

<b>Unit Title:</b>	Thermal Properties and Heat Transfer
<b>Unit Level:</b>	Three
<b>Unit Credit Value:</b>	3
<b>Unit Code:</b>	WNI582
<b>Unit Type:</b>	Academic Subject Content
<b>Unit Review Date:</b>	31/12/2028
<b>Graded / Ungraded:</b>	Graded

### This unit has 4 learning outcomes:

Learning outcomes	Assessment criteria
<b>The learner will:</b>	<b>The learner can:</b>
1. Understand temperature and temperature measuring devices, be able to carry out conversion calculations, and evaluate, select and justify device use.	1.1 Explain the difference between heat and temperature. 1.2 Differentiate between Celsius and Kelvin and convert between them. 1.3 Evaluate various types of temperature measuring devices. 1.4 Select and use appropriate temperature measuring devices in various situations. 1.5 Justify the use of each device in particular situations.
2. Understand specific heat capacity (SHC), changes of state and latent heat, and be able to perform related calculations and experiments.	2.1 Explain change of state at the molecular level. 2.2 Discuss SHC and latent heats of fusion and evaporation. 2.3 Measure the heat capacity of some metals. 2.4 Measure the latent heats of fusion and evaporation of water. 2.5 Use $E=m.c.\Delta\theta$ or $E=m.L$ in combination to solve problems.
3. Understand methods of heat transfer and be able to explain common examples.	3.1 Explain the processes of conduction, convection and radiation.

	3.2 Explain common examples of heat transfer processes in single materials and composites.
4. Understand the gas laws.	<p>4.1 Explain the equations for: Pressure Law, Boyle’s Law and Charles’s Law and their application.</p> <p>4.2 Discuss the implications of gas changes under three different conditions.</p> <p>4.3 Explain the causes of deviation from the ideal case.</p>

### Assessment (Graded)

1. Meets assessment criteria	At least a Pass
2. Further grading	
<ul style="list-style-type: none"> <li>▪ Meets assessment criteria but not merit grading standards</li> </ul>	Pass
<ul style="list-style-type: none"> <li>▪ Meets assessment criteria and merit but not distinction grading standards</li> </ul>	Merit
<ul style="list-style-type: none"> <li>▪ Meets assessment criteria and distinction grading standards</li> </ul>	Distinction