

# University of Pretoria Yearbook 2017

## Transfer processes 311 (COP 311)

<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 Chemical Engineering</a> <a href="#">BEng Chemical Engineering ENGAGE</a>
<b>Prerequisites</b>	WTW 238, (WTW 263)
<b>Contact time</b>	4 lectures per week, 3 tutorials per week
<b>Language of tuition</b>	Module is presented in English
<b>Academic organisation</b>	Chemical Engineering
<b>Period of presentation</b>	Semester 1

### Module content

Momentum transfer. Fluid statics. Control volume approach for conservation of mass, energy, and momentum. Application to pumps and turbines. Navier-Stokes equations, derivation and applications. Laminar and turbulent boundary layer theory. Heat transfer: fundamentals of heat transfer. Differential equations of heat transfer. Steady state conduction. Introduction to unsteady state conduction. Convection heat transfer and the thermal boundary layer. Radiation heat transfer. Mass transfer: fundamentals of mass transfer. Diffusion and the diffusion coefficient. Differential equations of mass transfer. Steady state molecular diffusion in one or more dimensions.

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