

University of Pretoria Yearbook 2017

Pyrometallurgy 321 (NPM 321)

Qualification Undergraduate

Faculty [Faculty of Engineering, Built Environment and Information Technology](#)

Module credits 16.00

Programmes [BEng Metallurgical Engineering](#)
[BEng Metallurgical Engineering ENGAGE](#)

Prerequisites (NPT 220)

Contact time 2 tutorials per week, 3 lectures per week

Language of tuition Module is presented in English

Academic organisation Materials Science and Metallur

Period of presentation Semester 2

Module content

Overview of pyrometallurgical process routes, types of reactions, and reactor designs. Review of relevant thermodynamic principles (equilibrium constants, Henrian and Raoultian activities and activity coefficients). Slag basicity and viscosity. Energy and reductants. Overview of pyrometallurgical separation principles (vapour-phase, solid-state and liquid-liquid routes). Examples of pyrometallurgical separation processes (ironmaking and steelmaking, sulphide smelting and converting, ferroalloys).

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