



University of Pretoria Yearbook 2023

BScHons (Applied Science) (Chemical Technology) (12243004)

Department Chemical Engineering

Minimum duration of study 1 year

Total credits 128

NQF level 08

Programme information

The BScHons (Applied Science) degree is conferred by the following academic departments:

- Chemical Engineering
- Civil Engineering
- Industrial and Systems Engineering
- Materials Science and Metallurgical Engineering
- Mechanical and Aeronautical Engineering
- Mining Engineering

Any specific module is offered on the condition that a minimum number of students are registered for the module, as determined by the relevant head of department and the Dean. Students must consult the relevant head of department in order to compile a meaningful programme, as well as on the syllabi of the modules. The relevant departmental postgraduate brochures must also be consulted.

Admission requirements

1. Three-year BSc (or equivalent) degree (in Natural Sciences) with a cumulative weighted average of at least 60% for the degree and a full year of Mathematics, Physics and Chemistry passed at least at first-year level (modules entitled "Introductory", "Elementary" or "Basic" will not be regarded as acceptable) or relevant BTech qualification excluding the National Diploma; i.e. one offered by a department of chemical engineering at a university of technology in South Africa with a cumulative weighted average of at least 75% for the degree and no modules failed in the BTech degree or a relevant Advanced Diploma qualification (NQF Level 7), excluding the National Diploma; i.e. one offered by a department of chemical engineering at a university of technology in South Africa



with a cumulative weighted average of at least 70% for the diploma

and

no modules failed in the Advanced Diploma

or

a four-year engineering-based university degree not recognised by ECSA for registration as a professional engineer

and

a full year of Mathematics, Physics and Chemistry passed at least at first-year level (modules entitled “Introductory”, “Elementary” or “Basic” will not be regarded as acceptable)

or

BEng degree awarded by the University of Pretoria

or

relevant four-year bachelor’s degree in engineering that the Engineering Council of South Africa (ECSA) regards as acceptable for registration as a candidate engineer and for eventual registration as a professional engineer

2. An entrance examination may be required

3. Comprehensive intellectual CV

Other programme-specific information

A limited number of appropriate postgraduate modules from other departments are allowed. Not all modules listed are presented each year. Please consult the departmental postgraduate brochure.

Specialisation in Process Technology is possible by registering for specific modules. (Please note that a candidate selecting this option will not be allowed to register for any modules at 700-level before the modules of the first semester at 400-level had been completed successfully.) Please consult the department.

Examinations and pass requirements

Refer also to G18 and G26.

- i. The examination in each module for which a student is registered, takes place during the normal examination period after the conclusion of lectures (i.e. October/November or May/June).
- ii. G18(1) applies with the understanding that under exceptional circumstances an extension of a maximum of three years may be approved: provided that the Dean, on recommendation of the relevant head of department, may approve a stipulated limited extension of this period.
- iii. A student must obtain at least 50% in an examination for each module where no semester or year mark is required. A module may only be repeated once.
- iv. In modules where semester or year marks are awarded, a minimum examination mark of 40% and a final mark of 50% is required.
- v. No supplementary or special examinations are granted at postgraduate level.

Pass with distinction

A student passes with distinction if he or she obtains a weighted average of at least 75% (not rounded) in the first 128 credits for which he or she has registered (excluding modules which were discontinued timeously). The degree is not awarded with distinction if a student fails any one module (excluding modules which were discontinued timeously). The degree must be completed within the prescribed study period.



General 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 (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.



Curriculum: Final year

Minimum credits: 128

Core modules

Bioprocessing 732 (CBP 732)

Module credits	32.00
NQF Level	08
Prerequisites	No prerequisites.
Contact time	32 contact hours per semester
Language of tuition	Module is presented in English
Department	Chemical Engineering
Period of presentation	Semester 2

Module content

Description of industrial biotechnology in a process engineering environment. Focus on specific applications in the mining, agricultural, paper and pulp, medical, pharmaceutical, veterinary, brewing and food industries. Principles including implications of bio-prospecting, bio-safety, inoculum production, aseptic growth, quality control and product formulation as applicable to bio-processes. Fermentation with various microbial groups, bio-leaching, gene transfer, solid-substrate fermentation, enzymatic catalysis and immunology. Bioreactors, batch and continuous processing. Bio-remediation.

Fluoro-materials science research and technology 732 (CFT 732)

Module credits	32.00
NQF Level	08
Prerequisites	Admission to relevant programme.
Contact time	2 lectures per week
Language of tuition	Module is presented in English
Department	Chemical Engineering
Period of presentation	Semester 2

Chemical engineering 707 (CIR 707)

Module credits	32.00
NQF Level	08
Prerequisites	Registration requires departmental approval.
Contact time	8 contact hours per semester
Language of tuition	Module is presented in English
Department	Chemical Engineering



Period of presentation Year

Chemical engineering 787 (CIR 787)

Module credits 16.00

NQF Level 08

Prerequisites Registration requires departmental approval.

Contact time 10 lectures per week

Language of tuition Module is presented in English

Department Chemical Engineering

Period of presentation Semester 1 or Semester 2

Carbon materials science research and technology 732 (CMS 732)

Module credits 32.00

NQF Level 08

Prerequisites Admission to relevant programme.

Contact time 10 lectures per week

Language of tuition Module is presented in English

Department Chemical Engineering

Period of presentation Semester 1 or Semester 2

Product design 732 (CPO 732)

Module credits 32.00

NQF Level 08

Prerequisites Admission to relevant programme.

Contact time 24 contact hours per semester

Language of tuition Module is presented in English

Department Chemical Engineering

Period of presentation Semester 1

Polymer processing 732 (CPP 732)

Module credits 32.00

NQF Level 08

Prerequisites Admission to relevant programme.

Contact time 32 contact hours per semester

Language of tuition Module is presented in English

Department Chemical Engineering



Period of presentation Semester 1 or Semester 2

Polymer materials science and research 732 (CPW 732)

Module credits 32.00

NQF Level 08

Prerequisites Admission to relevant programme.

Contact time 32 contact hours per semester

Language of tuition Module is presented in English

Department Chemical Engineering

Period of presentation Semester 1

Separation technology 732 (CSK 732)

Module credits 32.00

NQF Level 08

Prerequisites No prerequisites.

Contact time 32 contact hours per semester

Language of tuition Module is presented in English

Department Chemical Engineering

Period of presentation Semester 2

Additive technology 732 (CYM 732)

Module credits 32.00

NQF Level 08

Prerequisites Admission to relevant programme.

Contact time 32 contact hours per semester

Language of tuition Module is presented in English

Department Chemical Engineering

Period of presentation Semester 1

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.

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