



The University of Sydney

School of Chemical and Biomolecular Engineering

Master of Engineering (Sustainable Processing)

Program overview

This area of study works on broad questions of sustainability, especially of energy utilisation and protection of the environment and human amenity. There is multidisciplinary research to develop sustainable products and processes that maximise resource and energy efficiency and minimise environmental impact. Topics range from analysis of complex environmental systems to improvements in environmental performance of existing processes and the creation of new approaches

Students are required to study 48 credit points to complete this Master degree. Outstanding performance in this Master degree program can lead to acceptance into a Master by research or a PhD program. If students are offered admission into the Graduate Diploma program, students are only required to study 36 credit points to complete the degree. Outstanding performance in this Graduate Diploma program can lead to acceptance into a Master degree program in the School.

Admission:

Recognised equivalent Bachelor degree in Science, Engineering, Pharmacy or Technology.

Duration:

1-year full time, or 2-year part time.

Core units of study

24 credits of the core units of study are to be selected from this table as follows: CHNG5002 and CHNG5003 and 2 out of the 3 CIVL units of study offered

Unit of study	Credit points	A: Assumed knowledge P: Prerequisites C: Corequisites N: Prohibition	Session
CHNG5002 Environmental Decision Making (Wastewater Treatment Technologies)	6	A Ability to conduct mass and energy balances, and the integration of these concepts to solve 'real' chemical engineering problems. Ability to understand basic principles of physical chemistry, physics and mechanics. Ability to use basic calculus and linear algebra, and carry out such computations using Matlab and MS Excel. Ability to read widely outside of the technical literature and to synthesise arguments based on such literature. Ability to write coherent reports and essays based on information from diverse sources. P CHNG3801 Process Design CHNG3802 Operation, Analysis and Improvement of Industrial Systems CHNG3803 Design Practice 1 - Chemical & Biological Processes CHNG3805 Product Formulation and Design CHNG3806 Management of Industrial Systems CHNG3807 Design Practice 2 - Products and Value Chains <i>This UoS is an advanced elective in chemical engineering. The concepts and enabling technologies taught in this course are relevant to the real world practice of chemical engineering across a range of industries.</i>	Semester 2
CHNG5003 Green Engineering	6	A Enrolment in this unit of study assumes that all (six) core chemical engineering UoS in third year have been successfully completed. P CHNG3801 Process Design CHNG3802 Operation, Analysis and Improvement of Industrial Systems CHNG3803 Design Practice 1 - Chemical & Biological Processes CHNG3805 Product Formulation and Design CHNG3806 Management of Industrial Systems CHNG3807 Design Practice 2 - Products and Value Chains	Semester 2
CIVL5656 The Fluid Environment	6	<i>Note: Department permission required for enrolment</i>	Semester 1
CIVL5664 Mixing in the Marine Environment	6		Semester 2
CIVL5665 Advanced Water Resources Management	6		Semester 2

Recommended elective units of study

A minimum of 12 credits of the units of study to be selected from this table as follows: 1 unit of study from either CHNG5902, CHNG5906 or CHNG5907 and 1 unit of study from CIVL5901, CIVL5902, CIVL5903 or CIVL5904

CHNG5902 Project Part B	6	<i>Note: Department permission required for enrolment</i> <i>See School of Chemical and Biomolecular Engineering for information</i>	Semester 1 Semester 2
CHNG5906	12	<i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2

Extended Project		<i>See School of Chemical and Biomolecular Engineering for information</i>	
CHNG5907 Extended and Enhanced Project	24	<i>Note: Department permission required for enrolment See School of Chemical and Biomolecular Engineering for information</i>	Semester 1 Semester 2
CIVL5901 Civil Engineering Project 1	6	<i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2 Summer main
CIVL5902 Civil Engineering Project 2	6	C CIVL5901 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2 Summer main
CIVL5903 Major Project A	12	<i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2 Summer main
CIVL5904 Major Project B	12	C CIVL5903 <i>Note: Department permission required for enrolment</i>	Semester 1 Semester 2 Summer main

Please visit our website: www.chem.eng.usyd.edu.au or send us an email to: info@chem.eng.usyd.edu.au for more information.