

University of Pretoria Yearbook 2016

Industrial waste engineering 780 (WAI 780)

Qualification Postgraduate

Faculty Faculty of Engineering, Built Environment and Information Technology

Module credits 32.00

Programmes BEngHons Environmental Engineering

BEngHons Water Utilisation Engineering

BScHons Applied Science Applied Science: Environmental Technology

BScHons Applied Science Applied Science: Water Utilisation

Prerequisites No prerequisites.

Contact time 32 contact hours per semester

Language of tuition English

Academic organisation Chemical Engineering

Period of presentation Semester 1 or Semester 2

Module content

Identification of source materials, physical and chemical properties of waste. Release and transport mechanisms from source to air, groundwater, soil. Primary pathways of contaminants including sorption, volatilisation, biotic and abiotic transformations. Toxicology: absorption, distribution, biochemical transformation, and secretion of chemicals. Acute and chronic toxicity quantification and evaluation of risk. Hazard identification, exposure assessment, toxicity assessment and risk characterisation. Minimum requirements for the handling, classification and disposal of hazardous waste. Minimum requirements for waste disposal by landfill. Minimum requirements for water monitoring at waste management facilities. Recycling and resource management. Waste prevention, minimisation and optimisation.

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