

University of Pretoria Yearbook 2025

Specialisation: Sustainable chemical engineering practices 423 (CSS 423)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
NQF Level	08
Programmes	BEng in Chemical Engineering 4-year programme BEng in Chemical Engineering 5-year programme
Prerequisites	CPJ 421# and admission into relevant programme.
Contact time	4 lectures per week
Language of tuition	Module is presented in English
Department	Chemical Engineering
Period of presentation	Semester 2

Module content

The purpose of this module is to introduce chemical engineering students to the concepts of sustainable chemical engineering practices and their roles in circular economy and sustainable development. Topics to explore include:

- Introduction to sustainable chemical engineering and circular economy
- Nanotechnology and its applications in sustainable energy and environment
- Advanced and applied materials in sustainable energy and environment
- Biotechnology and its role in sustainable development
- Waste treatment and valorisation into value-added commodities
- 4th industrial revolution and its role in sustainable chemical engineering practices
- Modelling and simulation as a tool in sustainable chemical engineering practices
- Sustainable development, EIA, DfE, MIfCA
- Safety process engineering and loss prevention and control in industry
- Hydrogen economy

General Academic Regulations and Student Rules

The [General Academic Regulations \(G Regulations\)](#) and [General Student Rules](#) apply to all faculties and registered students of the University, as well as all prospective students who have accepted an offer of a place at the University of Pretoria. On registering for a programme, the student bears the responsibility of ensuring that

they familiarise themselves with the General Academic Regulations applicable to their registration, as well as the relevant faculty-specific and programme-specific regulations and information as stipulated in the relevant yearbook. Ignorance concerning these regulations will not be accepted as an excuse for any transgression, or basis for an exception to any of the aforementioned regulations. The G Regulations are updated annually and may be amended after the publication of this information.

Regulations, degree requirements and information

The faculty regulations, information on and requirements for the degrees published here are subject to change and may be amended after the publication of this information.

University of Pretoria Programme Qualification Mix (PQM) verification project

The higher education sector has undergone an extensive alignment to the Higher Education Qualification Sub-Framework (HEQSF) across all institutions in South Africa. In order to comply with the HEQSF, all institutions are legally required to participate in a national initiative led by regulatory bodies such as the Department of Higher Education and Training (DHET), the Council on Higher Education (CHE), and the South African Qualifications Authority (SAQA). The University of Pretoria is presently engaged in an ongoing effort to align its qualifications and programmes with the HEQSF criteria. Current and prospective students should take note that changes to UP qualification and programme names, may occur as a result of the HEQSF initiative. Students are advised to contact their faculties if they have any questions.