Program Code
BENGH

Program Minimum Units
102

Standard Duration
4 Years

Program Faculty
Faculty of Engineering, Computer and Math Sciences

AQF Level
08

Academic Year
2020

These Program Rules should be read in conjunction with the University's policies (http://www.adelaide.edu.au/policies).

Overview
This program will provide students with a background in the physical sciences, chemical engineering core disciplines, integrated design skills and research training. All Engineering students will complete a common first year before branching out into their disciplines and majors. The first two years of the program are spent developing an understanding of the foundation courses of chemical engineering, which are increasingly put into practice in the third and fourth years via major design, research and experimental projects. The program offers majors in Minerals Processing or Pharmaceutical as well as an interdisciplinary major in Renewable Energy. The Bachelor of Engineering (Honours) Chemical is an AQF Level 08 qualification with a standard full-time duration of 4 years. This program is accredited by Engineers Australia and graduates of the program qualify for professional membership of Engineers Australia and Institute of Chemical Engineers (IChemE) (UK).

Conditions
Condition of enrolment
Interruption of program: Students must apply for permission from the Executive Dean or delegate before taking a Leave of Absence. Any extension of the leave without approval will result in the loss of place in the program but an application may be made to be re-admitted to the program subject to the admission procedures in place at the time.

Academic Program Rules for Bachelor of Engineering (Honours) (Chemical) (BE(Hons)(Chem))

There shall be a Bachelor of Engineering (Honours) (Chemical) (BE(Hons)(Chem)).

Qualification Requirements
Academic Program
To qualify for the degree of Bachelor of Engineering (Honours) Chemical, the student must complete satisfactorily a program of study consisting of the following courses with a combined total of not less than 102 units, comprising:

1. Courses to the value of 102; Core courses up to the value of 87 units and Elective courses up to the value of 15 with the option of a major in one of the following:
   - Minerals Processing
   - Pharmaceutical engineering
   - Renewable Energy
2. Engineering Practice courses include work placements. A total of 8 weeks of approved engineering work placements is required.
3. Unless exempted, International students are required to take ENG 1011 Introduction to Engineering EAL in lieu of ENG 1001 Introduction to Engineering

**Bachelor of Engineering (Honours) (Chemical)**

To satisfy the requirements for Bachelor of Engineering (Honours) (Chemical) students must complete courses to the value of 102 units.

**Chemical Core**

All of the following courses must be completed:
- CHEM ENG 1007 *Introduction to Process Engineering* (3 units)
- CHEM ENG 2010 *Principles of Process Engineering* (3 units)
- CHEM ENG 2011 *Process Engineering Thermodynamics* (3 units)
- CHEM ENG 2014 *Heat and Mass Transfer* (3 units)
- CHEM ENG 2018 *Process Fluid Mechanics* (3 units)
- CHEM ENG 3030 *Simulation and Concept Design* (3 units)
- CHEM ENG 3031 *Process Control & Instrumentation* (3 units)
- CHEM ENG 3033 *Separation Processes* (3 units)
- CHEM ENG 3034 *Kinetics and Reactor Design* (3 units)
- CHEM ENG 3035 *Multi-Phase Fluid & Particle Mechanics* (3 units)
- CHEM ENG 3036 *Unit Operations Laboratory* (3 units)
- CHEM ENG 3037 *Particulate Processes* (3 units)
- CHEM ENG 4034 *Professional Practice IV* (3 units)
- CHEM ENG 4050 *Advanced Chemical Engineering* (3 units)
- ENG 1001 *Introduction to Engineering* (3 units)
- ENG 1003 *Programming (Matlab and Excel)* (3 units)
- ENG 3004 *Interdisciplinary Professional Practice* (3 units)
- ENG 3100 *Engineering Practice 1* (3 units)
- ENG 3200 *Engineering Practice 2* (3 units)
- MATHS 1011 *Mathematics IA* (3 units)
- MATHS 1012 *Mathematics IB* (3 units)
- MATHS 2106 *Differential Equations for Engineers II* (3 units)
- MATHS 2107 *Statistics & Numerical Methods II* (3 units)

and

Courses to the value of 3 units from the following:
- CHEM 1100 *Chemistry IA* (3 units)
- CHEM 1101 *Foundations of Chemistry IA* (3 units)

and

Courses to the value of 3 units from the following:
- CHEM 1200 *Chemistry IB* (3 units)
- CHEM 1201 *Foundations of Chemistry IB* (3 units)
and

Courses to the value of up to 3 units may be taken from the following:

Level I Courses
CEME 1002 Introduction to Infrastructure (3 units)
CEME 1004 Engineering Mechanics - Statics (3 units)
CHEM ENG 1009 Materials I (3 units)
MECH ENG 1007 Engineering Mechanics - Dynamics (3 units)

or

Level I Arts, Professions or Science 3 unit elective

Chemical Courses - No Major

All of the following courses must be completed:
ENG 4001A Research Project Part A (3 units)
ENG 4001B Research Project Part B (3 units)
CHEM ENG 4014 Plant Design Project (6 units)

and

Courses to the value of 3 units from the following:
CHEM ENG 2012 Pharmaceutical Production Processes (3 units)
CHEM ENG 2019 Introduction to Minerals Processing (3 units)
ELEC ENG 4111 Distributed Generation Technologies (3 units)

plus

Chemical Electives - No Major

Level I or II Science elective to the value 3 units

and

Courses to the value of 6 units from the following:
CHEM ENG 4046 Combustion Processes (3 units)
CHEM ENG 4048 Biofuels, Biomass and Wastes (3 units)
CHEM ENG 4051 Water and Wastewater Engineering (3 units)
CHEM ENG 4053 Pinch Analysis and Process Synthesis (3 units)
CHEM ENG 4058 Hydrometallurgy and Electrometallurgy (3 units)
CHEM ENG 4059 Pyrometallurgy (3 units)

Minerals Processing Major

Major Courses

All of the following courses must be completed:
CHEM ENG 2019 Introduction to Minerals Processing (3 units)
CHEM ENG 4058 Hydrometallurgy and Electrometallurgy (3 units)
CHEM ENG 4059 Pyrometallurgy (3 units)
CEME 2004 Introduction to Geo-engineering (3 units)
ENG 4001A Research Project Part A (3 units)
ENG 4001B Research Project Part B (3 units)
CHEM ENG 4014 Plant Design Project (6 units)

Pharmaceutical Engineering Major
Major Courses

All of the following courses must be completed:
CHEM ENG 2012 *Pharmaceutical Production Processes* (3 units)
CHEM ENG 4014 *Plant Design Project* (6 units)
CHEM ENG 4036 *Pharmaceutical Process Validation & Quality* (3 units)
CHEM ENG 4060 *Pharmaceutical Formulation and Manufacturing* (3 units)
ENG 4001A Research Project Part A (3 units)
ENG 4001B Research Project Part B (3 units)
HLTH SC 2104 *Essential Understanding of Disease and Treatment* (3 units)

Renewable Energy Major

Major Courses

All of the following courses must be completed:
CHEM ENG 4014 *Plant Design Project* (6 units)
CHEM ENG 4048 *Biofuels, Biomass and Wastes* (3 units)
ELEC ENG 1101 *Electronic Systems* (3 units)
ELEC ENG 4111 *Distributed Generation Technologies* (3 units)
ENG 4001A Research Project Part A (3 units)
ENG 4001B Research Project Part B (3 units)
MECH ENG 4064 Renewable Power Technologies (3 units)

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