

University of Pretoria Yearbook 2020

Mechanical metallurgy 700 (NMM 700)

Qualification	Postgraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	30.00
Programmes	BEngHons Metallurgical Engineering BSchHons Applied Science Metallurgy
Prerequisites	No prerequisites.
Contact time	48 contact hours per semester
Language of tuition	Module is presented in English
Department	Materials Science and Metallurgical Engineering
Period of presentation	Semester 1 or Semester 2

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.

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