	Pitch Diameter, D (mm)	Number of Threads/Teeth, Z	Axial Circular Pitch (mm)	Module (mm/tooth)	Facewidth (mm)
Worm, W1	90	15	1	3		
Worm Gear, WG1		?	?		?	5

Note: this lab will count towards your final grade

Model your mechanism in Autodesk Inventor according to the given **STUDENT INSTRUCTIONS** document