



# University of Pretoria Yearbook 2023

## Specialisation: Sustainable chemical engineering practices 423 (CSS 423)

<b>Qualification</b>	Undergraduate
<b>Faculty</b>	Faculty of Engineering, Built Environment and Information Technology
<b>Module credits</b>	16.00
<b>NQF Level</b>	08
<b>Programmes</b>	BEng (Chemical Engineering) BEng (Chemical Engineering) ENGAGE
<b>Prerequisites</b>	CPJ 421#
<b>Contact time</b>	4 lectures per week
<b>Language of tuition</b>	Module is presented in English
<b>Department</b>	Chemical Engineering
<b>Period of presentation</b>	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

### Regulations and rules

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



---

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.

#### **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 (HEQF) 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.