University of Pretoria Yearbook 2021

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
   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 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.

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 1

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 1

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