

University of Pretoria Yearbook 2017

Process metallurgy and control 412 (NPB 412)

Qualification Undergraduate

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

Module credits 8.00

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

Prerequisites (NPM 321)

Contact time 1 tutorial per week, 2 lectures per week

Language of tuition Module is presented in English

Academic organisation Materials Science and Metallur

Period of presentation Semester 1

Module content

Elements of metallurgical process control (principles, selection of proportional-integral controller, identification of controlled and manipulated variables and disturbances). Transient and steady-state heat transfer in metallurgy (formation of freeze layers, heating and cooling of components). Principles of reaction kinetics in pyrometallurgy (types and identification of rate-determining steps, quantification of overall reaction rate).

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