

# University of Pretoria Yearbook 2021

## Thermodynamics 221 (MTX 221)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Engineering, Built Environment and Information Technology</a>
<b>Module credits</b>	16.00
<b>NQF Level</b>	06
<b>Programmes</b>	<a href="#">BEng Industrial Engineering</a> <a href="#">BEng Industrial Engineering ENGAGE</a> <a href="#">BEng Mechanical Engineering</a> <a href="#">BEng Mechanical Engineering ENGAGE</a> <a href="#">BEng Mining Engineering</a> <a href="#">BEng Mining Engineering ENGAGE</a>
<b>Prerequisites</b>	FSK 116 or FSK 176
<b>Contact time</b>	1 practical per week, 1 tutorial per week, 3 lectures per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Mechanical and Aeronautical Engineering
<b>Period of presentation</b>	Semester 2

### Module content

Application overview. Concepts: system, control mass, control volume, property, state, process, cycles, mass, volume, density, pressure, pure substances, property tables, ideal gases, work and heat, internal energy, enthalpy, specific heat capacity. First law of thermodynamics for control masses and control volumes. Conservation of mass. Processes: isothermal, polytropic, adiabatic, isentropic. Second law of thermodynamics and entropy for control masses and control volumes. Introduction to power cycles. Experimental techniques in thermodynamics.

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