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# University of Pretoria Yearbook 2019

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## Hydrometallurgy 412 (NHM 412)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	<a href="#">Faculty of Engineering, Built Environment and Information Technology</a>
<b>Module credits</b>	16.00
<b>Programmes</b>	<a href="#">BEng Metallurgical Engineering</a> <a href="#">BEng Metallurgical Engineering Engage</a>
<b>Prerequisites</b>	(NHM 322)
<b>Contact time</b>	3 lectures per week, 2 tutorials per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Materials Science and Metallurgical Engineering
<b>Period of presentation</b>	Semester 1

### Module content

Extraction routes and the extractive metallurgy of metals such as gold, copper, zinc, manganese, nickel, cobalt, uranium and the platinum group elements, from ores and secondary sources. Application of thermodynamics and reaction kinetics (including laboratory kinetic data) in understanding and optimisation of extraction routes, and sizing of reactors. Environmental impact of processing routes.

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