



University of Pretoria Yearbook 2019

Thermoflow 410 (MTV 410)

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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 | 3 lectures per week, 1 practical per week |
| Language of tuition | Module is presented in English |
| Department | Mechanical and Aeronautical Engineering |
| Period of presentation | Semester 1 |

Module content

Navier-Stokes and continuity equations. Euler equations, momentum equations. Conduction in two dimensions. Similarity and dimensional analysis. Unsteady heat transfer. Convective heat transfer: forced convection (external and internal), natural convection. Thermal radiation. Heat exchangers: classification, Parallel flow and counterflow heat exchangers; double-pass, multi-pass and cross-flow heat exchangers; LMTD method, Effectiveness-NTU method, selection of heat exchangers

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