

# University of Pretoria Yearbook 2019

## 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>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>	3 lectures per week, 1 practical per week, 1 tutorial per week
<b>Language of tuition</b>	Afrikaans and English are used in one class
<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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