

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

PROGRAM OPTION:

Full time

START DATE:

Semester 1 2018 to 2021

LOCATION:

Callaghan

This Program Plan is an enrolment guide to ensure you are on track to graduate. If at any time you wish to vary from this program plan seek advice from your Academic Program Advisor to ensure you remain on track.

 [PROGRAM HANDBOOK](#)

 [COURSE HANDBOOK](#)

Information for Your Enrolment in Semester 2 2021

Program Plan

For students who commenced study in Semester 1 2021

[Directed Courses](#)

[Transition Information](#)

Program Plan

For students who commenced study in Semester 1 2020

[Transition Information](#)

Program Plan

For students who commenced study in Semester 1 2019

[Transition Information](#)

Program Plan

For students who commenced study in Semester 1 2018

[Transition Information](#)

To be eligible to graduate make sure you have completed 320 units, as specified on the Plan for the year that you commenced study.

- Students must not exceed 120 units at 1000 level in this program.
- It is also a requirement that students complete a total of 12 weeks of **industrial experience**.
- The duration of this program is 4 years full-time (40 units per semester) or part-time equivalent.
- The maximum time to complete this program is 10 years.

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

Commenced Study in Semester 1 2021

To be eligible to graduate make sure you have completed 320 units:

- Core and Major Compulsory courses – 270 units
- Directed courses – 40 units.
- Electives – 10 units.

YEAR	SEMESTER	COURSE	DESCRIPTION	STATUS	NOTES
YEAR 1	SEMESTER 1	ENGG1003	Introduction to Procedural Programming	CORE	Changed from COMPULSORY to CORE in 2021
		ENGG1500	Introduction to Professional Engineering	CORE	
YEAR 1	SEMESTER 2	HUBS1109	Anatomy for Biomedical Science	DIRECTED	Changed from CORE to DIRECTED in 2021
		MATH1120	Mathematics for Engineering, Science and Tech 2	CORE	
YEAR 2	SEMESTER 1	HUBS1420	Terminology and Communication in Biomedicine	DIRECTED	Changed from CORE to DIRECTED in 2021. HUBS1420 required with HUBS1401
		MATH2310	Calculus of Science & Engineering	CORE	Changed from COMPULSORY to CORE in 2021
	SEMESTER 2	ENGG2300	Engineering Fluid Mechanics	COMPULSORY	
		ENGG2440	Modelling and Control	COMPULSORY	
YEAR 3	SEMESTER 1	ENGG3500	Managing Engineering Projects	CORE	
		MENG3500	Regulatory Requirements for Medical Engineering	CORE	See transition information
	SEMESTER 2	MENG3800	Medical Engineering Research	CORE	
		MECH3720	Thermodynamics	COMPULSORY	See transition information
YEAR 4	SEMESTER 1	MENG4800A	Medical Engineering Project A	CORE	
		MENG3100	Biomaterials & Fluid Dynamics	COMPULSORY	See transition information
	SEMESTER 2	ENGG4500	Engineering Complexity	CORE	
		MENG4800B	Medical Engineering Project B	CORE	This course must be taken following MENG4800A (20 units)

COMPULSORY PROFESSIONAL PRACTICE: INDUSTRIAL EXPERIENCE 12 WEEKS

[Back to Menu](#)

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

DIRECTED COURSES

For students who commenced study in Semester 1 2021

Complete 10 units from:

CIVL1100 Fundamentals of Engineering Mechanics

PHYS1210 Advanced Physics I

ELEC1310 Introduction to Electrical Engineering

EXSS1050 Fundamentals of Exercise and Sport Science Practice (Ourimbah Campus)

EXSS1070 Physical Activity and Exercise Across the Lifespan (Ourimbah Campus)

EXSS1080 Psychological, Nutritional and Injury Foundations for Exercise and Sport Science (Ourimbah Campus)

HUBS1106 Head and Neck Anatomy (Ourimbah Campus)

HUBS1107 Neuroscience and Head and Neck Anatomy

MECH2360 Dynamics of Machines

EXSS2080 Growth, Development and Ageing (Ourimbah Campus)

The following courses are no longer directed for this program:

MECH3110: Mechanical Engineering Design 2 (removed from program)

MECH3720: Thermodynamics (now a Core Course)

MECH3780: Fluid Mechanics 2 and CFD (removed from program)

[Back to Menu](#)

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

Transition Information - for students who commenced study in Semester 1 2021



Denotes courses you have already completed for your program. If you have not completed all of these courses you can still follow this program plan. If you need any assistance in planning your studies, you can contact programadvice@newcastle.edu.au for enrolment advice:

The following courses have been removed from this program. If you have completed or received credit for any of these courses please refer to the transition advice available in the Program Handbook:

CHEM1010	ELEC1310	MECH2360	MECH3780
CIVL1100	HUBS2206	MECH3400	More than 10 units of electives (including MATH1002)
PHYS1210	HUBS2103	MECH3110	

HUBS1105 – This course has been replaced by the option to take either **HUBS1109** or **HUBS1105** in 2021. If you have not previously completed or received credit for HUBS1105, you can choose to complete either course for your program.

HUBS1401 and HUBS1420 – These two courses have been replaced with the option to take either both **HUBS1401 and HUBS1420**, or both **HUB1403 and HUBS1404** in 2021. If you have already completed HUBS1401, you must complete **HUBS1420**. Further information on this arrangement is available in your Program Handbook and in the program transition information.

Transition Note: New courses have been added to this program in 2021. Please note that these are not direct replacements for removed courses. If your enrolment pattern does not match the sequence indicated on this Program Plan, please refer to the transition arrangements in the Program Handbook. If you need any advice in relation to these arrangements, please contact programadvice@newcastle.edu.au for assistance.

[Back to Menu](#)

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

To be eligible to graduate make sure you have completed 320 units:

- Core and Major Compulsory courses – 280 units
- Directed Courses – 30 units
- Electives – 10 units at 2000 level or higher

Commenced Study in Semester 1 2020

Year	Semester	Course	Level	Status	Notes
YEAR 1	SEMESTER 1	ENGG1003	Introduction to Procedural Programming	CORE	Changed from COMPULSORY to CORE in 2021
		ENGG1500	Introduction to Professional Engineering	CORE	
		HUBS1401	Human Bioscience	DIRECTED	Changed from CORE to DIRECTED in 2021
		MATH1110	Mathematics for Engineering, Science and Tech 1	CORE	Replaced option of MATH1110 OR MATH1210
	SEMESTER 2	CIVL1100	Fundamentals of Engineering Mechanics	COMPULSORY	See transition information
		ELEC1310	Introduction to Electrical Engineering	COMPULSORY	See transition information
		HUBS1420	Terminology and Communication in Biomedicine	DIRECTED	In 2021 changed from Sem 2 to Sem 1 Changed from CORE to DIRECTED in 2021
		MATH1120	Mathematics for Engineering, Science and Tech 2	CORE	Replaced option of MATH1120 OR MATH1220
YEAR 2	SEMESTER 1	CHEM1010	Introductory Chemistry I	CORE	See transition information
		HUBS1105	Musculoskeletal Anatomy	DIRECTED	Changed from CORE to DIRECTED in 2021
		MECH1110	Introduction to Mechanical Engineering Design	COMPULSORY	In 2021 changed from Sem 2 to Sem 1
		PHYS1210	Advanced Physics I	COMPULSORY	See transition information
	SEMESTER 2	ENGG2300	Engineering Fluid Mechanics	COMPULSORY	Replaced MECH2710
		ENGG2500	Sustainable Engineering Practice	CORE	In 2021 changed from Sem 1 to Sem 2
		MECH2430	Mechanics of Solids 1	COMPULSORY	See transition information
		MATH2310	Calculus of Science & Engineering	CORE	Changed from COMPULSORY to CORE in 2021
YEAR 3	SEMESTER 1	ENGG3500	Managing Engineering Projects	CORE	
		MENG3500	Regulatory Requirements for Medical Engineering	CORE	See transition information
		MECH2110	Mechanical Engineering Design 1	COMPULSORY	
		EXSS2020	Biomechanics (Ourimbah Campus)	COMPULSORY	See transition information
	SEMESTER 2	MENG3800	Medical Engineering Research	CORE	
		ENGG2440	Modelling and Control	COMPULSORY	
		MECH3720	Thermodynamics	COMPULSORY	See transition information
		EXSS3060	Advanced Biomechanics (Ourimbah Campus)	COMPULSORY	See transition information
YEAR 4	SEMESTER 1	MENG4800A	Medical Engineering Project A	CORE	
		MENG3100	Biomaterials & Fluid Dynamics	COMPULSORY	See transition information
		MENG4100	Implants & Assistive Technologies	COMPULSORY	See transition information
		MECH4410	Mechanics of Solids 2 & FEA	COMPULSORY	See transition information
	SEMESTER 2	ENGG4500	Engineering Complexity	CORE	
		ELECTIVE*	2000 level or higher	ELECTIVE	
		MENG4800B	Medical Engineering Project B <i>This course must be taken following MENG4800A (20 units)</i>	CORE	

COMPULSORY PROFESSIONAL PRACTICE: INDUSTRIAL EXPERIENCE 12 WEEKS

[Back to Menu](#)

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

Transition Information - for students who commenced study in Semester 1 2020



Denotes courses you have already completed for your program. If you have **not** completed one or more of the following courses, please refer to the transition arrangements in the Program Handbook. If you need any assistance in planning your studies, you can contact programadvice@newcastle.edu.au for enrolment advice:

CHEM1010

CIVL1100

PHYS1210

ELEC1310

The following courses have also been removed from this program. If you have completed or received credit for any of these courses please refer to the transition advice available in the Program Handbook:

MECH2360

MECH3780

HUBS2206

MECH3400

More than 10 units of electives (including MATH1002)

HUBS2103

MECH3110

HUBS1105 – This course has been replaced by the option to take either **HUBS1109** or **HUBS1105** in 2021. If you have not previously completed or received credit for HUBS1105, you can choose to complete either course for your program.

HUBS1401 and HUBS1420 – These two courses have been replaced with the option to take either both **HUBS1401 and HUBS1420**, or both **HUB1403 and HUBS1404** in 2021. If you have already completed HUBS1401, you must complete **HUBS1420**. Further information on this arrangement is available in your Program Handbook and in the program transition information.

Transition Note: New courses have been added to this program in 2021. Please note that these are not direct replacements for removed courses. If your enrolment pattern does not match the sequence indicated on this Program Plan, please refer to the transition arrangements in the Program Handbook. If you need you need any advice in relation to these arrangements, please contact programadvice@newcastle.edu.au for assistance.

From 2021 onwards the option to complete MATH1210 and MATH1220 was removed from this program. If you previously completed MATH1210 you do not need to take MATH1110. If you previously completed MATH1220 then you do not need to complete MATH1120.

[Back to Menu](#)

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

Commenced Study in Semester 1 2019

To be eligible to graduate make sure you have completed 320 units:

- Core and Major Compulsory courses – 280 units
- Directed Courses – 30 units
- Electives – 10 units at 2000 level or higher

Year	Semester	Course	Category	Status
YEAR 1	SEMESTER 1	ENGG1003 Introduction to Procedural Programming	CORE	✓
		ENGG1500 Introduction to Professional Engineering	CORE	✓
		HUBS1401 Human Bioscience	DIRECTED	✓
		MATH1110 Mathematics for Engineering, Science and Tech 1	CORE	✓
YEAR 2	SEMESTER 1	CHEM1010 Introductory Chemistry I	CORE	✓
		HUBS1105 Musculoskeletal Anatomy	DIRECTED	✓
		MECH1110 Introduction to Mechanical Engineering Design	COMPULSORY	✓
		PHYS1210 Advanced Physics I	COMPULSORY	✓
YEAR 3	SEMESTER 1	ENGG3500 Managing Engineering Projects	CORE	✓
		HUBS2206 Human Biochemistry and Cell Biology	CORE	✓
		MECH2110 Mechanical Engineering Design 1	COMPULSORY	✓
		MECH2360 Dynamics of Machines	COMPULSORY	✓
YEAR 4	SEMESTER 1	MENG4800A Medical Engineering Project A	CORE	
		MENG3100 Biomaterials & Fluid Dynamics	COMPULSORY	
		ENGG2100** (if you completed MECH2430 or an elective in the previous term) OR ELECTIVE CORE		
		EXSS2020* OR MECH4410* (if you completed MECH2430) CORE		
YEAR 2	SEMESTER 2	CIVL1100 Fundamentals of Engineering Mechanics	COMPULSORY	✓
		ELEC1310 Introduction to Electrical Engineering	COMPULSORY	✓
		HUBS1420 Terminology and Communication in Biomedicine	DIRECTED	✓
		MATH1120 Mathematics for Engineering, Science and Tech 2	CORE	✓
YEAR 2	SEMESTER 2	ENGG2300 Engineering Fluid Mechanics	COMPULSORY	✓
		ENGG2500 Sustainable Engineering Practice	CORE	✓
		HUBS2103 Neural and Visceral Anatomy	CORE	✓
		MATH2310 Calculus of Science & Engineering	CORE	✓
YEAR 2	SEMESTER 2	MENG3800 Medical Engineering Research	CORE	
		MENG3500 Regulatory Requirements for Medical Engineering	CORE	
		ENGG2440 Modelling and Control	COMPULSORY	
		ELECTIVE OR MECH2430*	CORE	
YEAR 2	SEMESTER 2	EXSS3060* (if you completed EXSS2020) OR MECH3720** CORE		
		ENGG4500 Engineering Complexity	CORE	
		MENG4800B Medical Engineering Project B This course must be taken following MENG4800A (20 units)	CORE	

COMPULSORY PROFESSIONAL PRACTICE: INDUSTRIAL EXPERIENCE 12 WEEKS

If you are enrolling in this pathway, you may;

*Complete either **EXSS2020 AND EXSS3060**, or **MECH2430 AND MECH4410**

Complete either **ENGG2100 or **MECH3720**

[Back to Menu](#)

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

Transition Information - for students who commenced study in Semester 1 2019



Denotes courses you have already completed for your program. If you have **not** completed one or more of the following courses, please refer to the transition arrangements in the Program Handbook. If you need any assistance in planning your studies, you can contact programadvice@newcastle.edu.au for enrolment advice:

CHEM1010
MECH2360

CIVL1100
HUBS2206

PHYS1210
HUBS2103

ELEC1310

The following courses have also been removed from this program. If you have completed or received credit for any of these courses please refer to the transition advice available in the Program Handbook:

MECH3780

MECH3110

MECH3400

More than 10 units of electives (including MATH1002)

HUBS1105 – This course has been replaced by the option to take either **HUBS1109** or **HUBS1105** in 2021. If you have not previously completed or received credit for HUBS1105, you can choose to complete either course for your program.

HUBS1401 and HUBS1420 – These two courses have been replaced with the option to take either both **HUBS1401 and HUBS1420**, or both **HUB1403 and HUBS1404** in 2021. If you have already completed HUBS1401, you must complete **HUBS1420**. Further information on this arrangement is available in your Program Handbook and in the program transition information.

Transition Note: New courses have been added to this program in 2021. Please note that these are not direct replacements for removed courses. If your enrolment pattern does not match the sequence indicated on this Program Plan, please refer to the transition arrangements in the Program Handbook. If you need you need any advice in relation to these arrangements, please contact programadvice@newcastle.edu.au for assistance.

From 2021 onwards the option to complete MATH1210 and MATH1220 was removed from this program. If you previously completed MATH1210 you do not need to take MATH1110. If you previously completed MATH1220 then you do not need to complete MATH1120.

[Back to Menu](#)

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

To be eligible to graduate make sure you have completed 320 units:

- Core and Major Compulsory courses – minimum of 250 units
- Directed Courses – 30 units
- Electives – maximum of 40 units at 2000 level or higher.

Commenced Study in Semester 1 2018

Year	Semester	Course	Category	Status
YEAR 1	SEMESTER 1	ENGG1003 Introduction to Procedural Programming	CORE	✓
		ENGG1500 Introduction to Professional Engineering	CORE	✓
		HUBS1401 Human Bioscience	DIRECTED	✓
		MATH1110 Mathematics for Engineering, Science and Tech 1	CORE	✓
YEAR 2	SEMESTER 2	CIVL1100 Fundamentals of Engineering Mechanics	COMPULSORY	✓
		ELEC1310 Introduction to Electrical Engineering	COMPULSORY	✓
		HUBS1420 Terminology and Communication in Biomedicine	DIRECTED	✓
		MATH1120 Mathematics for Engineering, Science and Tech 2	CORE	✓
YEAR 2	SEMESTER 1	CHEM1010 Introductory Chemistry I	CORE	✓
		HUBS1105 Musculoskeletal Anatomy	DIRECTED	✓
		MECH1110 Introduction to Mechanical Engineering Design	COMPULSORY	✓
		PHYS1210 Advanced Physics I	COMPULSORY	✓
YEAR 2	SEMESTER 2	ENGG2300 Engineering Fluid Mechanics	COMPULSORY	✓
		ENGG2500 Sustainable Engineering Practice	CORE	✓
		HUBS2103 Neural and Visceral Anatomy	CORE	✓
		MATH2310 Calculus of Science & Engineering	CORE	✓
YEAR 3	SEMESTER 1	ENGG3500 Managing Engineering Projects	CORE	✓
		HUBS2206 Human Biochemistry and Cell Biology	CORE	✓
		MECH2110 Mechanical Engineering Design 1	COMPULSORY	✓
		MECH2360 Dynamics of Machines	COMPULSORY	✓
YEAR 3	SEMESTER 2	ELECTIVE 2000 level or higher	ELECTIVE	✓
		ELECTIVE 2000 level or higher	ELECTIVE	✓
		ENGG2440 Modelling and Control	COMPULSORY	✓
		MENG3800 Medical Engineering Research	CORE	✓
YEAR 4	SEMESTER 1	ELECTIVE 2000 level or higher	ELECTIVE	✓
		ELECTIVE 2000 level or higher	ELECTIVE	✓
		MECH3400 Materials Science and Engineering 2	COMPULSORY	✓
		MENG4800A Medical Engineering Project A	CORE	✓
YEAR 4	SEMESTER 2	MENG3500** Regulatory Requirements for Medical Engineering	CORE	✓
		ENGG4500 Engineering Complexity	CORE	✓
		MENG4800B Medical Engineering Project B <i>This course must be taken following MENG4800A (20 units)</i>	CORE	✓

COMPULSORY PROFESSIONAL PRACTICE: INDUSTRIAL EXPERIENCE 12 WEEKS

[Back to Menu](#)

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Biomechanics Major

Transition Information - for students who commenced study in Semester 1 2018



Denotes courses you have already completed for your program. If you have **not** completed one or more of the following courses, please refer to the transition arrangements in the Program Handbook. If you need any assistance in planning your studies, you can contact programadvice@newcastle.edu.au for enrolment advice:

CHEM1010	CIVL1100	PHYS1210	ELEC1310	30 units of Electives
MECH2360	HUBS2206	HUBS2103	MECH3400	

The following directed courses have also changed, or have been removed from this program. If you have completed or received credit for any of these courses please refer to the transition advice available in the Program Handbook:

MECH3780	MECH3110	MECH3720
----------	----------	----------

HUBS1105 – This course has been replaced by the option to take either **HUBS1109** or **HUBS1105** in 2021. If you have not previously completed or received credit for HUBS1105, you can choose to complete either course for your program.

HUBS1401 and HUBS1420 – These two courses have been replaced with the option to take either both **HUBS1401 and HUBS1420**, or both **HUB1403 and HUBS1404** in 2021. If you have already completed HUBS1401, you must complete **HUBS1420**. Further information on this arrangement is available in your Program Handbook and in the program transition information.

Transition Note: New courses have been added to this program in 2021. Please note that these are not direct replacements for removed courses. If your enrolment pattern does not match the sequence indicated on this Program Plan, please refer to the transition arrangements in the Program Handbook. If you need you need any advice in relation to these arrangements, please contact programadvice@newcastle.edu.au for assistance.

****MENG3500** – If you are completing your studies this semester, you must complete MENG3500. You can do so without exceeding 320 units of study by using your remaining elective or directed course. If you have completed all of your program electives and a directed course, please contact programadvice@newcastle.edu.au for advice on your Semester 2 2021 enrolment.

From 2021 onwards the option to complete MATH1210 and MATH1220 was removed from this program. If you previously completed MATH1210 you do not need to take MATH1110. If you previously completed MATH1220 then you do not need to complete MATH1120.

[Back to Menu](#)