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# University of Pretoria Yearbook 2020

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## BScHons Applied Science Chemical Technology (12243004)

**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

- Any one of the following:
  - a three-year BSc degree (in natural sciences) (or equivalent) with a weighted average of at least 60%;
  - an appropriate BTech qualification, i.e. one offered by a department of chemical engineering at a university of technology in South Africa, with a weighted average of at least 75% and no modules failed in the BTech, excluding the National Diploma;
  - a four-year engineering-based university degree not recognised by ECSA for registration as a professional engineer.
- The departmental Postgraduate Committee reserves the right to make a thorough assessment of the applicant's academic transcript and CV, and to decide if the applicant is suitable for postgraduate studies. This assessment may include an oral or written entrance examination.
- A full year of Mathematics, Physics and Chemistry must have been passed at least at first-year level. Modules entitled "Introductory", "Elementary" or "Basic" will not be regarded as acceptable.



## 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)

|                               |                                |
|-------------------------------|--------------------------------|
| <b>Module credits</b>         | 32.00                          |
| <b>Prerequisites</b>          | No prerequisites.              |
| <b>Contact time</b>           | 32 contact hours per semester  |
| <b>Language of tuition</b>    | Module is presented in English |
| <b>Department</b>             | Chemical Engineering           |
| <b>Period of presentation</b> | 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)

|                               |                                |
|-------------------------------|--------------------------------|
| <b>Module credits</b>         | 32.00                          |
| <b>Prerequisites</b>          | No prerequisites.              |
| <b>Contact time</b>           | 2 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                     |

#### Chemical engineering 707 (CIR 707)

|                               |  |
|-------------------------------|--|
| <b>Module credits</b>         | 32.00  |
| <b>Prerequisites</b>          | Registration requires departmental approval. |
| <b>Contact time</b>           | 8 contact hours per semester                 |
| <b>Language of tuition</b>    | Module is presented in English               |
| <b>Department</b>             | Chemical Engineering                         |
| <b>Period of presentation</b> | Year   |

#### Chemical engineering 787 (CIR 787)

|                       |       |
|-----------------------|-------|
| <b>Module credits</b> | 16.00 |
|-----------------------|-------|



|                               |  |
|-------------------------------|--|
| <b>Prerequisites</b>          | Registration requires departmental approval. |
| <b>Contact time</b>           | 10 lectures per week                         |
| <b>Language of tuition</b>    | Module is presented in English               |
| <b>Department</b>             | Chemical Engineering                         |
| <b>Period of presentation</b> | Semester 1 or Semester 2                     |

### **Carbon materials science research and technology 732 (CMS 732)**

|                               |                                |
|-------------------------------|--------------------------------|
| <b>Module credits</b>         | 32.00                          |
| <b>Prerequisites</b>          | No prerequisites.              |
| <b>Contact time</b>           | 10 lectures per week           |
| <b>Language of tuition</b>    | Module is presented in English |
| <b>Department</b>             | Chemical Engineering           |
| <b>Period of presentation</b> | Semester 1 or Semester 2       |

### **Product design 732 (CPO 732)**

|                               |                                |
|-------------------------------|--------------------------------|
| <b>Module credits</b>         | 32.00                          |
| <b>Prerequisites</b>          | No prerequisites.              |
| <b>Contact time</b>           | 24 contact hours per semester  |
| <b>Language of tuition</b>    | Module is presented in English |
| <b>Department</b>             | Chemical Engineering           |
| <b>Period of presentation</b> | Semester 1                     |

### **Polymer processing 732 (CPP 732)**

|                               |                                |
|-------------------------------|--------------------------------|
| <b>Module credits</b>         | 32.00                          |
| <b>Prerequisites</b>          | No prerequisites.              |
| <b>Contact time</b>           | 32 contact hours per semester  |
| <b>Language of tuition</b>    | Module is presented in English |
| <b>Department</b>             | Chemical Engineering           |
| <b>Period of presentation</b> | Semester 1 or Semester 2       |

### **Polymer materials science and research 732 (CPW 732)**

|                            |                                |
|----------------------------|--------------------------------|
| <b>Module credits</b>      | 32.00                          |
| <b>Prerequisites</b>       | No prerequisites.              |
| <b>Contact time</b>        | 32 contact hours per semester  |
| <b>Language of tuition</b> | Module is presented in English |
| <b>Department</b>          | Chemical Engineering           |



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|-------------------------------|------------|
| <b>Period of presentation</b> | Semester 1 |
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### Separation technology 732 (CSK 732)

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| <b>Module credits</b> | 32.00 |
|-----------------------|-------|

|                      |                   |
|----------------------|-------------------|
| <b>Prerequisites</b> | No prerequisites. |
|----------------------|-------------------|

|                     |                               |
|---------------------|-------------------------------|
| <b>Contact time</b> | 32 contact hours per semester |
|---------------------|-------------------------------|

|                            |                                |
|----------------------------|--------------------------------|
| <b>Language of tuition</b> | Module is presented in English |
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|-------------------|----------------------|
| <b>Department</b> | Chemical Engineering |
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|-------------------------------|------------|
| <b>Period of presentation</b> | Semester 1 |
|-------------------------------|------------|

### Additive technology 732 (CYM 732)

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|-----------------------|-------|
| <b>Module credits</b> | 32.00 |
|-----------------------|-------|

|                      |                   |
|----------------------|-------------------|
| <b>Prerequisites</b> | No prerequisites. |
|----------------------|-------------------|

|                     |                               |
|---------------------|-------------------------------|
| <b>Contact time</b> | 32 contact hours per semester |
|---------------------|-------------------------------|

|                            |                                |
|----------------------------|--------------------------------|
| <b>Language of tuition</b> | Module is presented in English |
|----------------------------|--------------------------------|

|                   |                      |
|-------------------|----------------------|
| <b>Department</b> | Chemical Engineering |
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|                               |            |
|-------------------------------|------------|
| <b>Period of presentation</b> | Semester 1 |
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The information published here is subject to change and may be amended after the publication of this information. The [General Regulations \(G Regulations\)](#) apply to all faculties of the University of Pretoria. It is expected of students to familiarise themselves well with these regulations as well as with the information contained in the [General Rules](#) section. Ignorance concerning these regulations and rules will not be accepted as an excuse for any transgression.