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# University of Pretoria Yearbook 2019

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## Heat and mass transfer 420 (MHM 420)

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| <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 Mechanical Engineering</a><br><a href="#">BEng Mechanical Engineering Engage</a> |
| <b>Prerequisites</b>          | No prerequisites.   |
| <b>Contact time</b>           | 3 lectures per week, 1 practical per week   |
| <b>Language of tuition</b>    | Module is presented in English  |
| <b>Department</b>             | Mechanical and Aeronautical Engineering   |
| <b>Period of presentation</b> | 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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