Unit Title:	Frameworks and Structures
Unit Level:	Three
Unit Credit Value:	3
Unit Code:	WNI575
Unit Type:	Academic Subject Content
Unit Review Date:	31/12/2028
Graded / Ungraded:	Graded

This unit has 3 learning outcomes:

Learning outcomes	Assessment criteria
The learner will:	**The learner can:**
1. Understand basic frameworks.	1.1 Solve a three-component framework by calculation and engineering drawing. 1.2 Solve a framework problem by calculation and confirm the results by drawing. 1.3 Determine whether the component parts in 1.1 and 1.2 are in tension or compression.
2. Know about beams and bending.	2.1 Calculate reactions on a beam with both point and uniformly distributed loads. 2.2 Calculate the shear force and bending moments on a beam with both point and uniformly distributed loads and produce a diagram for each. 2.3 Use $\frac{M}{I} = \frac{\sigma}{Y} = \frac{E}{R}$ to solve beams problems, for square or rectangular, circular and I sectioned beams.
3. Understand torsion.	3.1 Use $\frac{T}{J} = \frac{\tau}{R} = \frac{G\theta}{L}$ to calculate the shear stress and the angle of twist, of a thin-walled tube. 3.2 Given conditions of a solid bar, calculate the wall thickness of a tube which could replace it, with minimal loss of torsional stiffness. 3.3 Calculate the power which may be transmitted by both hollow and solid shafts, given that their working environments are the same.

Assessment (Graded)

1. Meets assessment criteria	At least a Pass
2. Further grading	
▪ Meets assessment criteria but not merit grading standards	Pass
▪ Meets assessment criteria and merit but not distinction grading standards	Merit
▪ Meets assessment criteria and distinction grading standards	Distinction