# University of Pretoria Yearbook 2016

# Mechanical metallurgy 700 (NMM 700)

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| **Qualification** | Postgraduate |
| **Faculty** | Faculty of Engineering, Built Environment and Information Technology |
| **Module credits** | 32.00 |
| **Programmes** | BEngHons Metallurgical Engineering |
| | BScHons Applied Science Applied Science: Metallurgy |
| **Prerequisites** | No prerequisites. |
| **Contact time** | 48 contact hours per semester |
| **Language of tuition** | English |
| **Academic organisation** | Materials Science and Metallur |
| **Period of presentation** | Year |

**Module content**

We cover the interaction between the internal structure of metals – on the atomic and microscopic scales – and their mechanical properties. Practically important topics such as elastic and plastic stress analysis, dislocations and deformation, room and high temperature deformation processes, mechanical property/microstructure relationships for low and medium Carbon steels and for micro-alloyed and HSLA steels, fatigue processes, stress corrosion cracking, creep deformation processes and fracture mechanics are covered in depth, and illustrated with case studies.  The course is largely available on  CD-ROM  with references to the latest literature.