

PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Devices Major

PROGRAM OPTION:

Full Time

START DATE:

Semester 2 2018 to 2020

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 2 2020

Transition Information

Program Plan

For students who commenced study in Semester 2 2019

Transition Information

Program Plan

For students who commenced study in Semester 2 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 Devices Major

Commenced in Semester 2 2020

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

				YEAR 1 SEMESTER 2							
				ELEC1310 Introduction to Electrical Engineering  COMPULSORY	ELEC1710 Digital and Computer Electronics 1  COMPULSORY	HUBS1420 Terminology and Communication in Biomedicine  DIRECTED Offered in Semester 1 from 2021 Changed from CORE to DIRECTED in 2021	MATH1110 Mathematics for Engineering, Science and Technology 1  CORE Replaced option of MATH1110 OR MATH1210				
				YEAR 2 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	MATH1120 Mathematics for Engineering, Science and Technology 2  CORE Replaced option of MATH1120 OR MATH1220								
				YEAR 2 SEMESTER 2							
				HUBS1109 Anatomy for Biomedical Science DIRECTED Replaces CORE Course HUBS1105 in 2021	ENGG2500 Sustainable Engineering Practice CORE In 2021 changed from Sem 1 to Sem 2	MATH2310 Calculus of Science & Engineering CORE Changed from COMPULSORY to CORE in 2021	ELEC2430 Circuits and Signals COMPULSORY See Transition Arrangements				
				YEAR 3 SEMESTER 1							
PHYS1210 Advanced Physics I COMPULSORY	ELEC2320 Electrical and Electronic Circuits COMPULSORY	SENG2130 Systems Analysis and Design COMPULSORY See Transition Arrangements	HUBS2505 Human Pathophysiology CORE								
				YEAR 3 SEMESTER 2							
				ELEC3240 Analog Electronics COMPULSORY	MENG3200 Medical Instrumentation & Actuation COMPULSORY See Transition Arrangements	HUBS2507 Integrated Physiology for Biomedical Science COMPULSORY See Transition Arrangements	PHYS1220 Advanced Physics II COMPULSORY				
				YEAR 4 SEMESTER 1							
ELEC2720 Introduction to Embedded Computing COMPULSORY Replaced DIRECTED in 2021	ENGG3500 Managing Engineering Projects CORE	MENG3500 Medical Regulations CORE See Transition Arrangements	ELECTIVE								
				YEAR 4 SEMESTER 2							
				MENG3800 Medical Engineering Research CORE	MENG3451 Medical Imaging & Signal Processing COMPULSORY See Transition Arrangements	ENGG4500 Engineering Complexity CORE	MENG4800A Medical Engineering Project A CORE				
				YEAR 5 SEMESTER 1							
ELEC3730 Digital and Computer Electronics 2 COMPULSORY	MENG4210 Medical Electronics Design COMPULSORY Replaced DIRECTED in 2021 Replacing ELEC4210 in 2022	MENG4800B Medical Engineering Project B This course must be taken following MENG4800A (20 units) CORE									

COMPULSORY PROFESSIONAL PRACTICE: INDUSTRIAL EXPERIENCE 12 WEEKS

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PROGRAM PLAN

BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Devices Major

Transition Information - for students who commenced study in Semester 2 2020



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 **More than 10 units of electives (including MATH1002)**
HUBS2206 **HUBS2103**

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.

From Semester 1 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.

From Semester 1 2021 onwards 20 units of directed courses were removed from this program, replaced by ELEC2720 and ELEC4210. If you have already completed a directed course this will still be counted to your program. If you have not completed any directed courses you should complete ELEC2720 and ELEC4210 or MENG4210. Further information on removed directed courses can be found in the program transition information in the Program Handbook.

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BACHELOR OF MEDICAL ENGINEERING (HONOURS)

Medical Devices Major

Commenced in Semester 2 2019

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

- Core and Major Compulsory courses – minimum of 270 units
- Directed courses – 30 units.
- Electives – maximum of 20 units, at 2000 level or higher

Year	Semester	Course	Category	Status
YEAR 1	SEMESTER 1	ENGG1003 Introduction to Procedural Programming	CORE	✓
	SEMESTER 2	ELEC1310 Introduction to Electrical Engineering	COMPULSORY	✓
YEAR 2	SEMESTER 1	ENGG1500 Introduction to Professional Engineering	CORE	✓
	SEMESTER 2	ELEC1710 Digital and Computer Electronics 1	COMPULSORY	✓
YEAR 3	SEMESTER 1	HUBS1401 Human Bioscience	DIRECTED	✓
	SEMESTER 2	ELECTIVE* 2000 level or higher	ELECTIVE	✓
YEAR 4	SEMESTER 1	CHEM1010 Introductory Chemistry I	CORE	✓
	SEMESTER 2	MENG3800 Medical Engineering Research	CORE	✓
YEAR 5	SEMESTER 1	ELEC2720 Introduction to Embedded Computing	COMPULSORY	✓
	SEMESTER 2	MENG3451 Medical Imaging & Signal Processing	COMPULSORY	✓
YEAR 6	SEMESTER 1	ELEC3730 Digital and Computer Electronics 2	COMPULSORY	✓
	SEMESTER 2	MENG4800A Medical Engineering Project A	CORE	✓

COMPULSORY PROFESSIONAL PRACTICE: INDUSTRIAL EXPERIENCE 12 WEEKS

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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 **More than 20 units of electives (including MATH1002)**

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:

HUBS2206 **More than 20 units of electives (including MATH1002)**
HUBS2103

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 Semester 1 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 Semester 1 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.

From Semester 1 2021 onwards 20 units of directed courses have been removed from this program, replaced by ELEC2720 and ELEC4210. If you have already completed a directed course this will still be counted to your program. If you have not completed any directed courses you should complete ELEC2720 and ELEC4210 or MENG4210. Further information on removed directed courses can be found in the program transition information in the Program Handbook.

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- Core and Major Compulsory courses – minimum of 260 units
- Directed courses – 30 units.
- Electives – maximum of 30 units, at 2000 level or higher

Commenced in Semester 2 2018

YEAR	SEMESTER	COURSE	DESCRIPTION	STATUS
YEAR 1	SEMESTER 2	ELEC1310	Introduction to Electrical Engineering	COMPULSORY
		ELEC1710	Digital and Computer Electronics 1	COMPULSORY
		HUBS1420	Terminology and Communication in Biomedicine	DIRECTED <i>Offered in Semester 1 from 2021 Changed from CORE to DIRECTED in 2021</i>
		MATH1110	Mathematics for Engineering, Science and Technology 1	CORE <i>Replaced option of MATH1110 OR MATH1210</i>
YEAR 2	SEMESTER 1	ENGG1003	Introduction to Procedural Programming	CORE <i>Changed from COMPULSORY to CORE in 2021</i>
		ENGG1500	Introduction to Professional Engineering	CORE
		HUBS1401	Human Bioscience	DIRECTED <i>Changed from CORE to DIRECTED in 2021</i>
		MATH1120	Mathematics for Engineering, Science and Technology 2	CORE <i>Replaced option of MATH1120 OR MATH1220</i>
YEAR 2	SEMESTER 2	ELECTIVE*	2000 level or higher	ELECTIVE
		ENGG2500	Sustainable Engineering Practice	CORE <i>In 2021 changed from Sem 1 to Sem 2</i>
		MATH2310	Calculus of Science & Engineering	CORE <i>Changed from COMPULSORY to CORE in 2021</i>
		PHYS1210	Advanced Physics I	COMPULSORY
YEAR 3	SEMESTER 1	CHEM1010	Introductory Chemistry I	CORE <i>See Transition Arrangements</i>
		ELEC2320	Electrical and Electronic Circuits	COMPULSORY
		HUBS1105	Musculoskeletal Anatomy	DIRECTED <i>Changed from CORE to DIRECTED in 2021</i>
		ELECTIVE*	2000 level or higher	ELECTIVE
YEAR 3	SEMESTER 2	ELECTIVE*	2000 level or higher	ELECTIVE
		HUBS2103	Neural and Visceral Anatomy	CORE <i>See Transition Arrangements</i>
		MENG3800	Medical Engineering Research	CORE
		PHYS1220	Advanced Physics II	COMPULSORY
YEAR 4	SEMESTER 1	ELEC2720	Introduction to Embedded Computing	COMPULSORY <i>Replaced DIRECTED in 2021</i>
		ENGG3500	Managing Engineering Projects	CORE
		HUBS2206	Human Biochemistry and Cell Biology	CORE <i>See Transition Arrangements</i>
		HUBS2505	Human Pathophysiology	CORE
YEAR 4	SEMESTER 2	ELEC3240	Analog Electronics	COMPULSORY
		MENG3500	Medical Regulations	CORE <i>See Transition Arrangements</i>
		ENGG4500	Engineering Complexity	CORE
		MENG4800A	Medical Engineering Project A	CORE
YEAR 5	SEMESTER 1	ELEC3730	Digital and Computer Electronics 2	COMPULSORY
		MENG4210	Medical Electronics Design	COMPULSORY <i>Replaced DIRECTED in 2021 Replacing ELEC4210 in 2022</i>
		MENG4800B	Medical Engineering Project B <i>This course must be taken following MENG4800A (20 units)</i>	CORE

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CHEM1010 **30 units of Electives (including MATH1002)**
HUBS2206 **HUBS2103**

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.

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****MENG3500** – If you are completing your studies this semester, or in Semester 1 2022, you must complete MENG3500 in Semester 2 2021. You can do so without exceeding 320 units of study by using your remaining elective course. If you have completed all of your program electives, please contact programadvice@newcastle.edu.au for advice on your Semester 2 2021 enrolment.

From Semester 1 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.

From Semester 1 2021 onwards 20 units of directed courses have been removed from this program, replaced by ELEC2720 and ELEC4210. If you have already completed a directed course this will still be counted to your program. If you have not completed any directed courses you should complete ELEC2720 and ELEC4210 or MENG4210. Further information on removed directed courses can be found in the program transition information in the Program Handbook.

From 2022 onwards ELEC4210 will be replaced by MENG4210.

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