DEPARTMENT OF CHEMICAL ENGINEERING

STUDY GUIDE
Semester 1
2021

CAUTION (DISCLAIMER)

The Department of Chemical Engineering has used all reasonable endeavours to ensure that the material contained in this Study Guide was correct at the time of being published. However:

1. The Department gives no warranty and accepts no responsibility for the accuracy or the completeness of the material.

2. No reliance should be made by any user on the material, but instead the user should check for confirmation with the originating or authorising faculty, department or other body.

3. The Department reserves the right at any time to make changes as it deems appropriate.

This material is to be used only as a guide and all current information can be obtained via the University of Melbourne website: http://www.unimelb.edu.au/.

This Study Guide has been produced by the Department of Chemical Engineering. If any incorrect information is found within this guide, please email our Academic Support Coordinator – Jie Sun (jie.sun1@unimelb.edu.au).

Contents

WELCOME TO THE DEPARTMENT OF CHEMICAL ENGINEERING

It is a pleasure to welcome all new students to the Department of Chemical Engineering at the University of Melbourne and those of you who are returning for later years of your course. We welcome the students from other countries and want you very much to feel part of the Department. As one of the top Chemical Engineering departments in the world, there continues to be a high demand for student places within our Department and we look forward to working with you to fulfil your career paths. Our Department is a fast growing and dynamic one with strong links to industry, government and fundamental research opportunities. We aim to teach at the highest of standards and many of our academics have excellence in teaching awards.

This Study Guide does not replace the official University of Melbourne Handbook but compiles information from there, as well as additional information in one place. Subject details are included, together with subject coordinators, some sample programs and assessment details.

Please make yourself aware of the many free student services available at the University of Melbourne. Full details are available on the University website **www.unimelb.edu.au**. Many students have benefited from accessing the Student Counselling Service, while the Academic Skills Unit can provide invaluable advice on study skills.

In terms of subjects offered within our Department, almost all the assignments and practical reports that you complete as part of your course are submitted through our Learning Management System (LMS), where they are automatically checked for Plagiarism (see page 30). All assignments must be submitted by the specific deadlines that are announced by each subject's coordinator. In addition, you will be required to complete a Laboratory Safety Sheet prior to commencing each practical exercise and this sheet needs to be handed to your laboratory demonstrator at the start of your laboratory class (see page 18 and 19). Please note that it is not wise to purchase textbooks until you receive advice from your Subject Coordinator.

We always appreciate feedback on how we can improve your experience with us. There are formal mechanisms to do this through the Staff-Student Liaison Committee that meets twice each semester. You can provide input to this committee through your MUCESS class representative (see page 61). Towards the end of each semester you will be provided with a teaching evaluation survey (known as the Student Experience Survey- SES, including a survey question on the quality of tutor/demonstrator). You will be asked to complete these online at the end of each semester. Our aim is to provide a high-quality program, with excellent teaching. We respond to the advice given in these surveys and you will be advised of changes made to the course as a result. You are also always welcome to meet with me personally, or with the Course Coordinator, Associate Professor Dalton Harvie, should you have an issue that needs immediate attention.

All members of the Department of Chemical Engineering wish you the best throughout your time with us. Please feel free to come and talk to me about issues that may be of concern to you. It is my hope that the Department remains a friendly, inclusive and engaging place in which you study. We are truly glad to have you over this very important part of your life and if you have a LinkedIn account please join our **Chem Eng LinkedIn Group** here.

Amanda Ellis
Professor and Head of Department
Department of Chemical Engineering

DEPARTMENT OF CHEMICAL ENGINEERING STAFF

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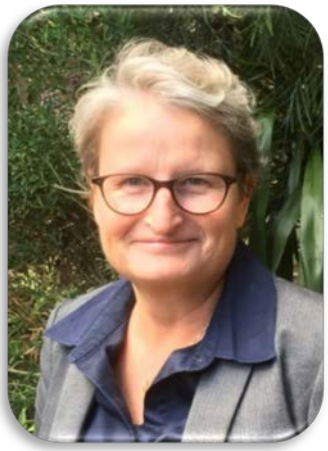
Professor Amanda Ellis



Professor Amanda Ellis graduated with a PhD from the University of Technology, Sydney in 2003. She has undertaken two Postdocs in the USA and a Postdoctoral Research Fellowship in New Zealand. She commenced at the University of Melbourne in 2017. Her research involves novel polymer coatings, functionalised carbon nanotubes and graphene, membrane technologies, microfluidics, genotyping and DNA nanotechnology. She focusses on industry's such as Future Batteries, Waste-to-Fuels and Energy harvesting biomed and nanotech devices.

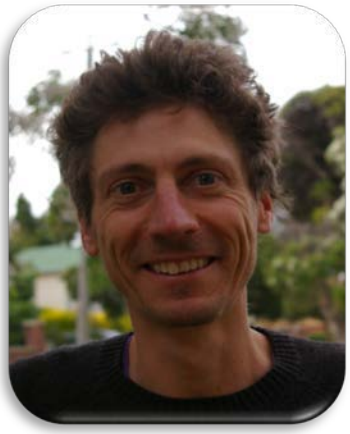
Professor Ray Dagastine

Ray obtained his Bachelor of Chemical Engineering with Distinction at the University of Delaware in the USA and his PhD in Chemical Engineering at Carnegie Mellon University in the USA before moving to Australia for a two-year research fellowship in Australia in 2002. He is now a Professor and Reader in the Department. Ray has previously worked in research in industrial adhesives and at a membrane separations start-up company. Ray's research focuses on the interactions between particles, drops and bubbles in product engineering for the formulation and stability of dispersions (such as paint), emulsions (such as milk, shampoo or even ice cream) and foams (well...in foams...and ice cream), as well as how drops and bubbles are important in chemical engineering processes. He teaches Product Design and Analysis, and Engineering Systems Design 1.

Professor Sandra Kentish

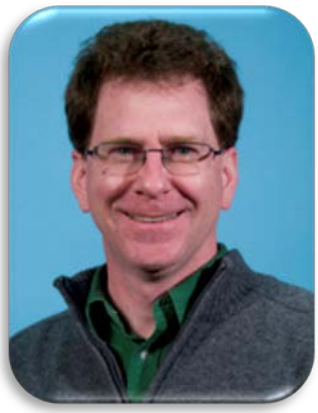
Sandra is a true University of Melbourne tragic, with a Bachelors, Masters and PhD all from this university. Before she became an academic, she worked at Qenos, Kodak Australia and Kimberly Clark Australia for a total of nine years. Her research interests lie in membrane technology for gas and liquid separations; and the use of ultrasonics in industrial processes. She was the Head of Department from October 2012, but in early 2017, moved to a broader role as the Head of the School of Chemical and Biomedical Engineering.

Associate Professor Dalton Harvie



Dalton Harvie completed a Mechanical Engineering degree at the University of Sydney in the early 90s, sponsored by an industry funded scholarship. During the degree Dalton worked at BHP (steel smelting and rolling), NSW Electricity Commission (coal fired power plants) and Alcan (rolling aluminium foil). After a few other jobs he enrolled in a PhD program, studying the extinguishment of bush fires. Initially he performed experiments on extinguishing wooden cribs and determining the heat transfer rate to impacting water sprays, however there were fundamental questions that just couldn't be answered via experimentation. Dalton turned to CFD (computational fluid dynamics) to simulate the processes and complement the experiments. Simulation remains at the core of his present research which involves using novel numerical methods to solve multiphysics flow problems, across a diverse spectrum of areas. A current focus is on developing a comprehensive model of blood flow and coagulation, in partnership with industry. Dalton became a lecturer here in the Department in 2007, and presently teaches Computational Fluid Dynamics and Safety and Sustainability Case Studies.

Professor George Franks



George Franks is a Professor in the Department of Chemical Engineering and has over two decades of research and experience in the ceramics and minerals processing fields. After completing his undergraduate degree in materials science and engineering at Massachusetts Institute of Technology (MIT) in 1985, he worked for seven years as a process development engineer, then returned to study, receiving his PhD in Materials in 1997 from the University of California. He came to Australia to undertake post- doctoral research at the University of Melbourne, leading research in surface chemistry effects in suspension rheology. His research interests are in ceramic powder processing and flocculation and flotation of minerals. He teaches Minerals Materials and Recycling, Materials Engineering Research Project and Ceramics and Brittle Materials.

Senior Lecturer Chris Honig

Chris Honig is a teaching focused academic. He obtained his undergraduate degree and PhD from the University of Melbourne in Chemical Engineering. He worked in a postdoctoral position at Virginia Tech in the USA, developing a new type of microscope, before returning to Melbourne in 2011. His research background is primarily in nano-scale microfluidics and atomic force microscopy. Chris teaches Chemical Process Analysis and Process Engineering.

Professor David Shallcross

David Shallcross completed his BE and PhD in the Department before going to work at the University of California and Stanford University. After a brief spell at CSIRO he joined the academic staff of the Department in January 1990. He served as the Head of Department from 2007 to 2012 and is currently the Associate Dean (Academic), Melbourne School of Engineering. For three years he was the Vice President of the Institution of Chemical Engineers and he remains on various committees of the IChemE. His research interests include ion exchange processes, biomass combustion and learning outcome assessments. David currently teaches the second-year undergraduate program.

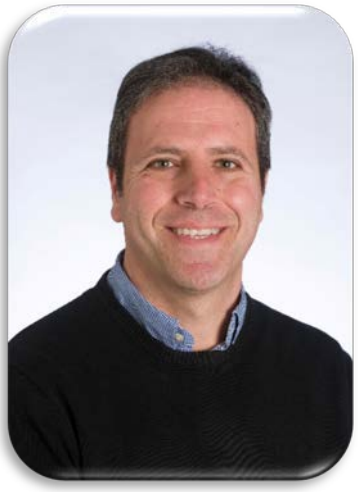
Professor Sally Gras

Sally Gras obtained her undergraduate degrees (with Honours) in both science (Biochemistry and Molecular Biology) and engineering (Chemical) from the University of Melbourne. She then completed a PhD in Protein Misfolding at Cambridge University as a Gates Scholar funded by the Bill and Melinda Gates Foundation. Following this Sally returned to the University of Melbourne where she currently teaches Pharmaceutical & Biochemical Production in the Department. Sally is also director of the ARC Dairy Innovation Hub.

Professor Greg Qiao

Professor Greg G. Qiao received his Ph.D. at the University of Queensland in 1996. He joined the University of Melbourne in 1996 and became a full Professor in 2009. He was an Australian Research Council's professorial Future Fellow (2012-2015) and the Chair of Polymer Division of the Royal Australia Chemical Institute (RACI) (2015-2016). He received the Applied Research Award in 2017, ExxonMobil Award in 2015, RACI's Polymer Division Citation in 2011 and Freehills Award in 2010. He has published more than 250 journal papers and is a co-inventor of more than 20 patents. His key research interests are in polymeric architectures, new activation methods for RAFT, peptide polymers, tissue scaffolds, and gas membranes.

Australian Laureate Professor Frank Caruso



Frank Caruso is a Professor and an ARC Australian Laureate Fellow at the University of Melbourne. He is also the Deputy Director of the ARC Centre of Excellence in Convergent Bio-Nano Science and Technology. He received his PhD degree in 1994 from the University of Melbourne, and from 1994-1997 was at the CSIRO Division of Chemicals and Polymers in Melbourne. He was an Alexander von Humboldt Research Fellow and Group Leader at the Max Planck Institute of Colloids and Interfaces (Berlin, Germany) from 1997 to 2002. From 2003 to 2012, he was an ARC Federation Fellow at the University of Melbourne. He has published over 400 peer-reviewed papers. He is one of Thomson Reuters' Highly Cited Researchers (top 20 in materials science) and was on Thomson Reuters' 2014 List of World's Most Influential Scientific Minds. He is an Editor of *Chemistry of Materials* and on the Editorial Advisory Board of 10 other scientific journals. He was elected a Fellow of the Australian Academy of Science in 2009.

Australian Laureate Professor Dan Li

Dan Li is a Professor in materials science and engineering at the University of Melbourne, Australia. He received his PhD degree in Materials Physics and Chemistry from the University of Electronic Science and Technology of China in 1999. After several years as a Research Fellow at Nanjing University of Science and Technology, the University of Washington, the University of California Los Angles and the University of Wollongong, he joined Monash University as an Associate Professor in 2008 and was promoted to full Professor in 2012. He was a Foundation Co-Director of Monash Centre for Atomically Thin Materials (2015-2017). He joined the Department of Chemical Engineering at the University of Melbourne in 2017. Professor Li received the ARC Queen Elizabeth II Fellowship in 2006, the Scopus Young Researcher of the Year Award (Engineering and Technology) in 2010, ARC Future Fellowship in 2011, Dean's Award for Excellence in Research in 2012 and a Visiting Changjiang Chaired Professorship from the Ministry of Education, China in 2016. He was named in the list of Thomson Reuters Highly Cited Researchers in the category of Materials Science in 2014-16.

Assoc Professor Greg Martin

Greg Martin completed his undergraduate degree at Queen's University in Canada, and masters and PhD degrees from the University of Melbourne. In between the studies he spent several years working as an engineer in the oil fields of Kansas and Sumatra and as a research scientist for a biotech company in Canada commercialising lignocellulosic ethanol production. His research interests lie in bioprocess engineering with a particular focus on microalgal biotechnology and dairy processing.

Assoc Professor Kathryn Mumford

Kathryn Mumford obtained her undergraduate [BEng (Chem), BCom] and postgraduate (PhD) from the University of Melbourne. Since graduation, Kathryn has undertaken various industrial roles including contaminated site management, and carbon capture and storage technologies. She joined the Department in 2012 and is now an Associate Professor. She currently teaches Chemical Engineering Management and Heat and Mass Transport Processes.

Senior Lecturer Stefano Freguia

Stefano Freguia is a Senior Lecturer at the University of Melbourne. He is also an Honorary Associate Professor at the University of Queensland. He received his PhD in 2008 from the University of Queensland, and later received a fellowship from the Japan Society for the Promotion of Science (JSPS) to undertake his post-doctoral studies at Kyoto University (2008-10). From 2010 to 2019 he was an academic at the Advanced Water Management Centre at the University of Queensland, where he led a research team in the field of electrochemistry for water and wastewater applications. He was an ARC DECRA fellow (2013-16). Stefano's research focuses on the electrochemical interactions between bacteria and their environment, and how these interactions can be used to develop biosensors and other environmental technologies. In applied research, his aim is to transform the water industry through wastewater source separation and the introduction of new electrochemical technology, to deliver resilience and flexibility to urban water and wastewater services and infrastructure.

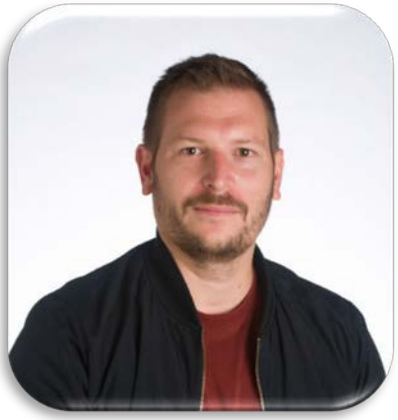
Senior Lecturer Gang Kevin Li

Gang Kevin Li obtained his undergraduate degree in Tianjin University in 2003 and PhD from Monash University in Chemical Engineering in 2010. He worked in a postdoctoral position at the University of Melbourne and later as an ARC DECRA Fellow at the University of Western Australia, developing gas separation technologies. He returned to Melbourne in 2017 as a senior lecturer. His research area is natural gas purification, carbon capture, waste utilisation, coal mine gas recovery, adsorption (zeolites, C1 catalysis, process design, microporous materials).

Senior Lecturer Colin Scholes

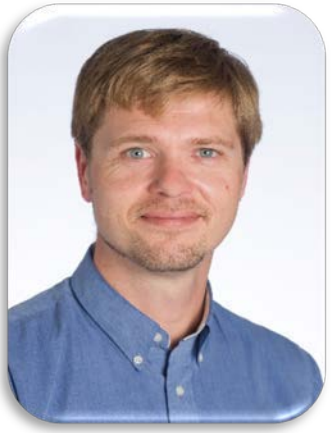
Colin Scholes joined the Department as a Senior Lecture in 2015, after graduating from the University of Melbourne, School of Chemistry. Colin is focused on developing membrane and separation technologies to assist the global transition to a sustainable and clean energy future. His research covers all aspects of membrane technology, from developing novel materials that have a selectivity affinity for specific gases, fabricating membrane and testing these modules, separation theory development as well as industrial pilot plant trials for commercialisation purposes. Colin works closely with Australian and international energy companies to achieve his research goals. Colin is also actively involved in education and outreaching programs with Indigenous Australians and Pacific Islanders, utilising engineering based solutions to their self-identified programs. Colin coordinates the Chemical and Biochemical Design Projects, as well as the elective subject Future Fuels and Petroleum Engineering.

Senior Lecturer Gabriel da Silva



Gabriel De Silva completed his undergraduate degree in 2001 and completed his PhD in 2006 at the University of New Castle. He worked in a postdoctoral position at New Jersey Institute of Technology and later as a lecturer at the University of Melbourne in the energy and the environment area, using computational chemistry techniques and reaction rate theory to model complex reaction networks relevant to combustion and atmospheric chemistry, as well as environmentally important organic reaction mechanisms. He became a Future Fellow in 2017.

Senior Lecturer Anthony Stickland



Anthony Stickland obtained undergraduate (BSci, BE) and PhD degrees at the University of Melbourne. After completing his PhD in 2005, he worked for 4 years with ICI (and later AkzoNobel after merging) at their corporate research centre in Wilton, UK, and later their coil coating research and development centre in Sunshine, Victoria. In mid-2009, he returned to the Department as a Research Fellow. He has had a permanent position as Senior Lecturer since 2012 and currently lectures Advanced Thermodynamics and Reactor Engineering and Particle Mechanics and Processing. Anthony's research interests are in suspension rheology and solid-liquid separation, with current projects covering the fundamentals of suspension shear rheology through to designing a new dewatering device that combines shear with dewatering. The industrial applications include wastewater treatment sludges, water treatment sludges, minerals tailings, algal biomass and paper recycling process streams, among others.

Lecturer Joe Berry

Joe Berry completed undergraduate degrees in Science and Engineering in 2006 and his PhD in 2010 at Monash University. He worked in a postdoctoral position the Department of Chemical Engineering at the University of Melbourne, followed by a position at CSIRO modelling fluid flow and stem-cell growth in bioreactors. Currently Joe is a Lecturer in the Department of Chemical Engineering at the University of Melbourne. His research focusses on the development and application of numerical models to solve complex, multi-disciplinary problems in order to yield quantitative understanding directly relevant to industry. He works on a wide range of problems including the behaviour of interacting bubbles and drops (small and large!), biological flows such as blood flowing through vessels, and microscale measurements of capsule and particle strength. Joe teaches Computational Fluid Dynamics and Heat & Mass Transport Processes.

Lecturer Eirini Goudeli

Eirini Goudeli is a lecturer within the Department of Chemical Engineering at the University of Melbourne, Australia. She has a Diploma from University of Patras, Greece and PhD from ETH Zurich, Switzerland. Her research is focusing on synthesis of nanoparticles by gas-phase methods and multiscale modeling of particle formation and growth by interfacing molecular dynamics simulations, mesoscale models and population balance equations. Gas-phase methods, such as flame spray pyrolysis, are used routinely for commercial synthesis of nanostructured particles (e.g., fumed silica, pigmentary titania, carbon black, Ni), as well as for advanced materials e.g. photocatalysts, nanofluids and biomaterials. This systematic approach to study particle formation can offer significant insight into fundamental physical principles and mechanisms that may be exploited by chemical industry and nanotechnology. Eirini teaches in Transport Processes.

Teaching Coordinator and Subject Developer Catherine Sutton

Catherine Sutton obtained undergraduate degrees in Science and Engineering (with Honours) from the University of Melbourne, including time spent at Imperial College London. She then completed a PhD at the University of Melbourne. Her research interests have included quantum mechanical modelling of aqueous and atmospheric carboxylic acids, as well as thermodynamic modelling of solvent extraction systems. Catherine has undertaken various tutoring and lecturing roles in the Department of Chemical Engineering and has had several visits to Japan as a Special Visiting Associate Professor at the Tokyo Institute of Technology. Catherine teaches Food Engineering.

SAFETY

The Melbourne School of Engineering is committed to providing and maintaining a workplace that is safe and without risk to the health of our staff, students and visitors to our facilities.

The management of the School will take all measures necessary to ensure adherence to safe work practices and conditions, which are of priority in the School's planning, procedures and work instructions.

Due to the Coronavirus (COVID-19), the University has protocols in place regarding access to Campus and welfare of staff and students which is in line with the Victorian Department of Health and Human Services (DHHS), the Australian Government, the Victorian Government and health experts. Current information on the University's COVID-19 response can be found at https://unimelb.edu.au/coronavirus

The creation and maintenance of a safe and healthy working environment is an integral part of our operation and we actively pursue the goals of this policy. The University follows the National Assessment Tool (NAT) program to ensure that these goals are achieved, and the Melbourne School of Engineering is committed to maintaining its accreditation under this program.

It is expected that, through consultation and co-operation, all staff, students, contractors and visitors will observe Occupational Health and Safety (OHS) rules and safe working practices, and make every effort to reduce the risk of injury to themselves, their fellow workers and others.

The management of the Melbourne School of Engineering is committed to the provision of appropriate resources and training in order to assist all staff and students to fulfil their responsibilities and maintain a safe working environment.

Emergency Contact Information

The University of Melbourne Security

Emergency phone number: +61 3 8344 6666 (internal extension 46666)
Enquiry phone number: +61 3 8344 4674

Note: University of Melbourne security guards are trained first aiders and can be called upon to supply first aid in an after-hours emergency situation.

FEIT Occupational Health and Safety Unit

Emergency phone number: +61 3 8344 2400 (internal extension 42400) and business hours only

Ambulance, Police or Fire Brigade

From a university phone: 0-000
From a mobile phone: 000 or 112

Tell the Emergency Services to enter the University via Gate 10 Grattan Street.

LABORATORIES

Due to Coronavirus (COVID-19), on-campus laboratory classes will only be held where it is deemed safe to do so by the University, in line with the Victorian Department of Health and Human Services (DHHS), the Australian Government, the Victorian Government and health experts. Your subject coordinator will provide further details about face-to-face laboratory classes as well as online activities. The details regarding online laboratory inductions will be provided as they become available.

Laboratories allow you to test and apply the knowledge that you have learnt in your Chemical Engineering subjects. In this Department, laboratories are integrated within each subject and overseen by the subject coordinators.

If you are returning to campus for face-to-face laboratory classes, you must **register for each of the laboratories conducted within each of your subjects using the University's timetabling system**. Instructions for checking the dates for your laboratory sessions are given below.

Each calendar year, you need to **complete the online Chemical Engineering OHS Induction before you are allowed to enter the laboratory**. This training is not specific to any particular subject, and hence only needs to be done once each year. Once you have completed the online OHS Induction you will receive a completion certificate which you must present to your laboratory demonstrator before starting each laboratory practical. Instructions on how to do this training and obtain the certificate are included below.

For each laboratory practical you complete you must work through the relevant **Laboratory Practical Module** on the Canvas LMS. These Modules will contain the Laboratory Manual and supporting information such as SDSs (Safety Data Sheets).

You must also print out **the Chemical Engineering Laboratory Safety Sheet** and **bring this (as a hard copy) to the session** to give to your demonstrator (see the example Laboratory Safety Sheet on page 17 and 18). The Laboratory Safety Sheet contains a "Preparation" section that must be completed prior to entering the laboratory, and a "Take-5! Risk Assessment" that you will complete in the laboratory, prior to starting your experiment. This document will remain with your laboratory demonstrator as proof that you have done the necessary preparation and risk assessment.

While in the laboratory you are required to **wear personal protection equipment (PPE) at all times**. The PPE required for each laboratory will be specified in your laboratory notes, but for most laboratories it is safety glasses and laboratory coat.

You will **not be able to participate in a laboratory session** if you:

1. Haven't completed the OHS training.
2. Are not able to show your OHS training certificate at the lab.
3. Haven't completed the "Preparation" section of Chemical Engineering Laboratory Safety Sheet.
4. Do not have the required PPE.
5. Are more than 10 minutes late to the session.

Scheduling a laboratory requires equipment to be set up and a demonstrator ready to guide you through the process. If you miss a laboratory session, then this preparation is wasted. Hence, if you miss a laboratory session or are not able to participate in your laboratory session including for the reasons listed above (and without a substantive reason) **you will not be awarded any marks** for the relevant laboratory component of your subject. However, subject to the availability of places in the laboratory and the discretion of your Subject Coordinator, you may be able to attend a make-up session for your laboratory. If this occurs, then you will be penalised 50% of the marks for the relevant assessment.

CHEMICAL ENGINEERING LABORATORY SAFETY SHEET

PREPARATION

(to be completed ***before*** arriving at the lab)

If the answer to any of the following questions is no, you will not be allowed to perform your practical laboratory and will not receive the allocated marks.

1. Have I brought my Chemical Engineering OHS Induction Certificate? Y☐ N☐
   Note: The OHS Induction must be completed once per calendar year.
2. Have I read the notes for this practical laboratory session? Y☐ N☐
3. Have I completed the LMS pre-laboratory quiz? Y☐ N☐
4. Have I brought the required Personal Protection Equipment (PPE) to this session?
   - Safety Glasses Y☐ N☐
   - Lab Coat Y☐ N☐
   - Closed shoes Y☐ N☐
   - Legs Covered Y☐ N☐

TAKE-5! RISK ASSESSMENT

(to be performed ***in the lab, before commencing work***)

1. **Think** and talk through the activities and tasks. Stop and ask questions if you're not sure.
   - Do I understand what I will be doing? Y☐ N☐
   - Will my activities affect others? Y☐ N☐
     (If yes, communicate with those who will be affected.)
   - Are there other activities occurring that can affect me? Y☐ N☐

2. **Identify** potential hazards. Look close, look wide, look above, look behind. What could reasonably happen? What could injure me or others? What could cause damage?

If you answer 'Y' to any of these questions, list the Hazard in the table on the following page.

- Can any equipment I'm using cause cuts? Y☐ N☐
- Is there any potential for slipping or tripping? Y☐ N☐
- Are there any chemicals or substances that could cause harm if…
  - …contacted with the skin or eyes? Y☐ N☐
  - …ingested? Y☐ N☐
  - …inhaled? Y☐ N☐
  - …disposed of incorrectly? Y☐ N☐
- Are there any hot surfaces, liquids or gases that could cause burns? Y☐ N☐

3 Plan how to reduce the risk. List the hazards you have identified. How will you control or remove each hazard?

Hierarchy of control

1. *Elimination* - can you practically proceed without the material or equipment presenting the hazard?
2. *Substitution* - can the material or equipment presenting the hazard practically be replaced with a less hazardous alternative?
3. *Engineering controls* - can anything practically be built or put in place to reduce the risk?
4. *Administrative controls* - can any rules or training be implemented to reduce the risk?
5. *Personal Protective Equipment* - can PPE be worn to reduce the risk?

Hazard	Controls	Is the residual risk acceptable?
		Y☐ N☐
		Y☐ N☐
		Y☐ N☐
		Y☐ N☐
		Y☐ N☐
		Y☐ N☐
		Y☐ N☐
		Y☐ N☐

4. Control the risk

Are all the controls in place? Y☐ N☐

Has the risk been minimised to an acceptable level? Y☐ N☐

Have I verified my risk assessment with the demonstrator? Y☐ N☐

5. Proceed with the practical session in a safe manner in accordance with your risk control plan

Student Name		Student No.	
Demonstrator Name		Demonstrator Signature	

This form is to be submitted attached to your laboratory report.

YOUR STUDENT SERVICES

Health and welfare

Take advantage of the range of free or discounted health services available at the University.

- **Health Service:** Bulk billed doctor appointments, vaccinations, pathology and health advice
- **Counselling and Psychological Services:** Counsellors and mental health resources
- **Melbourne Dental Clinic:** Discounted dental care
- **Eyecare:** Eye assessments, discounted glasses and contact lenses
- **Melbourne Audiology and Speech Pathology Clinic:** Hearing and aural care
- **Melbourne University Sport:** Gym facilities, pool, group fitness classes and more
- **Security on campus:** Patrols, escorts, emergency phones and lost property
- **Safer Community Program:** Safe learning, working and living at the University
- **Student Equity and Disability Services:** For students who need ongoing support.
- **Sexual Health:** Sexuality, consent, decision-making, contraception and health matters
- **Chaplaincy:** Spiritual and religious support for different faith groups
- **Meditation and mindfulness:** Free resources, workshops and yoga classes

Careers and employability

Looking for a job, preparing your career, or thinking about going on exchange? There are a number of ways to broaden your horizons during your studies.

- **Careers services:** Central resource for career advice
- **Careers Online:** Job listings, career workshops, events and news (student login required)
- **Internships:** Practice and develop professional skills under supervision in the workplace
- **Students@Work:** On-campus employment opportunities for current students
- **Volunteering:** Make a difference while gaining experience and building your network
- **Leaders in Communities Award (LiCA):** Official recognition for your extra-curricular involvement
- **Study Overseas:** Make yourself more employable with an overseas study experience

Learning and development

Having the tools to navigate the University and study efficiently is the key to your success as a student. When you're equipped with the basics, you'll be able to achieve your goals and get the most out of your experience.

- **Student Connect:** See an advisor for help with your transition to University and beyond
- **Academic skills:** Study and writing skills workshops, resources and appointments
- **University Library:** Digital collections, journals, books, study spaces, and more

Student administration and IT

Get help with the essentials so you can focus on your studies and campus life.
Administrative services: Student cards, fees, transcripts and graduation

- **Course planning and enrolment advice:** Speak with an adviser to choose the right subjects
- **Student IT:** Access Wi-Fi, computers, printers, software, and more

More information can be found at https://services.unimelb.edu.au/finder.

RESEARCH IN THE DEPARTMENT

The Department of Chemical Engineering has a large and diverse research program, which focuses on three key scientific themes: materials science, separations technologies and biomolecular engineering. These scientific themes target key socioeconomic fields which include medicine, mining, sustainable energy production, water conservation and re-use and food processing. Examples of current research activities include investigation into soil remediation in Antarctica, production of biofuel from algae, reduction of evaporation in water catchments, new materials for carbon capture and storage, targeted drug and vaccine delivery and cheese microstructure.

The Department is home to several major research centres and their nodes:

- Dairy Innovation Hub: Transformational Research to Underpin the Future of the Australian Dairy Manufacturing Industry
- Australian Research Council Centre of Excellence in Convergent Bio-nano Science and Technology.
- Cooperative Research Centre for Future Batteries (Supe Anode node)
- Australian Research Council Centre of Excellence for Enabling Eco-Efficient Beneficiation of Minerals

Interested in a PhD and Further Study by Research?

Who should apply?

Successful applicants for admission to research and scholarships with Engineering and IT will typically:

- Have secured strong support from their nominated supervisor
- Be placed in the top 5% of their graduating class
- Have evidence of research potential by having completed a research or research-focused industry project as part of their final year of their Bachelor or Master's degree.

Before you apply, find a supervisor

As a research student, you will work under the guidance of an academic supervisor. Your supervisor will provide advice and direction throughout your research project. Your PhD project is often part of a larger project run by your supervisor. It is your responsibility to identify a supervisor you would like to work with, prior to making an application. You must supply documented evidence that you have secured a supervisor, who has agreed to work with you on your research proposal.

Further details on the PhD application process and PhD Scholarships can be found at:
http://www.eng.unimelb.edu.au/study/research/

STUDY ABROAD, EXCHANGE AND OVERSEAS RESEARCH EXPERIENCE

Note that due to Coronavirus (COVID-19), at the time of publication we are unable to advise when international travel and exchange programs will become available again. Regardless, if you want to participate in an exchange program you should still plan for it in your degree structure.

By taking part in an exchange or study abroad program you could immerse yourself in a different social, cultural and intellectual milieu, with the chance to add an international perspective to your studies.

There are a number of ways you can do this. You may study overseas either as an exchange student or a study abroad student. With an approved study plan, either program can provide you with credit or fulfill academic requirements. There are also opportunities to complete your research project or your industry project overseas, in a six-week full time placement over the summer break.

There is also a wide variety of funding available to assist you with your plans for overseas study.

Why Study Overseas?

There are a number of reasons why you may wish to consider study abroad or exchange. Your reasons can be based on academic, personal, career aspirations or all of the above.

1. **Gain a global perspective on your studies**: study at an international university and gain a different perspective on your studies
2. **Challenge yourself**: gain real independence and build your self-confidence
3. **Make some international connections**: build links by meeting new people
4. **Improve your language skills**: immerse yourself in another culture and either refine your foreign language skills or learn a new language.

Student Exchange Information Sessions

A variety of information sessions for students are run regularly throughout the semester. General information sessions are a first step to hear more about the varied opportunities available around the world. They are intended to provide a general overview about how to undertake part of your studies overseas, and get you think about where in the world you would like to go.

Further Information

Chemical Engineering Exchange Coordinator

Dr Eirini Goudeli

E: eirini.goudeli@unimelb.edu.au

VACATION WORK

The Department strongly recommends that you obtain vacation work with an engineering employer. This work not only is of the greatest value at the end of your penultimate year, but also is highly valuable at any stage of your degree program.

Vacation work is advertised by major companies within Australia from March to July. These positions are highly competitive. Other companies may also offer vacation work informally and you will need to approach these companies yourself. If you are an overseas student, you may find it easier to gain an internship in your home country. Please contact the Academic Support Coordinator for advice on companies in your country whom you could approach.

Please ensure that your cover letter and Resume are checked by others before you use it. You will not get past the first round if these documents contain spelling mistakes or incorrect grammar.

Further advice on vacation work and careers can be obtained from:

https://careers.unimelb.edu.au/students/planning-my-career
https://www.youtube.com/watch?v=5tBO1NUL0EA

Upon completion of vacation work, or relevant work experience, please complete the form on the next page and get your company supervisor to comment and sign. This document can then be kept by both the Department and yourself as a permanent record of your experience.

Vacation Work Record

THE UNIVERSITY OF MELBOURNE

This form should be completed by students completing a vacation work placement, as a record of their achievements and the skills they have acquired.

Email your completed record to cbe-admin@unimelb.edu.au. A signed copy will be returned to you and your supervisor via the email address supplied.

University of Melbourne student details

Name:	
Student number:	
Email:	

Employer details

Company name:	
Supervisor name:	
Contact details for the Supervisor (email, telephone)	

Details of work undertaken

Period of employment:	**From:** **To:**
Provide a brief description of the work you have undertaken during your placement:	
Describe the skills you have acquired including: • Corporate ethics • Teamwork • Safety and risk assessment • Ability to negotiate • Process simulation	

Vacation Work Record

THE UNIVERSITY OF MELBOURNE

1. APPROVALS & ENDORSEMENTS

Comments/Feedback from Company Supervisor:			
Signature:		**Date:**	

Head of Department			
Signature:		**Date:**	

ENGINEERING PRACTICE HURDLE - EPH

The Engineering Practice Hurdle (EPH) is a hurdle for students doing the Master of Engineering degree (MC-ENG). You will need to complete the Engineering Practice Hurdle before you can graduate with a Master of Engineering.

The hurdle requires students to demonstrate their professional skills. This can be done through one of the following ways:

1. Skills towards employment program (STEP)
2. Leaders in Communities Award (LiCA)
3. ENGR90033: Internship subject (Unavailable to ME (Chemical) students in 2021)
4. CHEN90028: Chemical Engineering Internship
5. Not-For-Credit (NFC) Internship

A dedicated Engineering Practice Hurdle (EPH) Community will be available on LMS Canvas and contain the following:

1. The EPH Guide
2. Links to register for the introductory workshops
3. The link to indicate your expected completion method
4. Your completion status.

Students will be added to the Engineering Practice Hurdle (EPH) Community upon enrolling in the Master of Engineering course.

> You should indicate your **expected completion method** in the EPH LMS Community.
> Doing so will help make sure the correct communications are sent to you.

Skills Towards Employment Program (STEP)

The Skills Towards Employment Program (STEP) is an option to complete the Engineering Practice Hurdle (EPH).

STEP requires students to demonstrate their written and verbal communication skills. This is done by submitting a collection of digital artefacts demonstrating your skills and abilities through the STEP Community. Supporting this submission are a set of optional workshops and online lessons also accessible through the STEP Community.

> You should begin preparing for the STEP option from **your first semester of study**. This will allow you to identify suitable activities for submission, in particular the presentation.

Who should consider STEP?

This might be a good option if:

1. You want to focus on developing your communication skills through your academicstudies.
2. Completing an internship or volunteer work is not practical foryou.

How to complete the EPH using STEP

To enrol in the STEP community please use this link: Skills Towards Employment Program (STEP) - Communities.

STEP completion requirements

Students are required to demonstrate their written and verbal communication. Both skills require a preparation piece, reflection/improvement plan and a final major piece, this means you need 6 items before you can complete STEP:

Written Communications

- A preparation piece (a draft, plan or document similar in nature to your final piece)
- A reflection (improvement plan) on the feedback you received for the preparation piece and how you will apply this understanding to improving the final piece
- A major written piece.

Verbal Communications

- A recording of your practice (it needs to show you and your slides)
- A reflection (improvement plan) based on your viewing of the practice recording and the feedback received. The feedback received from at least 3 audience members needs to be included
- A recording of your final presentation. Include your slides if the screen is not clear.

These artefacts should not be specifically created for STEP and can come from a range of different sources. For specific details and requirements of these submissions, please refer to the STEP guide.

STEP can be completed at an accelerated pace if required. If you are nearing graduation and have had problems completing other methods, then you should contact the EPH support team via eph-info@unimelb.edu.au.

All queries regarding the completion of STEP should be directed to eph-info@unimelb.edu.au.

CHEN90028 Chemical Engineering Internship

CHEN90028 is a 25-point subject that could involve critical analysis of a topic, experimental research and/or development, theoretical modelling, process simulation and/or the solution of an industrial problem. In this subject, students can work as individuals or as a member of a team on a designated investigative project within a suitable industry partner.

CHEN90028 can be taken as a 25-point elective within your Masters program or it can replace CHEN90023 or BIEN90001 Research Project. Students should note that some projects commence during the July semester break (for Semester 2) or in December (for summer enrolment) to allow students to work fulltime at company premises.

Am I eligible?

All students enrolled in the Master of Engineering (Chemical) or (Biochemical) are eligible to apply. However, there are usually a limited number of projects available and selection is then primarily based on your Grade Point Average.

Eligibility and requirements

Enrolment in this subject requires approval of the subject coordinator.

Students must also have completed at least 125 points towards the 300-point Master of Engineering (Chemical), (Biochemical) and (Chemical with Business) degree. This is inclusive of any advanced standing (i.e. For example, 100 points of advanced standing would only require a student to have completed 25 points of credit before enrolling).

How do I apply?

The projects available will be advertised on the Chemical Engineering Student Community on the LMS approximately two weeks before the end of the previous semester. At this time, students will be invited to complete a survey indicating their preferred projects and any particular reasons why they should be considered for a project. The Subject Coordinator will then allocate students to projects and notify all successful applicants.

Note: Students will not be able to enrol into CHEN90028 until they have been allocated a project by the Subject Coordinator.

SPECIAL CONSIDERATION

What do I need to know about Special Consideration?

Special Consideration is available to students who have had their studies significantly impacted by short-term circumstances reasonably beyond their control such as acute illness.

To be eligible for Special Consideration students must meet one of the criteria below:

- A student has been prevented from preparing or presenting for all or part of a component of assessment such as assignments and examinations.
- A student has been, to a significant degree, adversely affected during the performance of a component of assessment.

Special consideration is generally only awarded for assessment components that are **worth more than 20% of a subject's assessment**. For assignments that have a smaller weighting, you should discuss the matter directly with the subject coordinator. In this circumstance, you will still be required to provide supporting documentation, and be expected to discuss the matter at the time the assessment is due (or before). Special consideration applications for assessment components worth less than 20% of a subject's assessment will be referred back to the subject coordinator after an administrative delay.

Time Limits

Time limits for Special Consideration applications are enforced:

- Students must submit an application for Special Consideration via the student portal ***my.unimelb.edu*.au** no later than 5.00 pm on the third working day after the submission/sitting date for the relevant assessment component.
- A completed Health Professional Report and/or other supporting documentation must be submitted within five (5) working days of submission of the online application.

Applying for Special consideration

Applications for Special Consideration are made via the student portal ***(my.unimelb.edu.au)*** and must be submitted no later than 5.00 pm on the third working day after the submission/sitting date for the relevant assessment component.

Administrative functions, such as applying for Special Consideration, can be found in the Student Admin Tab of the student portal ***(my.unimelb.edu.au).*** Click the "Go to Exams and Results" button under the "Exams and Results" portal on the Student Admin tab and select the "Apply for Special Consideration" link.

If you are navigating to Special Consideration from an "eStudent" screen, please select the "Study Plans" tab from the top menu and access "Special Consideration" from the left sidebar menu.

You must then submit your Health Professional Report (HPR) form or Statutory Declaration and any other supporting documentation within five (5) working days of your online application. The scanned copy of the completed HPR form must be submitted online via my.unimelb.edu.au. If this is not possible please submit the hardcopy HPR to the office listed on the front of your HPR form.

For more information please visit https://ask.unimelb.edu.au**.** Alternatively, speak to a staff member at Stop1 (http://students.unimelb.edu.au/stop1). **P:** 13 MELB (13 6352) **E**: Submit an enquiry (https://ask.unimelb.edu.au/app/ask)

Chemical Engineering Prerequisite Waiver Policy

I haven't met the prerequisites for a subject. Can I have these prerequisites waived?

Background: Prerequisite subjects are carefully chosen to ensure that students have the required competencies to complete the subjects that we teach. The pre-requisite mechanism also ensures that students complete the variety of learning that we believe is required to become a competent engineer. Accreditation of our degrees (e.g., via iChemE, EA, EURACE etc) relies upon this process being robust.

In some cases, you may wish to enrol in a subject without having completed one of the prerequisite subjects listed in the Handbook (see "ELIGIBILITY AND REQUIREMENTS" sections). This may be because you did not pass a previous subject, or (for example) there may be complications around your time on exchange. Under these circumstances you can apply for a prerequisite waiver (see policy below for details).

When considering applications for prerequisite waivers, we are guided by the following:

1. Will admitting the student to the subject disadvantage other students (for example in team-based work, in tutorials)?
2. Will admitting the student disadvantage the student themselves (for example they may not have the capacity to pass the subject, or, the student could perform significantly better with the required pre-requisites)?
3. Quality control of our degree. Will admitting this student reduce the overall experience in a subject, diminishing the standing and reputation of our degree (which may damage employment prospects for our other students or diminish future student enrolments)?

As a department we have distilled these questions into the following prerequisite waiver policy:

Policy: You can apply for a prerequisite waiver to the Subject Coordinator for the subject you are trying to enter, or to the overall Course Coordinator. Upon such a request the Subject Coordinator/Course Coordinator will:

1. Check your academic transcript. If you are applying to waive a prerequisite subject that you previously attempted but failed, the assessor will only consider the application further if your average performance (your WAM) is above 65% (an H3 or better).
2. If you have achieved good overall performance within your degree so far but failed a prerequisite subject due to some exceptional circumstances, the assessor will discuss your performance in that subject with the Subject Coordinator to determine whether you have sufficient knowledge to enrol in the requested subject.

Hence, if you have failed a previous subject you are unlikely to have this subject waived as a prerequisite to other subjects unless your performance across other subjects so far is good, and there is some specific reason why your performance in the failed subject was poor.

Note that financial burden, or time taken to complete your degree, are not relevant factors in determining whether a waiver can be granted. Your application is only dependent upon your academic performance to date and your ability to perform well in your enrolled subjects. Careful course planning can in some instances reduce the amount of time you need to complete your degree.

Also, please read the "ELIGIBILITY AND REQUIREMENTS" rules carefully in the Handbook – some subjects are actually "concurrent prerequisites", meaning that they can be taken at the same time as the subject you are trying to enrol in and do not need a prerequisite waiver application.

PLAGIARISM and COLLUSION

What is plagiarism?

Plagiarism is the act of representing as one's own original work the creative works of another, without appropriate acknowledgment of the author or source. (Creative works may include published and unpublished written documents, interpretations, computer software, designs, music, sounds, images, photographs, and ideas or ideological frameworks gained through working with another person or in a group. These works may be in print and/or electronic media.

What is collusion?

Collusion takes place when a student presents an assignment as his or her own, which in fact is the result of in whole or in part, unauthorised collaboration with another person or persons. Collusion involves the cooperation of two or more students in plagiarism or other forms of academic misconduct. Both the student presenting the assignment and the student(s) willingly supplying unauthorised material (colluders) are considered participants in this act of academic misconduct.

Self-plagiarism

You cannot receive academic credit twice, for a single piece of work. So you cannot submit your own work (done in a previous subject) for a new subject. The work for the new subject must be original. This includes when you are repeating a same subject that you have failed in an earlier semester.

Examples of plagiarism

The following are examples of plagiarism where appropriate acknowledgement or referencing of the author or source does not occur:

- Copying directly (or allowing to be copied) paragraphs, sentences, a single sentence or significant parts of a sentence. An end reference without quotation marks around the copied text may also constitute plagiarism
- Copying ideas, concepts, research results, statistical tables, computer programs, designs, images, sounds or text or any combination of these
- Paraphrasing of another's work closely, with minor changes but with the essential meaning, form and/or progression of ideas maintained
- Relying on a specific idea or interpretation that is not one's own without identifying whose idea or interpretation it is
- Cutting or pasting statements from multiple sources or piecing together work of others and representing them as original work
- Presenting as independent, work done in collaboration with other people (eg another student, a tutor)
- Submitting, as one's own, all or part of another student's original work
- Preparing an original and correctly referenced assignment and submitting part or all of the assignment twice for separate subjects or marks
- Cheating in an exam, either by copying from other students or by using unauthorised notes or aids.

Please refer to http://academicintegrity.unimelb.edu.au/ page for more information on plagiarism and collusion. If you have further questions, please consult your subject coordinator.

EXAMINATIONS

Examination Rules

There are several important rules to follow during a University examination – see Assessments and Results Policy (item 5.23 onwards).

Due to the impacts of COVID-19, exams may be delivered online via the Learning Management System. Please refer to the Exams Link for up to date information for the current Semester.

For specific content and exam format information for each of your subjects, please refer to your LMS subject site or ask your Subject Coordinator.

For in-person exams, note that you must bring an acceptable form of photo ID to all your examinations.

Calculator Policy

For online assessments taking place during COVID-19, there is generally no restriction on the model of calculator allowed. The following calculator policy information is only relevant to in-person examinations.

If you are permitted to use a calculator in an in-person examination, there are restrictions on the models allowed. Within the Melbourne School of Engineering the approved calculator for all subjects is the **Casio FX82 (any suffix)**. For a small number of subjects (mostly those requiring complex number calculations) the Casio FX100 (any suffix) will also be permitted, as indicated by the Subject Coordinator at the start of the teaching period. No other equivalent models of calculators will be permitted.

You are required to purchase your own calculator and are responsible for ensuring your calculator is in good working order with fresh batteries.

DEPARTMENT OF CHEMICAL ENGINEERING LIST OF SUBJECTS

Semester 1, 2021

Subject ID code	Subject Name	Subject Coordinator
BIEN90001	Biomolecular Engineering Research Project	Amanda Ellis
BIEN90003	Biomolecular Engineering Minor Thesis	Amanda Ellis
CHEN90038	Product Design and Analysis	Ray Dagastine and Amanda Ellis
CHEN20009	Transport Processes	Eirini Goudeli
CHEN30001	Reactor Engineering	Greg Qiao
CHEN90007	Chemical Engineering Thermodynamics	Gabriel Da Silva; Eirini Goudeli
CHEN90013	Process Engineering	Stefano Freguia; Chris Honig
CHEN90018	Particle Mechanics and Processing	Anthony Stickland
CHEN90019	Advanced Heat and Mass Transport Processes	Anthony Stickland; Gang Li
CHEN90020	Chemical Engineering Management	Kathryn Mumford
CHEN90023	Chemical Engineering Research Project	Amanda Ellis
CHEN90026	Chemical Engineering Minor Research Project	Amanda Ellis
CHEN90027	Future Fuels and Petroleum	Colin Scholes; Kathryn Mumford
CHEN90028	Chemical Engineering Internship	Sandra Kentish
CHEN90030	Chemical Engineering Minor Thesis	Amanda Ellis
CHEN90031	Bioprocess Engineering	Greg Martin
ENGR10004	Engineering 1: Technology and Society	Ray Dagastine
ENGR90021	Critical Communication for Engineers	David Shallcross
ENGR90024	Computational Fluid Dynamics	Dalton Harvie; Joe Berry
FOOD90029	Food Engineering	Catherine Sutton
MREN90001	Polymers and Composites	Greg Qiao
MREN90005	Materials Engineering Research Project	George Franks
UNIB10025	Sustainable and Equitable Energy Futures	Colin Scholes

NOTE: BIEN90001, BIEN90003, CHEN90023, CHEN90026, CHEN90028 and CHEN90030 may be taken over Summer/ January period.

You must seek prior approval from the Subject Coordinator.

You must also identify an academic supervisor willing to commit to summer supervision. There are a limited number of Industry Projects (CHEN90028) offered over the Summer/ January period.

Semester 2, 2021

Subject ID Code	Subject Name	Subject Coordinator
BIEN90001	Biomolecular Engineering Research Project	Amanda Ellis
BIEN90002	Biomolecular Engineering Design Project	Colin Scholes ; Stefano Freguia
BIEN90003	Biomolecular Engineering Minor Thesis	Amanda Ellis
CHEN90039	Pharmaceutical & Biochemical Production	Sally Gras
CHEN20010	Material and Energy Balances	David Shallcross
CHEN20011	Chemical Process Analysis	Chris Honig; Gabriel da Silva
CHEN30005	Heat and Mass Transport Processes	Joe Berry
CHEN30015	Safety and Sustainability Case Studies	Dalton Harvie/Chris Honig
CHEN90010	Minerals, Materials and Recycling	George Franks
CHEN90011	Bioenvironmental Engineering	Greg Martin
CHEN90012	Process Equipment Design	Gang (Kevin) Li
CHEN90022	Chemical Engineering Design Project	Colin Scholes; Stefano Freguia
CHEN90023	Chemical Engineering Research Project	Amanda Ellis
CHEN90026	Chemical Engineering Minor Research Project	Amanda Ellis
CHEN90028	Chemical Engineering Internship	Sandra Kentish
CHEN90030	Chemical Engineering Minor Thesis	Amanda Ellis
CHEN90032	Process Dynamics and Control	Gabriel Da Silva; Joe Berry
MREN90004	Ceramics and Brittle Materials	George Franks
MREN90005	Materials Engineering Research Project	George Franks

NOTE: BIEN90001, BIEN90003, CHEN90023, CHEN90026, CHEN90028 and CHEN90030 may be taken over Summer/ January period.

You must seek prior approval from the Subject Coordinator.

You must also identify an academic supervisor willing to commit to summer supervision.

There are a limited number of Industry Projects (CHEN90028) offered over the Summer/ January period.

COURSE PLANS

In this section example course plans are provided for each of the Master of Engineering specialisations that are run by the Department of Chemical Engineering. These course plans are provided as an indicative guide of what subjects you need to complete during your degree study and will vary according to your undergraduate degree and the time of commencement. The **University Handbook** **is the definitive guide** as to what subjects you need to complete within your course.

The course plans that follow include those applicable to:

1. A student who commences their ME in Semester 1, and has no credit awarded towards the course from previous study (300pt program)
2. A student who commences their ME in Semester 2, and has no credit awarded towards the course from previous study (300pt program)
3. A student who commences their ME in Semester 1, and has been awarded 100 points (one year) of credit towards their course from previous study (eg students who have completed a BSc (Chemical Systems) at the University of Melbourne – 200pt program)
4. A student who commences their ME in Semester 2, and has been awarded 100 points (one year) of credit towards their course from previous study (eg students who have completed a BSc (Chemical Systems) at the University of Melbourne – 200pt program).

Generally non-pathway students ie those who have not completed a BSc (Chemical Systems) at the University of Melbourne, will be awarded between 0 and 100 points of credit towards their course from previous study. Hence, most non-pathway students will need to modify the following course plan templates to suit their specific circumstances.

These course plans are examples only and provided as an indicative guide. They will vary according to a student's undergraduate degree and the time of commencement.

Some example BSc course plans are also included in this book for reference only.

Master of Engineering (Chemical)

The ME (Chemical) program is designed for students who wish to become chemical engineers. This program is accredited by Engineers Australia, the Institution of Chemical Engineers and EUR-ACE.

Under the ME (Chemical) you must complete 262.5 points of core subjects, and 37.5 points of elective subjects (three 12.5-point electives). Electives are listed after the example course plans. An example BSc (Chemical Systems) course plan that would precede the ME (Chemical) is included after the Chemical, Biochemical and with Business ME sections.

Note, students enrolled prior 2018 are required to take Reactions and Synthesis (CHEM20018) in place of one 12.5-point elective.

Suggested 3-Year Course Plan for Entry in Semester 1

Year 1	Sem 1	Critical Communication for Engineers (ENGR90021) OR Creating Innovative Engineering (ENGR90034)	Fluid Mechanics (ENGR30002)	Engineering Mathematics (MAST20029)	Transport Processes (CHEN20009)
	Sem 2	Chemical Process Analysis (CHEN20011)	Material and Energy Balances (CHEN20010)	Heat and Mass Transport (CHEN30005)	Safety and Sustainability Case Studies (CHEN30015)
Year 2	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Reactor Engineering (CHEN30001)	Bioprocess Engineering (CHEN90031)	Chemical Engineering Management (CHEN90020)
	Sem 2	Process Dynamics and Control (CHEN90032)	Process Equipment Design (CHEN90012)	Chemical Engineering Research Project (CHEN90023) OR Chemical Engineering Internship (CHEN90028)	
Year 3	Sem 1	Advanced Heat and Mass Transport (CHEN90019)	Particle Mechanics and Processing (CHEN90018)	Process Engineering (CHEN90013)	Chemical Engineering Elective
	Sem 2	Chemical Engineering Design Project (CHEN90022)		Chemical Engineering Elective	Chemical Engineering Elective

Suggested 3-Year Course Plan for Entry in Semester 2

Year 1	Sem 1				
	Sem 2	Critical Communication for Engineers (ENGR90021) OR Creating Innovative Engineering (ENGR90034)	Material and Energy Balances (CHEN20010)	Chemical Process Analysis (CHEN20011)	Engineering Mathematics (MAST20029)
Year 2	Sem 1	Fluid Mechanics (ENGR30002)	Reactor Engineering (CHEN30001)	Transport Processes (CHEN20009)	Chemical Engineering Management (CHEN90020)
	Sem 2	Heat and Mass Transport Processes (CHEN30005)	Safety and Sustainability Case Studies (CHEN30015)	Process Dynamics and Control (CHEN90032)	Process Equipment Design (CHEN90012)
Year 3	Sem 1	Advanced Heat and Mass Transport (CHEN90019)	Bioprocess Engineering (CHEN90031)	Chemical Engineering Thermodynamics (CHEN90007)	Process Engineering (CHEN90013)
	Sem 2	Chemical Engineering Design Project (CHEN90022)		Chemical Engineering Elective	Chemical Engineering Elective
Year 4	Sem 1	Chemical Engineering Research Project (CHEN90023) OR Chemical Engineering Internship (CHEN90028)		Particle Mechanics and Processing (CHEN90018)	Chemical Engineering Elective

Suggested 2-Year Course Plan for Entry in Semester 1 for BSc (Chemical Systems) Majors

Year 1	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Bioprocess Engineering (CHEN90031)	Critical Communication for Engineers (ENGR90021) OR Creating Innovative Engineering (ENGR90034)	Chemical Engineering Management (CHEN90020)
	Sem 2	Process Equipment Design (CHEN90012)	Process Dynamics and Control (CHEN90032)	Chemical Engineering Research Project (CHEN90023) OR Chemical Engineering Internship (CHEN90028)	
Year 2	Sem 1	Advanced Heat and Mass Transport (CHEN90019)	Process Engineering (CHEN90013)	Particle Mechanics and Processing (CHEN90018)	Chemical Engineering Elective
	Sem 2	Chemical Engineering Design Project (CHEN90022)		Chemical Engineering Elective	Chemical Engineering Elective

Suggested 2-Year Course Plan for Entry in Semester 2 for BSc (Chemical Systems) Majors

Year 1	Sem 1				
	Sem 2	Process Equipment Design (CHEN90012)	Process Dynamics and Control (CHEN90032)	Critical Communication for Engineers (ENGR90021) OR Creating Innovative Engineering (ENGR90034)	Chemical Engineering Elective
Year 2	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Process Engineering (CHEN90013)	Chemical Engineering Management (CHEN90020)	Bioprocess Engineering (CHEN90031)
	Sem 2	Chemical Engineering Design Project (CHEN90022)		Chemical Engineering Elective	Chemical Engineering Elective
Year 3	Sem 1	Particle Mechanics and Processing (CHEN90018)	Advanced Heat and Mass Transport (CHEN90019)	Chemical Engineering Research Project (CHEN90023) OR Chemical Engineering Internship (CHEN90028)	

Chemical Engineering Electives

The following subjects are available as electives within the ME (Chemical). You may take any of these subjects within the "Chemical Engineering Elective" sections of the following course plans:

Semester 1	Semester 2
FOOD90029 Food Engineering	CHEN90039 Pharmaceutical & Biochemical Production
CHEN90027 Future Fuels and Petroleum	BMEN90011 Tissue Engineering and Stem Cells
ENGR90024 Computational Fluid Dynamics	CHEN90010 Minerals, Material and Recycling
CHEN90038 Product Design and Analysis	CHEN90011 Bioenvironmental Engineering
MREN90001 Polymers and Composites	
ENGR90026 Engineering Entrepreneurship	

You may also complete a second project as a 25-point elective:

- CHEN90023 Chemical Engineering Research Project (for students who previously completed the Chemical Engineering Internship)
- CHEN90028 Chemical Engineering Internship (for students who previously completed the Chemical Engineering Research Project)
- CHEN90030 Chemical Engineering Minor Thesis (for students who have completed CHEN90023 with a score of at least 75 and who wish a career focused on research).

You may also seek permission from the Course Coordinator, Dalton Harvie (daltonh@unimelb.edu.au), to take one elective from another engineering or closely related field.

Master of Engineering (Biochemical)

The ME (Biochemical) program is designed for students who wish to become biochemical engineers. This program is accredited by Engineers Australia, the Institution of Chemical Engineers and EUR-ACE.

Students must choose 37.5 points of electives.

Suggested 3-Year Course Plan for Entry in Semester 1

Year 1	Sem 1	Critical Communication for Engineers (ENGR90021) OR Creating Innovative Engineering (ENGR90034)	Fluid Mechanics (ENGR30002)	Engineering Mathematics (MAST20029)	Transport Processes (CHEN20009)
	Sem 2	Chemical Process Analysis (CHEN20011)	Material and Energy Balances (CHEN20010)	Heat and Mass Transport Processes (CHEN30005)	Safety and Sustainability Case Studies (CHEN30015)
Year 2	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Reactor Engineering (CHEN30001)	Bioprocess Engineering (CHEN90031)	Chemical Engineering Management (CHEN90020)
	Sem 2	Process Equipment Design (CHEN90012)	Process Dynamics and Control (CHEN90032)	Biochemical Engineering Research Project (BIEN90001) OR Chemical Engineering Internship (CHEN90028)	
Year 3	Sem 1	Food Engineering (FOOD90029)	Particle Mechanics and Processing (CHEN90018)	Process Engineering (CHEN90013)	Biochemical Engineering Elective
	Sem 2	Biochemical Engineering Design Project (BIEN90002)		Pharmaceutical & Biochemical Production (CHEN90039)	Biochemical Engineering Elective

Suggested 3-Year Course Plan for Entry in Semester 2

Year 1	Sem 1				
	Sem 2	Critical Communication for Engineers (ENGR90021) OR Creating Innovative Engineering (ENGR90034)	Material and Energy Balances (CHEN20010)	Chemical Process Analysis (CHEN20011)	Engineering Mathematics (MAST20029)
Year 2	Sem 1	Fluid Mechanics (ENGR30002)	Reactor Engineering (CHEN30001)	Transport Processes (CHEN20009)	Chemical Engineering Management (CHEN90020)
	Sem 2	Heat and Mass Transport (CHEN30005)	Safety and Sustainability Case Studies (CHEN30015)	Process Dynamics and Control (CHEN90032)	Process Equipment Design (CHEN90012)
Year 3	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Bioprocess Engineering (CHEN90031)	Particle Mechanics and Processing (CHEN90018)	Process Engineering (CHEN90013)
	Sem 2	Biochemical Engineering Design Project (BIEN90002)		Pharmaceutical & Biochemical Production (CHEN90039)	Biochemical Engineering Elective
Year 4	Sem 1	Biochemical Engineering Research Project (BIEN90001) OR Chemical Engineering Internship (CHEN90028)		Food Engineering (FOOD90029)	Biochemical Engineering Elective

Suggested 2-Year Course Plan for Entry in Semester 1 for BSc (Chemical Systems) Majors

Year 1	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Chemical Engineering Management (CHEN90020)	Bioprocess Engineering (CHEN90031)	Creating Innovative Engineering (ENGR90034)
	Sem 2	Process Equipment Design (CHEN90012)	Process Dynamics and Control (CHEN90032)	Biochemical Engineering Research Project (BIEN90001) OR Chemical Engineering Internship (CHEN90028)	
Year 2	Sem 1	Particle Mechanics and Processing (CHEN90018)	Process Engineering (CHEN90013)	Food Engineering (FOOD90029)	Biochemical Engineering Elective
	Sem 2	Biochemical Engineering Design Project (BIEN90002)		Pharmaceutical & Biochemical Production (CHEN90039)	Biochemical Engineering Elective

Suggested 2-Year Course Plan for Entry in Semester 2 for BSc (Chemical Systems) Majors

Year 1	Sem 1				
	Sem 2	Process Dynamics and Control (CHEN90032)	Creating Innovative Engineering (ENGR90034)	Process Equipment Design (CHEN90012)	Biochemical Engineering Elective
Year 2	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Process Engineering (CHEN90013)	Chemical Engineering Management (CHEN90020)	Bioprocess Engineering (CHEN90031)
	Sem 2	Biochemical Engineering Design Project (BIEN90002)		Pharmaceutical & Biochemical Production (CHEN90039)	Biochemical Engineering Elective
Year 3	Sem 1	Food Engineering (FOOD90029)	Advanced Heat and Mass Transport Process (CHEN90019)	Biochemical Engineering Research Project (BIEN90001) OR Chemical Engineering Internship (CHEN90028)	

Biochemical Engineering Electives

12.5-point electives include:

Semester 1	Semester 2
CHEN90019 Advanced Heat and Mass Transport	BMEN90011 Tissue Engineering and Stem Cells
CHEN90027 Future Fuels and Petroleum	CHEN90010 Minerals, Material and Recycling
ENGR90024 Computational Fluid Dynamics	CHEN90011 Bioenvironmental Engineering
CHEN90038 Product Design and Analysis	
MREN90001 Polymers and Composites	
ENGR90026 Engineering Entrepreneurship	

You may also complete a second project as a 25-point elective:

- BIEN90009 Biochemical Engineering Research Project (for students who previously completed the Chemical Engineering Internship)
- CHEN90028 Chemical Engineering Internship (for students who previously completed the Chemical Engineering Research Project)
- CHEN90030 Minor Thesis (for students who have completed BIEN90009 with a score of at least 75 and who wish a career focused on research).

You may also seek permission from the Course Coordinator, Dalton Harvie (daltonh@unimelb.edu.au), to take one elective from another field within or closely related to engineering.

Master of Engineering (Chemical with Business)

The ME (Chemical with Business) program is designed for students who wish to combine a chemical engineering degree with the development of business skills. This program is accredited by Engineers Australia and EUR-ACE. This program is not accredited by the Institution of Chemical Engineers.

Students who complete this program do not have the following as core subjects:

- CHEN90018 Particle Mechanics and Processing
- CHEN90019 Advanced Heat and Mass Transport
- CHEN90020 Chemical Engineering Management

Students are able to choose 25 points of elective subjects, and are strongly encouraged to complete the following two as electives:

- CHEN90018 Particle Mechanics and Processing
- CHEN90019 Advanced Heat and Mass Transport

A Master of Engineering (Biochemical with Business) is not offered.

Suggested 3-Year Course Plan for Entry in Semester 1

Year 1	Sem 1	The World of Engineering Management (ENGM90014)	Fluid Mechanics (ENGR30002)	Engineering Mathematics (MAST20029)	Transport Processes (CHEN20009)
	Sem 2	Chemical Process Analysis (CHEN20011)	Material and Energy Balances (CHEN20010)	Heat and Mass Transport Processes (CHEN30005)	Safety and Sustainability Case Studies (CHEN30015)
Year 2	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Reactor Engineering (CHEN30001)	Bioprocess Engineering (CHEN90031)	Economic Analysis for Engineers (ENGM90011)
	Sem 2	Process Equipment Design (CHEN90012)	Process Dynamics and Control (CHEN90032)	Chemical Engineering Research Project (CHEN90023) OR Chemical Engineering Internship (CHEN90028)	
Year 3	Sem 1	Strategy Execution for Engineers (ENGM90013)	Process Engineering (CHEN90013)	Chemical Engineering Elective	Chemical Engineering Elective
	Sem 2	Chemical Engineering Design Project (CHEN90022)		Engineering Contracts and Procurement (ENGM90006)	Marketing Management for Engineers (ENGM90012)

Suggested 3-Year Course Plan for Entry in Semester 2

Year 1					
	Sem 2	The World of Engineering Management (ENGM90014)	Material and Energy Balances (CHEN20010)	Chemical Process Analysis (CHEN20011)	Engineering Mathematics (MAST20029)
Year 2	Sem 1	Fluid Mechanics (ENGR30002)	Reactor Engineering (CHEN30001)	Transport Processes (CHEN20009)	Economic Analysis for Engineers (ENGM90011)
	Sem 2	Heat and Mass Transport (CHEN30005)	Safety and Sustainability Case Studies (CHEN30015)	Process Dynamics and Control (CHEN90032)	Process Equipment Design (CHEN90012)
Year 3	Sem 1	Strategy Execution for Engineers (ENGM90013)	Bioprocess Engineering (CHEN90031)	Chemical Engineering Thermodynamics (CHEN90007)	Process Engineering (CHEN90013)
	Sem 2	Chemical Engineering Design Project (CHEN90022)		Engineering Contracts and Procurement (ENGM90006)	Marketing Management for Engineers (ENGM90012)
Year 4	Sem 1	Chemical Engineering Research Project (CHEN90023) OR Chemical Engineering Internship (CHEN90028)		Chemical Engineering Elective	Chemical Engineering Elective

Suggested 2-Year Course Plan for Entry in Semester 1 for BSc (Chemical Systems) Majors

Year 1	Sem 1	Economic Analysis for Engineers (ENGM90011)	Bioprocess Engineering (CHEN90031)	Chemical Engineering Thermodynamics (CHEN90007)	Chemical Engineering Elective
	Sem 2	Process Dynamics and Control (CHEN90032)	Process Equipment Design (CHEN90012)	The World of Engineering Management (ENGM90014)	Engineering Contracts and Procurement (ENGM90006)
Year 2	Sem 1	Process Engineering (CHEN90013)	Chemical Engineering Elective	Chemical Engineering Research Project (CHEN90023) OR Chemical Engineering Internship (CHEN90028)	
	Sem 2	Chemical Engineering Design Project (CHEN90022)		Strategy Execution for Engineers (ENGM90013)	Marketing Management for Engineers (ENGM90012)

Suggested 2-Year Course Plan for Entry in Semester 2 for BSc (Chemical Systems) Majors

Year 1					
	Sem 2	Process Dynamics and Control (CHEN90032)	The World of Engineering Management (ENGM90014)	Engineering Contracts and Procurement (ENGM90006)	Process Equipment Design (CHEN90012)
Year 2	Sem 1	Chemical Engineering Thermodynamics (CHEN90007)	Economic Analysis for Engineers (ENGM90011)	Process Engineering (CHEN90013)	Chemical Engineering Elective
	Sem 2	Chemical Engineering Design Project (CHEN90022)		Marketing Management for Engineers (ENGM90012)	Strategy Execution for Engineers (ENGM90013)
Year 3	Sem 1	Chemical Engineering Research Project (CHEN90023) Or Chemical Engineering Internship (CHEN90028)		Bioprocess Engineering (CHEN90031)	Chemical Engineering Elective

Master of Engineering (Chemical with Business) Electives

12.5-point electives include:

Semester 1	Semester 2
CHEN90018 Particle Mechanics and Processing	BMEN90011 Tissue Engineering and Stem Cells
CHEN90019 Advanced Heat and Mass Transport	CHEN90010 Minerals, Material and Recycling
CHEN90027 Future Fuels and Petroleum	CHEN90011 Bioenvironmental Engineering
CHEN90038 Product Design and Analysis	CHEN90039 Pharmaceutical & Biochemical Production
ENGR90024 Computational Fluid Dynamics	
FOOD90029 Food Engineering	
MREN90001 Polymers and Composites	
ENGR90026 Engineering Entrepreneurship	

Example BSc of Chemical Systems Course Plan leading to Master of Engineering (Chemical)

For the reference, the following is an example course plan for the BSc (Chemical Systems) degree offered at the University of Melbourne. A student graduating with this particular BSc will be able to complete the ME (Chemical) in two additional years of study.

BSc (Chemical Systems) degree leading to ME (Chemical) example course plan for entry in Semester 1

Year 1	Sem 1	Engineering Technology and Society (ENGR10004)	Calculus 2/Calculus 1	Chemistry 1 (CHEM10003)	Science Discovery Subject
	Sem 2	Engineering Modelling and Design (ENGR10006)	Linear Algebra/Calculus 2	Chemistry 2 (CHEM10004)	Breadth
Year 2	Sem 1	Transport Processes (CHEN20009)	Engineering Mathematics/Linear Algebra	Reactions and Synthesis (CHEM20018)	Breadth
	Sem 2	Chemical Process Analysis (CHEN20011)	Material and Energy Balances (CHEN20010)	Science Elective/Engineering Mathematics	Breadth/ Science Elective
Year 3	Sem 1	Reactor Engineering (CHEN30001)	Fluid Mechanics (ENGR30002)	Science Elective/Breadth	Breadth
	Sem 2	Heat and Mass Transport (CHEN30005)	Safety and sustainability case studies (CHEN30015)	Science Elective/Breadth	Breadth

BSc (Chemical Systems) degree leading to ME (Chemical) example course plan for entry in Semester 2

Year 1					
	Sem 2	Science Discovery Subject	Calculus 2/Calculus 1	Chemistry 1 (CHEM10003)	Engineering Modelling and Design (ENGR10006**)**
	Summer Sem	Chemistry (CHEM10004)		Linear Algebra	
Year 2	Sem 1	Transport Processes (CHEN20009)	Engineering Mathematics/Calculus	Reactions and Synthesis (CHEM20018)	Engineering Technology and Society (ENGR10004)
	Sem 2	Chemical Process Analysis (CHEN20011)	Material and Energy Balances (CHEN20010)	Science Elective/Engineering Mathematics	Breadth/Science Elective
	Summer Sem	Breadth		Breadth	
Year 3	Sem 1	Reactor Engineering (CHEN30001)	Fluid Mechanics (ENGR30002)	Science Elective/Breadth	Breadth
	Sem 2	Heat and Mass Transport (CHEN30005)	Safety and Sustainability Case Studies (CHEN30015)	Science Elective/Breadth	Breadth

ADVANCED STANDING

After you receive a course offer, you can apply to transfer any recognised prior learning credits by applying for Advanced Standing.

What is Advanced Standing

Advanced standing (sometimes known as credit or recognition of prior learning) is the acknowledgement of prior study granted towards your current degree, based on prior study or work experience. If advanced standing is awarded, the length of your degree may be reduced.

Types of Advanced Standing

There are two types of advanced standing you can be awarded – General Advanced Standing or Exempt Advanced Standing.

General Advanced Standing

General Advanced Standing grants credit in relation to an unspecified discipline area, subject or group of subjects. You'll need to complete fewer subjects to satisfy the requirements of the course, and it doesn't prevent you from selecting subjects of your choice.

If you qualify, you'll be granted study credits towards your course, reducing the number of subjects you'll need to study to satisfy course requirements. It will also appear on your transcript as "Advanced Standing".

Exempt Advanced Standing

Exempt Advanced Standing grants credit in relation to successfully completing a subject, subjects, or studies, equivalent to the subject being waived. It can be awarded:

- With credit: granting an exempt credit for successfully completing a subject or group of subjects equivalent to a subject in your course. "Exempt" will appear on your transcript and will reduce the number of course subjects you need to complete.
- Without credit: granting exemption for subjects you've completed already, such as a core subject. It doesn't reduce the number of subjects in your course load, but it grants you the opportunity to choose another subject in its place.

Credit may be granted if any of the previous studies are comparable in content, equivalent in standard and suitable to be included as part of the course. Faculties specify the maximum credit allowable and publish guidelines.

Calculate your credit

To help you plan your studies, you can use our credit tool to calculate how many credits you may be eligible to receive when you apply for Advanced Standing.

How to apply for Advanced Standing

If you have received an undergraduate course offer, you can start the application process following the steps outlined below (please note: the University does not assess advanced standing applications until an offer has been made).

If you are applying for a graduate course, your advanced standing application will be assessed at the same time as your course application.

1. Create a student account

   Once you have received a course offer, you can go to Get Started at Melbourne and create your student account.

   Ensure you have all your **documentation** ready when you apply. You will need to provide an official and complete syllabus or subject descriptions from your previous place of study, and a copy of your academic transcript.

2. Prepare your application

   Take some time to read through the Course Handbook and the Course Planning Resource page for your Bachelor degree and intended major to see how credit could potentially fit in to your study plan.

   Please note that there are limits to how much advanced standing you can be awarded and policies around how credit is granted. Refer to the Advanced Standing Policy for further details.

   You can find out what advanced standing you may be eligible to receive using our Credit Database.

3. Apply online

   Apply online here. You'll need your University of Melbourne student username and password.

   If you are applying for *exempt advanced standing* (credit for a subject that is deemed substantially equivalent to the one you have completed) you will need to note that subject name and number in your advanced standing application.

   If you cannot find a subject match, you may still be able to apply for *general advanced standing* provided it fits within the course rules. General advanced standing is credit granted in relation to an unspecified discipline area, subject, or group of subjects.

   In your application you will need to provide an official and complete syllabus or subject descriptions from your previous place of study, and a copy of your academic transcript. Give as much detail as possible so you can be assessed for the maximum amount of credit.

4. Submit your application before the closing date and wait for a response

   Timely applications for Semester 1, 2019 close at 11:59 pm (AEDT), Monday 11 February 2019. If you submit your application by the timely closing date, you should receive notification of an outcome by the start of semester. Ensure you check your new University of Melbourne student email account for any correspondence from our Admissions team.

Late applications

Late applications may be accepted up until the end of the first week of semester and we aim to provide an outcome by the end of the second week of semester.

Applications received after this will be actioned, but any credit received cannot be applied in the current semester.

5. Receiving the outcome

   An email will be sent to your new University of Melbourne email account with the outcome of your advanced standing application. If you need help planning your course with credit you can book an appointment with a Course Planning Advisor or submit an online enquiry.

6. Rescinding credit

   If you need to rescind or decline part or all of the credit you have received, you can submit an enquiry, and select "Enrolment/Course Advice" then "Credit (for prior study)". Enter the subject name/s and number/s that you wish to rescind.

Credit policies

Credit decisions are subject to the University's Advanced Standing and Accelerated Entry Policy.

The University is also a signatory to the Go8 Credit Transfer Agreement to help facilitate the transfer of credit earned by students if they move from one Group of Eight university to another.

You may require further assistance with your application **contact Stop 1**.

MELBOURNE UNIVERSITY CHEMICAL ENGINEERING STUDENT SOCIETY

The Melbourne University Chemical Engineering Students Society (MUCESS) is the faculty-based student-run body for chemical engineering students at the University of Melbourne. We are also affiliated with the University of Melbourne Student Union (UMSU).

Serving as a professional and social body for anyone studying or interested in chemical engineering, MUCESS runs frequent events including barbeques (free food and drinks!), trivia, pub nights and career-focused lectures. Highlights of the year include our renowned Industry Night which attracts prospective employers and invaluable networking opportunities, as well as our famous Annual Ball. MUCESS is a must-join for all students!

The first step is to follow our Facebook page - https://www.facebook.com/MUCESS where we advertise all our events. Come find us during Orientation Week or at any of our events to officially sign up! If you have any questions please feel free to get in touch with any of the committee members via email, on the Facebook page, or at chemeng.melbuni@gmail.com.

Committee Members (2021)

Position	**Name**
President	Nick Soon
Secretary	Rachel La
Treasurer	Jacquie Zhu
Education Officer	Nicholas McEniry
Welfare Officer	Simone Costello
Social Media Officer	Cate Evered
Media Officer	Elise Khoo
International Student Representative	Matthew Khowira
Second Year Representative	Helene Zhang
Second Year Representative	Rico Sulamet
Third Year Representative	Jien Lynn Cheng
Third Year Representative	Labib Zuhyar Hossain
Fourth Year Representative	Liam Vaughan
Fourth Year Representative	*TBA*
Fifth Year Representative	Kathleen Owen
Fifth Year Representative	Robert Naturani

HEALTH AND WELLBEING SERVICES ON CAMPUS

Juggling study, work and a social life can be challenging. Your physical and mental wellbeing is important during this time to stay happy and motivated. Make sure you are aware of the support services on offer at the University:

- Service Finder
- Counselling and Psychological Services
- Safer Community Program
- MU Sport
- Health Service

WE ARE ALWAYS READY AND WILLING TO HELP.

Not sure where to get information? Try the following:

Ask Unimelb: http://ask.unimelb.edu.au/
Stop 1: http://students.unimelb.edu.au/stop1

You are also welcome to come and visit us at:

Level 3
Building 165
Chemical Engineering
Melbourne School of Engineering