

# BACCALAUREUS TECHNOLOGIAE: ENGINEERING: METALLURGY

Qualification code: BTMY02 - NQF Level 7

Campus where offered: Pretoria Campus (evening classes)  
Last year of new intake: 2019  
Teach-out (phase-out) date: 30 June 2021

Students registered for this qualification should complete their studies according to the teach-out date prescribed for the qualification, subject to the stipulations of Regulation 3.1.11 and 3.1.13 in the Students' Rules and Regulations.

Information on phased-out programmes can be obtained from the TUT website, [www.tut.ac.za](http://www.tut.ac.za).

Key to asterisk:

\* Information does not correspond to information in Report 151.  
(Deviations approved by the Senate in May 2007.)

## CURRICULUM

Consult the 2019 Faculty Prospectus for the full contents of the qualification.

## ATTENDANCE

CODE	SUBJECT	CREDIT
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### FIRST SEMESTER

PJM400T	Project: Metallurgy IV (year subject)	(0,250)
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**plus three\* of the following subjects (second-semester subjects included):**

ANP401T	Applied Mineral Processing IV	(0,250)
ENF401T	Extraction of Non-Ferrous Metals IV	(0,250)

### SECOND SEMESTER

FAT411T	Ferro-Alloy Technology IV	(0,250)
MGH301T	Metallurgical Thermodynamics III*	(0,250)

TOTAL CREDITS FOR THE QUALIFICATION: **1,000**

## SUBJECT INFORMATION (OVERVIEW OF SYLLABUS)

The syllabus content is subject to change to accommodate industry changes. Please note that a more detailed syllabus is available at the Department or in the study guide that is applicable to a particular module. On 01 October 2019, the syllabus content was defined as follows:

### A

#### APPLIED MINERAL PROCESSING IV (ANP401T)

#### CONTINUOUS ASSESSMENT

*(Subject custodian: Department of Chemical, Metallurgical and Materials Engineering)*

Project that consists of a mineral processing plant design. Cost estimation. Metallurgical plant commissioning.  
(Total tuition time: ± 60 hours)



**E****EXTRACTION OF NON-FERROUS METALS IV (ENF401T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Chemical, Metallurgical and Materials Engineering)**

Extraction of PGMs, extraction reaction kinetics and thermodynamics. Extraction of vanadium, uranium, titanium and nickel by using both pyro- and hydro-metallurgy. Applied thermodynamics. Pyro-metallurgy. Hydro-metallurgy. Electro-metallurgy. Project. (Total tuition time: ± 60 hours)

**F****FERRO-ALLOY TECHNOLOGY IV (FAT411T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Chemical, Metallurgical and Materials Engineering)**

Pyro-metallurgy. Stainless steel production. Non-ferrous metals. Mathematical modelling. (Total tuition time: ± 60 hours)

**M****METALLURGICAL THERMODYNAMICS III (MGH301T)****1 X 3-HOUR PAPER****(Subject custodian: Department of Chemical, Metallurgical and Materials Engineering)**

Application of the thermodynamics laws to metallurgical processes including extraction and refining of metals, electrochemistry, interfacial phenomena, and corrosion. Topics will include, review of thermodynamics laws and functions, free energy and phase equilibria, solution thermodynamics, kinetics of metallurgical reaction systems. (Total tuition time: ± 60 hours)

**P****PROJECT: METALLURGY IV (PJM400T)****PROJECT ASSESSMENT****(Subject custodian: Department of Chemical, Metallurgical and Materials Engineering)**

Students must undertake an experimental examination of an approved physical or extractive metallurgical topic. It must consist of a literature study, planning and execution of experimental work, the interpretation of results and an oral, as well as a written, report. (Total tuition time: ± 60 hours)

