University of Pretoria Yearbook 2016

Materials science 223 (NMC 223)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
Programmes	BEng Metallurgical Engineering
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Prerequisites	NMC 113 or NMC 123
Contact time	4 lectures per week, 2 practicals per week
Language of tuition	English
Academic organisation	Materials Science and Metallur
Period of presentation	Semester 2

Module content

Phase diagrams, phases and solid solutions. The heat treatment of steel (phase equilibria, the diffusion-controlled and martensitic transformations of austenite, hardening and tempering, hardenability, the application of IT and CCT diagrams, heat treatments). Steel types and classification. Cast irons (white, grey, malleable and spherical graphite irons). Stainless steels (ferritic, martensitic, austenitic and duplex types).