

Schedule 1: Faculty Schedule for Articulation Arrangements (2+2)

This Faculty Schedule is agreed in accordance with the terms of the Articulation Agreement between Monash University and Shanghai University of Medicine & Health Sciences dated 5 December 2024, by the following faculties:

Faculty of Engineering, Monash University, Australia
College of medical instruments, Shanghai University of Medicine & Health Sciences

Shanghai University of Medicine & Health Sciences Campus: Pudong Shanghai	MONASH UNIVERSITY Clayton campus, Australia
Degree title: Bachelor of Engineering in Biomedical Engineering	Course code: E3001 Degree title: Bachelor of Engineering (Honours) Specialisation code: BIOMDENG03 - Biomedical Engineering
Normal course duration: 4 years	Normal course duration: 4 years (192 credit points) Maximum Monash credit granted: 96 credit points

Students must successfully complete the following Shanghai University of Medicine & Health Sciences units for credit recognition	Type of recognition: Discipline-specific
104081012 Mechanical engineering experiment 104001111 Mechanical drawing	ENG1011 Engineering methods
104004011 Digital electronic technology 104080012 Medical electronics innovation and practice 104051212 Comprehensive experiment of digital electronic technology	ENG1013 Engineering smart systems
104110012 Fundamentals and applications of MATLAB 111004111 Advanced mathematics (part A)	ENG1014 Engineering numerical analysis
11101811 Linear algebra 111018111 Probability theory and mathematical statistics	ENG1005 Engineering mathematics
110008111 Preclinical Medicine Theories 110008111 Preclinical Medicine Theories	BMS1021 Cells, tissues and organisms PHY2042 Human physiology: Cardiovascular, respiratory and renal systems
106104011 University Physics 106104011 University Physics	PHS1002 Physics for Engineers ENG1090 Foundation mathematics
104002311 Circuit theory 111004111 Advanced mathematics (Part B)	ECE2111 Signals and systems ENG2005 Advanced engineering mathematics
104005311 C language programming A 104151021 Introduction to brain science	ECE2071 Computer organisation and programming PHY2011 Neuroscience of communication, sensory and control systems
104003011 Analog electronic technology	ECE2131 Electrical circuits
104065011 Introduction to biomedical engineering 104034111 Engineering mechanics	MTE3204 Biomaterials CHE2161 Mechanics of fluids
107103011 Medical Chemistry (Organic) 107104011 Medical Chemistry (Inorganic)	Level 3 elective

Continuous Professional Development (CPD)

Students must meet a Continuous Professional Development (CPD) time requirement as part of the course schedule. This course requires students to complete a total of 420 hours of continuous professional development, in order to graduate. This professional development may be in the form of relevant vacation employment or an equivalent combination of approved professional development and/or engineering employment, taken throughout the duration of the course. In addition to coursework units, professional development activities, seminars, online learning programs, leadership programs, volunteer experiences, industry visits and work experience in non-engineering and engineering related companies. Students are required to submit a series of reflections on their experience, with particular reference to development of each of the key Engineers Australia Stage 1 competencies. Partnership students will be provided with assistance by Faculty staff for guidance in the CPD requirements.

Monash University entry and admission requirements (Clause 9)	To be considered for admission: - Applicants must have successfully completed the first two years of the Shanghai University of Medicine & Health Sciences course and obtained the average percentage 70% or equivalent GPA. Monash University will use the entire academic record, including failed & repeated units, as part of its selection considerations. - Applicants must meet Monash University's <u>minimum English language entry requirements</u> for the year in which they intend to commence the course. Course information can be found here.
Expected first cohort to commence	July 2026

Advanced standing

E3001 Bachelor of Engineering (Honours)

Specialisation – Biomedical engineering – *Biomedical devices stream*

Year	Period	Units			
1	Sem 1 Feb	<u>ENG1012</u> Engineering design	<u>ENG1011</u> Engineering methods	<u>ENG1090</u> Foundation mathematics *	<u>BMS1021</u> Cells, tissues and organisms
	Sem 2 July	<u>ENG1013</u> Engineering smart systems	<u>ENG1005</u> Engineering mathematics <i>Required: ENG1090 *</i>	<u>ENG1014</u> Engineering numerical analysis <i>Corequisite: ENG1005</i>	Elective <u>PHS1002</u> Physics for engineers
2	Sem 1 Feb	<u>ENG2005</u> Advanced engineering mathematics	<u>ECE2071</u> Computer organisation and programming	<u>PHY2011</u> Neuroscience of communication, sensory and control systems	<u>MCB2011</u> Molecular biology and the cell
	Sem 2 July	<u>ECE2111</u> Signals and systems	<u>CHE2161</u> Mechanics of fluids	<u>PHY2042</u> Human physiology: Cardiovascular, respiratory and renal systems	<u>MCB2022</u> The dynamic cell
3	Sem 1 Feb	<u>ECE2131</u> Electrical circuits	<u>MEC3601</u> Mechanics for biomedical engineering	<u>MTE3204</u> Biomaterials 1	<u>DEV2011</u> Early human development from cells to tissues
	Sem 2 July	<u>ECE4179</u> Neural networks and deep learning	<u>ECE4087</u> Medical technology innovation	<u>MEC3602</u> Biomedical microsystems	<u>DEV2022</u> Human anatomy and development: Tissues and body systems

4	Sem 1 Feb	<u>ENG4701</u> Final year project A	<u>MEC4601</u> Implantable devices	<u>TRC3500</u> Sensors and artificial perception	<u>PHY3111</u> Sensory and cognitive neuroscience (Proposed course amendment – EEC Meeting 6/2024 - Level 3 or 4 biomedical engineering elective to replace PHY3111)	Clayton students enrol in <u>ENG0001</u> Continuous Professional Development (0 credit points)
	Sem 2 July	<u>ENG4702</u> Final year project B	<u>ENG4105</u> Biomedical engineering integrated design	Complete one <u>Professional Practice</u> domain unit	<u>ECE4081</u> Medical instrumentation	

Proposed progression map

E3001 Bachelor of Engineering (Honours)

Specialisation – Biomedical engineering – *Biomedical devices stream*

Year	Period	Units				
1	Sem 1 Feb	<u>ENG1012</u> Engineering design	<u>MEC3601</u> Mechanics for biomedical engineering	<u>TRC3500</u> Sensors and artificial perception	<u>MCB2011</u> Molecular biology and the cell	
	Sem 2 July	<u>ECE4179</u> Neural networks and deep learning	<u>ECE4087</u> Medical technology innovation	<u>MEC3602</u> Biomedical microsystems	<u>MCB2022</u> The dynamic cell	
2	Sem 1 Feb	<u>ENG4701</u> Final year project A	<u>MEC4601</u> Implantable devices	Complete one <u>Professional Practice</u> domain unit	<u>DEV2011</u> Early human development from cells to tissues	Clayton students enrol in <u>ENG0001</u> Continuous Professional Development (0 credit points)
	Sem 2 July	<u>ENG4702</u> Final year project B	<u>ENG4105</u> Biomedical engineering integrated design	<u>ECE4081</u> Medical instrumentation	<u>DEV2022</u> Human anatomy and development: Tissues and body systems	

Signed for and on behalf of
College of medical instruments, Shanghai University
of Medicine & Health Sciences
by its authorised representative:



Professor XIAOOU LI, Dean of the Committee of
Medical Devices College

Date:

Signed for and on behalf of
Faculty of Engineering, Monash University
by its authorised representative:



Professor Aijun Huang
Associate Dean International

Date:

Credit schedule endorsed by Head, Department of
Electrical and Computer Systems Engineering:
Name: Professor Scott Tyo
Date: 29/10/2024