

Chemical Engineering Re-enrolment Guide 2027

(Prepared by Course Director, Associate Professor Ir Dr Jolly Tan &
Course Director, Common Engineering, Dr Khong Wei Leong - Version 1.9.2026)

- Students are required to [re-enrol for both Semester 1](#) and [Semester 2](#) via [WES](#) (except for final semester students)
- All students MUST complete the [Malaysia General Studies](#) and [Industrial Training](#) before course completion
- Official Faculty of Engineering Course Maps, Elective and Minor website [link](#) (follow your commencing year intake)
- If you encounter issues with enrolment, please submit [SORS enrolment form](#)

Intake: Commencing July and Oct 2026

Units to be enrolled for Second Semester of Year 1 - Semester 1 2027

Semester 1 2027 units

Students who have completed ENG1090 combination in previous semester:

ENG1012	Engineering for People and Planet
ENG1014	Engineering Numerical Analysis
ENG1005	Engineering Mathematics
Choose ONE technical elective from below:	
- PHS1002 Physics for engineering - CHM1051 Chemistry 1 advanced (recommended for Chemical Engineering) - MEC2811 Manufacturing Processes - ENG1813 Next-Gen uncrewed vehicle - FIT1045 Introduction to programming - CHE2167 Process material selection - CHE2871 Biochemistry for engineers - BIO1011 Blueprints for life (Compulsory elective for Biomedical Engineering)	
Software Engineering students are recommended to complete FIT1045 as a breadth study unit.	

Students who have completed ENG1005 in previous semester:

ENG1012	Engineering for People and Planet
ENG1014	Engineering Numerical Analysis
Choose TWO technical electives from below:	
- PHS1002 Physics for engineering - CHM1051 Chemistry 1 advanced (recommended for Chemical Engineering) - MEC2811 Manufacturing Processes - ENG1813 Next-Gen uncrewed vehicle - FIT1045 Introduction to programming - CHE2167 Process material selection - CHE2871 Biochemistry for engineers - BIO1011 Blueprints for life (Compulsory elective for Biomedical Engineering)	
Software Engineering students are recommended to complete FIT1045 as a breadth study unit.	

Units to be enrolled for First Semester of Year 2 in Semester 2 2027

Semester 2 2027 units

Chemical Engineering

CHE2161	Mechanics of fluids
CHE2162	Material and energy balances
CHE2163	Heat and mass transfer
CHE2166	Introduction to process simulation*

* CHE2166 is a Year 2 elective unit for Chemical Engineering students. Although it is an elective, students are strongly encouraged to enrol, as the unit is designed to strengthen your practical skills in using Aspen Plus, a widely used process simulation software. The knowledge and skills gained in this unit will provide a solid foundation for later-year units, including CHE3165, CHE3166, and CHE4170, where Aspen Plus is extensively used for process simulation and design.

*IMPORTANT NOTE - End of Semester 1 2027

- Kindly ensure that your specialisation ('Area of Study') in WES is the **same as** your offer letter and international student pass.
- When the Semester 1 2027 exam results are released, kindly check that you have met the *prerequisites* of these Year 2 units. If you do not meet the pre / co-requisites, then the unit enrolled will become **INVALID**.
- Students who could **NOT PASS ALL CORE Year 1 UNITS**, MUST seek enrolment advice from the Course Director, Common Engineering (Dr Khong Wei Leong, khong.weileong@monash.edu)

Intake: Commencing February 2026

Chemical Engineering

Semester 1 2027 units

CHE2164	Thermodynamics I
ENG2005	Advanced engineering mathematics
CHE2873	Introduction to Chemical Processes
CHM1051	Chemistry 1 advanced (if taken in Y1, then to take Level 2 elective unit*)

*** Select ONE or More Elective Units (if applicable)**

CHE2167	Process material selection	Chemical Engineering Technical Elective
CHE2871	Biochemistry for engineers	Chemical Engineering Technical Elective
ECE2131	Electrical circuits	Part of Sensory Systems in Industry 4.0 Minor
ECE2071	Computer organisation and programming	Part of Sensory Systems in Industry 4.0 Minor

Semester 2 2027 units

CHE2161	Mechanics of fluids
CHE2162	Material and energy balances
CHE2163	Heat and mass transfer
CHE2166	Introduction to process simulation*

* CHE2166 is a Year 2 elective unit for Chemical Engineering students. Although it is an elective, students are strongly encouraged to enrol, as the unit is designed to strengthen your practical skills in using Aspen Plus, a widely used process simulation software. The knowledge and skills gained in this unit will provide a solid foundation for later-year units, including CHE3165, CHE3166, and CHE4170, where Aspen Plus is extensively used for process simulation and design.

Intake: Commencing July and Oct 2025

Chemical Engineering

Semester 1 2027 units

CHE2164	Thermodynamics I
ENG2005	Advanced engineering mathematics
CHE2873	Introduction to Chemical Processes
CHM1051	Chemistry 1 advanced (if taken in Y1, then to take Level 2 elective unit*)

*** Select ONE or More Elective Units (if applicable)**

CHE2167	Process material selection	Chemical Engineering Technical Elective
CHE2871	Biochemistry for engineers	Chemical Engineering Technical Elective
	Any other elective in the minor: - Artificial intelligence in engineering - Decarbonisation and net zero - Electric vehicle technology - Intelligent manufacturing - Semiconductor - Sensory systems in Industry 4.0 - Sustainable energy transition	

Semester 2 2027 units

CHE3162	Process control
CHE3164	Reaction engineering
CHE3166	Process design

*** Select ONE Elective**

CHE3171	Sustainable bioprocessing	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor
CHE3172	Nanotechnology and materials I	Chemical Engineering Technical Elective
CHE3873	Pilot Plant Project	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor <i>Enrolment in this unit is subject to students' performance in CHE2873. An Expression of Interest (EOI) is required.</i>
CHE4171	Biochemical engineering	Chemical Engineering Technical Elective
CHE4172	Nanotechnology and materials 2	Chemical Engineering Technical Elective
	Any other elective in the minor: - Artificial intelligence in engineering - Decarbonisation and net zero - Electric vehicle technology - Intelligent manufacturing - Semiconductor - Sensory systems in Industry 4.0 - Sustainable energy transition	

Semester Summer Semester A - SSA-02

ENG0002	Industrial Training
---------	---------------------

Students who have completed 120 credit points in their engineering studies and have not yet enrolled in ENG0002 are required to enrol in ENG0002 Industrial Training for the SSA-02 semester.

Intake: Commencing February 2025

Chemical Engineering

Semester 1 2027 units

CHE3161	Chemistry and chemical thermodynamics
CHE3165	Separation processes
CHE3167	Transport phenomena & numerical methods

*** Select ONE Elective**

CHE3163	Sustainable processing I	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor
CHE4173	Sustainable process integration	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor Part of Decarbonisation and net zero Minor
CHE3873	Pilot Plant Project	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor <i>Enrolment in this unit is subject to students' performance in CHE2873. An Expression of Interest (EOI) is required.</i>
	Any other elective in the minor: • Artificial intelligence in engineering • Decarbonisation and net zero • Electric vehicle technology • Intelligent manufacturing • Semiconductor • Sensory systems in Industry 4.0 • Sustainable energy transition	

Semester 2 2027 units

Option A

CHE3164	Reaction engineering
CHE3166	Process design
ENG4701	Final year project A

*** Select ONE Elective**

CHE3171	Sustainable bioprocessing	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor
CHE3172	Nanotechnology and materials I	Chemical Engineering Technical Elective
CHE3873	Pilot Plant Project	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor <i>Enrolment in this unit is subject to students' performance in CHE2873. An Expression of Interest (EOI) is required.</i>
CHE4171	Biochemical engineering	Chemical Engineering Technical Elective
CHE4172	Nanotechnology and materials 2	Chemical Engineering Technical Elective
CHE4807	Carbon footprint and energy management	Chemical Engineering Technical elective Part of Decarbonisation & Net Zero Minor
	Any other elective in the minor: • Artificial intelligence in engineering • Decarbonisation and net zero • Electric vehicle technology • Intelligent manufacturing • Semiconductor • Sensory systems in Industry 4.0 • Sustainable energy transition	

Option B

CHE3164	Reaction engineering
CHE3166	Process design
ENG4701	Final year project A
CHE3162	Process Control

Students choosing Option B will be enrolling TWO elective units with CHE4170 in Semester 2-2028.

Semester Summer Semester A - SSA-02

ENG0002	Industrial Training
---------	---------------------

Students who have completed 120 credit points in their engineering studies and have not yet enrolled in ENG0002 are required to enrol in ENG0002 Industrial Training for the SSA-02 semester.

Intake: Commencing July and Oct 2024

Chemical Engineering

Semester 1 2027 units

CHE3161	Chemistry and chemical thermodynamics
CHE3165	Separation processes
ENG4801	Professional practice (Curriculum embedded)

* Select ONE Elective

CHE3163	Sustainable processing I	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor
CHE4173	Sustainable process integration	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor Part of Decarbonisation and net zero Minor
CHE3873	Pilot Plant Project	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor <i>Enrolment in this unit is subject to students' performance in CHE2873. An Expression of Interest (EOI) is required.</i>
CHE4803	Carbon capture, storage and utilisation	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor Part of Decarbonisation & Net Zero Minor
CHE4806	Low-carbon technology	Chemical Engineering Technical Elective Part of Decarbonisation & Net Zero Minor
	Any other elective in the minor: • Artificial intelligence in engineering • Decarbonisation and net zero • Electric vehicle technology • Intelligent manufacturing • Semiconductor • Sensory systems in Industry 4.0 • Sustainable energy transition	

Semester 2 2027 units

ENG4701	Final year project A
CHE4170	Design project

* Select ONE Elective

CHE3171	Sustainable bioprocessing	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor
CHE3172	Nanotechnology and materials I	Chemical Engineering Technical Elective
CHE3873	Pilot Plant Project	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor <i>Enrolment in this unit is subject to students' performance in CHE2873. An Expression of Interest (EOI) is required.</i>
CHE4171	Biochemical engineering	Chemical Engineering Technical Elective
CHE4172	Nanotechnology and materials 2	Chemical Engineering Technical Elective
CHE4807	Carbon footprint and energy management	Chemical Engineering Technical elective Part of Decarbonisation & Net Zero Minor
	Any other elective in the minor: • Artificial intelligence in engineering • Decarbonisation and net zero • Electric vehicle technology • Intelligent manufacturing • Semiconductor	

	• Sensory systems in Industry 4.0 • Sustainable energy transition
--	--

Semester Summer Semester A - SSA-02

ENG0002	Industrial Training
---------	---------------------

Students who have completed 120 credit points in their engineering studies and have not yet enrolled in ENG0002 are required to enrol in ENG0002 Industrial Training for the SSA-02 semester.

Intake: Commencing February 2024

Chemical Engineering

Semester 1 2027 units

ENG4801	Professional practice (Curriculum embedded)
ENG4702	Final year project B
CHE4162	Particle technology

*** Select ONE Elective**

CHE3163	Sustainable processing I	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor
CHE4173	Sustainable process integration	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor Part of Decarbonisation and net zero Minor
CHE3873	Pilot Plant Project	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor <i>Enrolment in this unit is subject to students' performance in CHE2873. An Expression of Interest (EOI) is required.</i>
CHE4803	Carbon capture, storage and utilisation	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor Part of Decarbonisation & Net Zero Minor
CHE4806	Low-carbon technology	Chemical Engineering Technical Elective Part of Decarbonisation & Net Zero Minor
	Any other elective in the minor: • Artificial intelligence in engineering • Decarbonisation and net zero • Electric vehicle technology • Intelligent manufacturing • Semiconductor • Sensory systems in Industry 4.0 • Sustainable energy transition	

Semester 2 2027 units

CHE3162	Process control**
CHE4170	Design project

****If you are enrolled in CHE3162 in Semester 2, 2026, you must select one additional chemical engineering technical elective unit to complete the required credit points.**

*** Select ONE Elective**

CHE3171	Sustainable bioprocessing	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor
CHE3172	Nanotechnology and materials I	Chemical Engineering Technical Elective
CHE4171	Biochemical engineering	Chemical Engineering Technical Elective
CHE4172	Nanotechnology and materials 2	Chemical Engineering Technical Elective
CHE4807	Carbon footprint and energy management	Chemical Engineering Technical elective Part of Decarbonisation & Net Zero Minor
	Any other elective in the minor: • Artificial intelligence in engineering • Decarbonisation and net zero • Electric vehicle technology • Intelligent manufacturing • Semiconductor • Sensory systems in Industry 4.0 • Sustainable energy transition	

Intake: Commencing July and Oct 2023

Chemical Engineering

Semester 1 2027 units

CHE3167	Transport phenomena and numerical methods
ENG4702	Final Year Project B
CHE4162	Particle Technology

*** Select ONE Elective**

CHE3163	Sustainable processing I	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor
CHE4173	Sustainable process integration	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor Part of Decarbonisation and net zero Minor
CHE3873	Pilot Plant Project	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor <i>Enrolment in this unit is subject to students' performance in CHE2873. An Expression of Interest (EOI) is required.</i>
CHE4803	Carbon capture, storage and utilisation	Chemical Engineering Technical Elective Part of Sustainable Energy Transition Minor Part of Decarbonisation & Net Zero Minor
CHE4806	Low-carbon technology	Chemical Engineering Technical Elective Part of Decarbonisation & Net Zero Minor
	Any other elective in the minor: • Artificial intelligence in engineering • Decarbonisation and net zero • Electric vehicle technology • Intelligent manufacturing • Semiconductor • Sensory systems in Industry 4.0 • Sustainable energy transition	