

University of Pretoria Yearbook 2020

Heat and mass transfer 420 (MHM 420)

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| Qualification | Undergraduate |
| Faculty | Faculty of Engineering, Built Environment and Information Technology |
| Module credits | 16.00 |
| Programmes | BEng Mechanical Engineering BEng Mechanical Engineering ENGAGE |
| Prerequisites | No prerequisites. |
| Contact time | 1 practical per week, 3 lectures per week |
| Language of tuition | Module is presented in English |
| Department | Mechanical and Aeronautical Engineering |
| Period of presentation | Semester 2 |

Module content

Fundamentals of Thermal Radiation; blackbody radiation, radiative properties, Kirchhoff's law. Radiation Heat Transfer; the view factor, gray surfaces, radiation shields. Boiling and condensation; pool and film boiling, film condensation, dropwise condensation. Heat exchangers; types, analysis, design, and selection. Mass transfer: Fick's Law, mass diffusion, mass convection, simultaneous heat and mass transfer, porous catalysts.

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