



THE UNIVERSITY  
of ADELAIDE

# Faculty of Engineering, Computer and Mathematical Sciences 2020 Study Plan

School of Chemical Engineering and Advanced Materials

Bachelor of Engineering (Honours) (Chemical) – All Majors

Semester 1 Start

[Bachelor of Engineering \(Honours\) \(Chemical\)](#)

[Bachelor of Engineering \(Honours\) \(Chemical\) - Renewable Energy Major](#)

[Bachelor of Engineering \(Honours\) \(Chemical\) - Minerals Processing Major](#)

[Bachelor of Engineering \(Honours\) \(Chemical\) - Pharmaceutical Engineering Major](#)

## Bachelor of Engineering (Honours) (Chemical)

Year 1				
S 1	MATHS 1012 Mathematics IA <input type="checkbox"/>	*CHEM 1100 Chemistry IA or CHEM 1101 Foundations of Chemistry IA <input type="checkbox"/>	CHEM ENG 1007 Introduction to Process Engineering <input type="checkbox"/>	▲ENG 1001 Introduction to Engineering <u>or</u> Level I Elective (see elective table) <input type="checkbox"/>
S 2	MATHS 1012 Mathematics IB <input type="checkbox"/>	*CHEM 1200 Chemistry IB or CHEM 1201 Foundations of Chemistry IB <input type="checkbox"/>	ENG 1003 Programming (Matlab and Excel) <input type="checkbox"/>	▲ENG 1001 Introduction to Engineering <u>or</u> Level I Elective (see elective table) <input type="checkbox"/>
Year 2				
S 1	MATHS 2106 Differential Equations for Engineers II <input type="checkbox"/>	CHEM ENG 2010 Principles of Process Engineering <input type="checkbox"/>	CHEM ENG 2018 Process Fluid Mechanics <input type="checkbox"/>	Level I/ II Science Electives <input type="checkbox"/>
S 2	MATHS 2107 Statistics & Numerical Methods II <input type="checkbox"/>	CHEM ENG 2011 Process Engineering Thermodynamics <input type="checkbox"/>	CHEM ENG 2014 Heat and Mass Transfer <input type="checkbox"/>	CHEM ENG 2012 Pharmaceutical Production Processes <b>OR</b> CHEM ENG 2019 Introduction to Minerals Processing <b>OR</b> **ELEC ENG 4111 Distributed Generation Technologies <input type="checkbox"/>
Year 3				
S 1	ENG 3004 Interdisciplinary Professional Practice <input type="checkbox"/>	CHEM ENG 3034 Kinetics and Reactor Design <input type="checkbox"/>	CHEM ENG 3035 Multi-Phase Fluid & Particle Mechanics <input type="checkbox"/>	CHEM ENG 3037 Particulate Processes <input type="checkbox"/>
S 2	CHEM ENG 3036 Unit Operations Laboratory <input type="checkbox"/>	CHEM ENG 3030 Simulation & Concept Design <input type="checkbox"/>	CHEM ENG 3031 Process Control and Instrumentation <input type="checkbox"/>	CHEM ENG 3033 Separation Processes <input type="checkbox"/>
Internship				
All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship (6 units) during the course of their studies – see note below elective table				
Year 4				
S 1	ENG 4001A Research Project Part A <input type="checkbox"/>	CHEM ENG 4034 Chemical Engineering Professional Practice IV <input type="checkbox"/>	CHEM ENG 4050 Advanced Chemical Engineering <input type="checkbox"/>	Chemical Engineering Elective (see elective table) <input type="checkbox"/>
S 2	ENG 4001B Research Project Part B <input type="checkbox"/>	CHEM ENG 4014 Plant Design Project (6 units) <input type="checkbox"/>		Chemical Engineering Elective (see elective table) <input type="checkbox"/>

Core Courses

## Electives Table

CHOOSE FROM THE FOLLOWING LEVEL I ELECTIVES				
S 1	CEME 1004 Engineering Mechanics - Statics <input type="checkbox"/>	ELEC ENG 1101 Electronic Systems <input type="checkbox"/>	Level I Arts, Professions, Science Subjects	
S 2	CEME 1002 Introduction to Infrastructure <input type="checkbox"/>	MECH ENG 1007 Engineering Mechanics - Dynamics <input type="checkbox"/>	CHEM ENG 1009 Materials I	Level I Arts, Professions, Science Subjects
CHOOSE FROM THE FOLLOWING CHEMICAL ENGINEERING ELECTIVES				
S 1	CHEM ENG 4046 Combustion Processes <input type="checkbox"/>	CHEM ENG 4051 Water and Wastewater Engineering <input type="checkbox"/>	CHEM ENG 4053 Pinch Analysis and Process Synthesis <input type="checkbox"/>	CHEM ENG 4059 Pyrometallurgy <input type="checkbox"/>
S 2	CHEM ENG Biofuels, Biomass and Wastes <input type="checkbox"/>	CHEM ENG 4058 Hydrometallurgy and Electrometallurgy <input type="checkbox"/>		

### NOTES

**EAL:** Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering

**\*Chemistry:** Students with at least C+ in SACE Stage 2 Chemistry (or equivalent) must enrol in CHEM 1100 Chemistry IA and CHEM 1200 Chemistry IB. All other students must enrol into CHEM 1101 Foundations of Chemistry IA and CHEM 1201 Foundations of Chemistry IB.

**\*\*** Students undertaking ELEC ENG 4111 Distributed Generation Technologies are required to complete ELEC ENG 1101 Electronic Systems in level II in lieu of current elective option.

**Internship:** The 8 weeks of internship must be supervised by a qualified engineer and may be completed in one placement or a series of placements. The Faculty recommends students undertake internships upon commencement of third year engineering courses. Enrolment into 6 unit internship course opens from S1 2021. Internships are self-sourced and resources are available through [Careers Service](#). Register with CareerHub to access a database where opportunities are posted.

**Program Rules:** For academic program rules please refer to the following website: <https://calendar.adelaide.edu.au/faculty/ecms>

### Information and Enrolment Advice:

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Website: <https://ecms.adelaide.edu.au/study-with-us/student-support>

## Bachelor of Engineering (Honours) (Chemical) - Renewable Energy Major

Year 1				
S 1	MATHS 1012 Mathematics IA <input type="checkbox"/>	*CHEM 1100 Chemistry IA or CHEM 1101 Foundations of Chemistry IA <input type="checkbox"/>	CHEM ENG 1007 Introduction to Process Engineering <input type="checkbox"/>	▲ENG 1001 Introduction to Engineering <u>or</u> Level I Elective (see elective table) <input type="checkbox"/>
S 2	MATHS 1012 Mathematics IB <input type="checkbox"/>	*CHEM 1200 Chemistry IB or CHEM 1201 Foundations of Chemistry IB <input type="checkbox"/>	ENG 1003 Programming (Matlab and Excel) <input type="checkbox"/>	▲ENG 1001 Introduction to Engineering <u>or</u> Level I Elective (see elective table) <input type="checkbox"/>
Year 2				
S 1	MATHS 2106 Differential Equations for Engineers II <input type="checkbox"/>	CHEM ENG 2010 Principles of Process Engineering <input type="checkbox"/>	CHEM ENG 2018 Process Fluid Mechanics <input type="checkbox"/>	ELEC ENG 1101 Electronic Systems <input type="checkbox"/>
S 2	MATHS 2107 Statistics & Numerical Methods II <input type="checkbox"/>	CHEM ENG 2011 Process Engineering Thermodynamics <input type="checkbox"/>	CHEM ENG 2014 Heat and Mass Transfer <input type="checkbox"/>	ELEC ENG 4111 Distributed Generation Technologies <input type="checkbox"/>
Year 3				
S 1	ENG 3004 Interdisciplinary Professional Practice <input type="checkbox"/>	CHEM ENG 3034 Kinetics and Reactor Design <input type="checkbox"/>	CHEM ENG 3035 Multi-Phase Fluid & Particle Mechanics <input type="checkbox"/>	CHEM ENG 3037 Particulate Processes <input type="checkbox"/>
S 2	CHEM ENG 3036 Unit Operations Laboratory <input type="checkbox"/>	CHEM ENG 3030 Simulation & Concept Design <input type="checkbox"/>	CHEM ENG 3031 Process Control and Instrumentation <input type="checkbox"/>	CHEM ENG 3033 Separation Processes <input type="checkbox"/>
Internship				
All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship (6 units) during the course of their studies – see note below elective table				
Year 4				
S 1	ENG 4001A Research Project Part A <input type="checkbox"/>	CHEM ENG 4034 Chemical Engineering Professional Practice IV <input type="checkbox"/>	MECH ENG 4064 Renewable Power Technologies <input type="checkbox"/>	CHEM ENG 4050 Advanced Chemical Engineering <input type="checkbox"/>
S 2	ENG 4001B Research Project Part B <input type="checkbox"/>	CHEM ENG 4014 Plant Design Project (6 units) <input type="checkbox"/>		CHEM ENG 4048 Biofuels, Biomass and Wastes <input type="checkbox"/>

Core Courses

Major Courses

## Electives Table

### CHOOSE FROM THE FOLLOWING LEVEL I ELECTIVES

S 1	CEME 1004 Engineering Mechanics - Statics <input type="checkbox"/>	Level I Arts, Professions, Science Subjects <input type="checkbox"/>		
S 2	CEME 1002 Introduction to Infrastructure <input type="checkbox"/>	MECH ENG 1007 Engineering Mechanics - Dynamics <input type="checkbox"/>	CHEM ENG 1009 Materials I	Level I Arts, Professions, Science Subjects

#### NOTES

^ **EAL:** Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering

\***Chemistry:** Students with at least C+ in SACE Stage 2 Chemistry (or equivalent) must enrol in CHEM 1100 Chemistry IA and CHEM 1200 Chemistry IB. All other students must enrol into CHEM 1101 Foundations of Chemistry IA and CHEM 1201 Foundations of Chemistry IB.

**Internship:** The 8 weeks of internship must be supervised by a qualified engineer and may be completed in one placement or a series of placements. The Faculty recommends students undertake internships upon commencement of third year engineering courses. Enrolment into 6 unit internship course opens from S1 2021. Internships are self-sourced and resources are available through [Careers Service](#). Register with CareerHub to access a database where opportunities are posted.

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## Bachelor of Engineering (Honours) (Chemical) - Minerals Processing Major

Year 1				
S 1	MATHS 1012 Mathematics IA <input type="checkbox"/>	*CHEM 1100 Chemistry IA or CHEM 1101 Foundations of Chemistry IA <input type="checkbox"/>	CHEM ENG 1007 Introduction to Process Engineering <input type="checkbox"/>	▲ENG 1001 Introduction to Engineering <u>or</u> Level I Elective (see elective table) <input type="checkbox"/>
S 2	MATHS 1012 Mathematics IB <input type="checkbox"/>	*CHEM 1200 Chemistry IB or CHEM 1201 Foundations of Chemistry IB <input type="checkbox"/>	ENG 1003 Programming (Matlab and Excel) <input type="checkbox"/>	▲ENG 1001 Introduction to Engineering <u>or</u> Level I Elective (see elective table) <input type="checkbox"/>
Year 2				
S 1	MATHS 2106 Differential Equations for Engineers II <input type="checkbox"/>	CHEM ENG 2010 Principles of Process Engineering <input type="checkbox"/>	CHEM ENG 2018 Process Fluid Mechanics <input type="checkbox"/>	CEME 2004 Introduction to Geo-Engineering <input type="checkbox"/>
S 2	MATHS 2107 Statistics & Numerical Methods II <input type="checkbox"/>	CHEM ENG 2011 Process Engineering Thermodynamics <input type="checkbox"/>	CHEM ENG 2014 Heat and Mass Transfer <input type="checkbox"/>	CHEM ENG 2019 Introduction to Minerals Processing <input type="checkbox"/>
Year 3				
S 1	ENG 3004 Interdisciplinary Professional Practice <input type="checkbox"/>	CHEM ENG 3034 Kinetics and Reactor Design <input type="checkbox"/>	CHEM ENG 3035 Multi-Phase Fluid and Particle Mechanics <input type="checkbox"/>	CHEM ENG 3037 Particulate Processes <input type="checkbox"/>
S 2	CHEM ENG 3036 Unit Operations Laboratory <input type="checkbox"/>	CHEM ENG 3030 Simulation & Concept Design <input type="checkbox"/>	CHEM ENG 3031 Process Control and Instrumentation <input type="checkbox"/>	CHEM ENG 3033 Separation Processes <input type="checkbox"/>
Internship				
All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship (6 units) during the course of their studies – see note below elective table				
Year 4				
S 1	ENG 4001A Research Project Part A <input type="checkbox"/>	CHEM ENG 4034 Chemical Engineering Professional Practice IV <input type="checkbox"/>	CHEM ENG 4050 Advanced Chemical Engineering <input type="checkbox"/>	CHEM ENG 4059 Pyrometallurgy <input type="checkbox"/>
S 2	ENG 4001B Research Project Part B <input type="checkbox"/>	CHEM ENG 4014 Plant Design Project (6 units) <input type="checkbox"/>		CHEM ENG 4058 Hydrometallurgy and Electrometallurgy <input type="checkbox"/>

Core Courses      Major Courses

## Electives Table

**CHOOSE FROM THE FOLLOWING LEVEL I ELECTIVES**

S 1	CEME 1004 Engineering Mechanics - Statics <input type="checkbox"/>	ELEC ENG 1101 Electronic Systems <input type="checkbox"/>	Level I Arts, Professions, Science Subjects	
S 2	CEME 1002 Introduction to Infrastructure <input type="checkbox"/>	MECH ENG 1007 Engineering Mechanics - Dynamics <input type="checkbox"/>	CHEM ENG 1009 Materials I	Level I Arts, Professions, Science Subjects

### NOTES

**^ EAL:** Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering

**\*Chemistry:** Students with at least C+ in SACE Stage 2 Chemistry (or equivalent) must enrol in CHEM 1100 Chemistry IA and CHEM 1200 Chemistry IB. All other students must enrol into CHEM 1101 Foundations of Chemistry IA and CHEM 1201 Foundations of Chemistry IB.

**Internship:** The 8 weeks of internship must be supervised by a qualified engineer and may be completed in one placement or a series of placements. The Faculty recommends students undertake internships upon commencement of third year engineering courses. Enrolment into 6 unit internship course opens from S1 2021. Internships are self-sourced and resources are available through [Careers Service](#). Register with CareerHub to access a database where opportunities are posted.

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## Bachelor of Engineering (Honours) (Chemical) - Pharmaceutical Engineering Major

Year 1				
S 1	MATHS 1012 Mathematics IA <input type="checkbox"/>	*CHEM 1100 Chemistry IA or CHEM 1101 Foundations of Chemistry IA <input type="checkbox"/>	CHEM ENG 1007 Introduction to Process Engineering <input type="checkbox"/>	#ANAT SC 1102 Human Anatomy and Physiology IA <u>or</u> BIOLOGY 1101 Biology I: Molecules Genes and Cells <input type="checkbox"/>
S 2	MATHS 1012 Mathematics IB <input type="checkbox"/>	*CHEM 1200 Chemistry IB or CHEM 1201 Foundations of Chemistry IB <input type="checkbox"/>	ENG 1003 Programming (Matlab and Excel) <input type="checkbox"/>	^ENG 1001 Introduction to Engineering <input type="checkbox"/>
Year 2				
S 1	MATHS 2106 Differential Equations for Engineers II <input type="checkbox"/>	CHEM ENG 2010 Principles of Process Engineering <input type="checkbox"/>	CHEM ENG 2018 Process Fluid Mechanics <input type="checkbox"/>	HLTH SC 2104 Essential Understanding of Disease and Treatment <input type="checkbox"/>
S 2	MATHS 2107 Statistics & Numerical Methods II <input type="checkbox"/>	CHEM ENG 2011 Process Engineering Thermodynamics <input type="checkbox"/>	CHEM ENG 2014 Heat and Mass Transfer <input type="checkbox"/>	CHEM ENG 2012 Pharmaceutical Production Processes <input type="checkbox"/>
Year 3				
S 1	ENG 3004 Interdisciplinary Professional Practice <input type="checkbox"/>	CHEM ENG 3034 Kinetics and Reactor Design <input type="checkbox"/>	CHEM ENG 3035 Multi-Phase Fluid and Particle Mechanics <input type="checkbox"/>	CHEM ENG 3037 Particulate Processes <input type="checkbox"/>
S 2	CHEM ENG 3036 Unit Operations Laboratory <input type="checkbox"/>	CHEM ENG 3030 Simulation & Concept Design <input type="checkbox"/>	CHEM ENG 3031 Process Control and Instrumentation <input type="checkbox"/>	CHEM ENG 3033 Separation Processes <input type="checkbox"/>
Internship				
All Engineering students commencing from 2019 are required to complete a minimum of 8 weeks of internship (6 units) during the course of their studies – see note below elective table				
Year 4				
S 1	ENG 4001A Research Project Part A <input type="checkbox"/>	CHEM ENG 4034 Chemical Engineering Professional Practice IV <input type="checkbox"/>	CHEM ENG 4050 Advanced Chemical Engineering <input type="checkbox"/>	CHEM ENG 4060 Pharmaceutical Formulation & Manufacturing <input type="checkbox"/>
S 2	ENG 4001B Research Project Part B <input type="checkbox"/>	CHEM ENG 4014 Plant Design Project (6 units) <input type="checkbox"/>		CHEM ENG 4036 Pharmaceutical Process Validation & Quality <input type="checkbox"/>

Core Courses

Major Courses



## Electives Table

CHOOSE FROM THE FOLLOWING LEVEL I ELECTIVES					
S 1	CEME 1004 Engineering Mechanics - Statics <input type="checkbox"/>	ELEC ENG 1101 Electronic Systems <input type="checkbox"/>	Level I Arts, Professions, Science Subjects		
S 2	CEME 1002 Introduction to Infrastructure <input type="checkbox"/>	MECH ENG 1007 Engineering Mechanics - Dynamics <input type="checkbox"/>	CHEM ENG 1009 Materials I	Level I Arts, Professions, Science Subjects	

### NOTES

**^ EAL:** Unless exempted, International students are required to take ENG 1011 Introduction to Engineering - EAL in lieu of ENG 1001 Introduction to Engineering

**#Pharmaceutical Major:** Students must choose either ANAT SC 1102 Human Anatomy and Physiology IA or BIOLOGY 1101 Biology I: Molecules, Genes and Cells as a pre-requisite to HLTH SC 2104 Essential Understanding of Disease and Treatment in Year 2. The prerequisite course will be taken in lieu of the Level I elective.

**\*Chemistry:** Students with at least C+ in SACE Stage 2 Chemistry (or equivalent) must enrol in CHEM 1100 Chemistry IA and CHEM 1200 Chemistry IB. All other students must enrol into CHEM 1101 Foundations of Chemistry IA and CHEM 1201 Foundations of Chemistry IB.

**Internship:** The 8 weeks of internship must be supervised by a qualified engineer and may be completed in one placement or a series of placements. The Faculty recommends students undertake internships upon commencement of third year engineering courses. Enrolment into 6 unit internship course opens from S1 2021. Internships are self-sourced and resources are available through [Careers Service](#). Register with CareerHub to access a database where opportunities are posted.

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