Transfer processes 311 (COP 311)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
NQF Level	07
Programmes	BEng Chemical Engineering
	BEng Chemical Engineering ENGAGE
Prerequisites	WTW 238, (WTW 263)
Contact time	3 tutorials per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Chemical Engineering
Period of presentation	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.