

Science

# Bachelor of Materials Science and Engineering (Honours) / Biomedical Engineering (3133) - Handbook



2022 Commencing Students  
Program Structure

PROGRAM STRUCTURE	Compulsory Core Courses	126 UOC (21 courses)	168 UOC (28 UOC)	240 UOC (40 courses)
	First Year Engineering Elective	6 UOC (1 course)		
	Specialisation Requirements	36 UOC (6 courses)	72 UOC	
	Biomedical Engineering	72 UOC (12 courses)		

**Compulsory Core Courses & First Year Engineering Electives** are courses taken from the Materials Science component of the degree as defined [here](#).

**Specialisation Requirements** are courses taken from the Material Science component. Students can choose from [Physical Metallurgy](#), [Functional Materials](#), [Process Metallurgy](#), [Materials Engineering](#), and [Ceramic Engineering](#).

**Biomedical Engineering** are courses taken from the Biomedical Engineering component of the degree as defined [here](#).

Science

# Bachelor of Materials Science and Engineering (Honours) / Biomedical Engineering (3133)

2022 Commencing Students  
Program Structure



Specialisation Requirements	Page
<b>Physical Metallurgy</b>	<a href="#">3</a>
<b>Functional Materials</b>	<a href="#">4</a>
<b>Process Metallurgy</b>	<a href="#">5</a>
<b>Materials Engineering</b>	<a href="#">6</a>
<b>Ceramic Engineering</b>	<a href="#">7</a>

# Bachelor of Materials Science and Engineering (Honours) / Biomedical Engineering (3133)

Term 1 2022 Commencing Students – [Physical Metallurgy \(MATSE1\)](#)

Choose from available proposed courses in each year

Year 1		
<b>MATS1192</b> (T1, T3)	<b>MATH1131</b> (T1, T2, T3) OR <b>MATH1141</b> (T1, T2, T3)	<b>DESN1000</b> (T1, T3)
<b>CHEM1811</b> (T1)	<b>PHYS1121</b> (T1, T2, T3) OR <b>PHYS1131</b> (T1, T2, T3)	<b>MATH1231</b> (T1, T2, T3) OR <b>MATH1241</b> (T1, T2, T3)
<b>ENGG1811</b> (T1, T2, T3) OR <b>COMP1911</b> (T2)	6 UOC First Year Engineering Elective (see Note 1)	

Year 2		
<b>MATS2001</b> (T1)	<b>MATS2004</b> (T2)	<b>MATS2006</b> (T3)
<b>MATS2003</b> (T1)	<b>MATS2005</b> (T2)	<b>MATS2007</b> (T3)
<b>MATH2019</b> (T1)	<b>MATS2008</b> (T2)	

Year 3		
<b>MATS3001</b> (T1)	<b>MATS3004</b> (T2)	6 UOC Physical Metallurgy Professional Elective (See Note 3)
<b>MATS3002</b> (T1)	<b>MATS3006</b> (T2)	<b>ANAT2511</b> (T3)
<b>MATH2089</b> (T1, T3)	<b>BIOM9420</b> (T2)	

Year 4		
<b>BIOM4951</b> = 4 UOC (T1, T2, T3)	<b>BIOM4952</b> = 4 UOC (Summer, T1, T2, T3)	<b>BIOM4953</b> = 4 UOC (Summer, T1, T2, T3)
<b>MATS3005</b> (T1)	<b>MATS4001</b> (T2)	6 UOC Physical Metallurgy Prof Elective (See Note 3)
<b>PHSL2121</b> T1)	<b>MATS3007</b> (T2)	6 UOC BIOM9XXX Elective (See Note 2)

Year 5		
<b>BIOM9410</b> (T1)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)	<b>ENGG4999</b> (See Note 4)

<b>NOTES</b>	This is intended as a guide only. Courses do not need to be studied in the exact structure that they appear here.
	See Program Structure on page 1 for a guide on the terminology and colour codes used in this progression plan.
	<b>Note 1:</b> First Year Engineering Elective: BABS1201 (T1, T3), BIOM1010 (T2), BIOS1301 (T1), CEIC1000 (T3), CVEN1701 (T3), ELEC1111 (Summer, T1, T3), ENGG1400 (T2), GMAT1110 (T2), MATH1081 (T1, T2, T3), MATS1101 (T3), MINE1010 (T1, T3), PHYS1231 (T1, T3), PSYC1001 (T1, T2), SOLA1070 (T2), CHEM1021 or CHEM1041, DESN1300, GEOS1111 or GEOS3321, MMAN1300 (N/A), CEIC1001 (N/A), COMP1921 (N/A), PTRL1010 (N/A)
	<b>Note 2:</b> BIOM9XXX Electives see <a href="#">Handbook</a>
<b>Note 3:</b> Major Specialisation Elective = MATS3003 (T1), MATS4002 (T2), MATS4003 (N/A), MATS4004 (T2), MATS4005 (T3), MATS4006 (T3), MATS4007 (T3)	
<b>Note 4:</b> Students must also complete 60 days of approved industrial training throughout their degree. Click <a href="#">HERE</a> for more info.	

# Bachelor of Materials Science and Engineering (Honours) / Biomedical Engineering (3133)



Term 1 2022 Commencing Students – [Functional Materials \(MATSF1\)](#)

Choose from available proposed courses in each year

Year 1		
MATS1192 (T1, T3)	MATH1131 (T1, T2, T3) OR MATH1141 (T1, T2, T3)	DESN1000 (T1, T3)
CHEM1811 (T1)	PHYS1121 (T1, T2, T3) OR PHYS1131 (T1, T2, T3)	MATH1231 (T1, T2, T3) OR MATH1241 (T1, T2, T3)
ENGG1811 (T1, T2, T3) OR COMP1911 (T2)	6 UOC First Year Engineering Elective (see Note 1)	

Year 2		
MATS2001 (T1)	MATS2004 (T2)	MATS2006 (T3)
MATS2003 (T1)	MATS2005 (T2)	MATS2007 (T3)
MATH2019 (T1)	MATS2008 (T2)	

Year 3		
MATS3001 (T1)	MATS3004 (T2)	ANAT2511 (T3)
MATS3002 (T1)	MATS3006 (T2)	6 UOC BIOM9xxx Elective
MATH2089 (T1, T3)	BIOM9420 (T2)	

Year 4		
BIOM4951 = 4 UOC (T1, T2, T3)	BIOM4952 = 4 UOC (Summer, T1, T2, T3)	BIOM4953 = 4 UOC (Summer, T1, T2, T3)
MATS3005 (T1)	6 UOC Functional Materials Prof Elective (See Note 3)	MATS4005 (T3)
PHSL2121 (T1)	MATS3007 (T2)	6 UOC BIOM9XXX Elective (See Note 2)

Year 5		
BIOM9410 (T1)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC Functional Materials Prof Elective (See Note 3)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)	ENGG4999 (See Note 4)

<b>NOTES</b>	This is intended as a guide only. Courses do not need to be studied in the exact structure that they appear here.
	See Program Structure on page 1 for a guide on the terminology and colour codes used in this progression plan.
	Note 1: First Year Engineering Elective: BABS1201 (T1, T3), BIOM1010 (T2), BIOS1301 (T1), CEIC1000 (T3), CVEN1701 (T3), ELEC1111 (Summer, T1, T3), ENGG1400 (T2), GMAT1110 (T2), MATH1081 (T1, T2, T3), MATS1101 (T3), MINE1010 (T1, T3), PHYS1231 (T1, T3), PSYC1001 (T1, T2), SOLA1070 (T2), CHEM1021 or CHEM1041, DESN1300, GEOS1111 or GEOS3321, MMAN1300 (N/A), CEIC1001 (N/A), COMP1921 (N/A), PTRL1010 (N/A)
	Note 2: BIOM9XXX Electives see <a href="#">Handbook</a>
Note 3: Major Specialisation Elective = MATS3003 (T1), MATS4001 (T2), MATS4002 (T2), MATS4003 (N/A), MATS4004 (T2), MATS4006 (T3), MATS4007 (T3)	
Note 4: Students must also complete 60 days of approved industrial training throughout their degree. Click <a href="#">HERE</a> for more info.	

# Bachelor of Materials Science and Engineering (Honours) / Biomedical Engineering (3133)



Term 1 2022 Commencing Students – [Process Metallurgy \(MATSG1\)](#)

Choose from available proposed courses in each year

Year 1		
MATS1192 (T1, T3)	MATH1131 (T1, T2, T3) OR MATH1141 (T1, T2, T3)	DESN1000 (T1, T3)
CHEM1811 (T1)	PHYS1121 (T1, T2, T3) OR PHYS1131 (T1, T2, T3)	MATH1231 (T1, T2, T3) OR MATH1241 (T1, T2, T3)
ENGG1811 (T1, T2, T3) OR COMP1911 (T2)	6 UOC First Year Engineering Elective (see Note 1)	

Year 2		
MATS2001 (T1)	MATS2004 (T2)	MATS2006 (T3)
MATS2003 (T1)	MATS2005 (T2)	MATS2007 (T3)
MATH2019 (T1)	MATS2008 (T2)	

Year 3		
MATS3001 (T1)	MATS3004 (T2)	ANAT2511 (T3)
MATS3002 (T1)	MATS3006 (T2)	6 UOC BIOM9XXX Elective (See Note 2)
MATH2089 (T1, T3)	BIOM9420 (T2)	

Year 4		
BIOM4951 = 4 UOC (T1, T2, T3)	BIOM4952 = 4 UOC (Summer, T1, T2, T3)	BIOM4953 = 4 UOC (Summer, T1, T2, T3)
MATS3003 (T1)	MATS4003 (Replace with Metallurgy Prof Elective)	6 UOC Process Metallurgy Prof Elective (See Note 3)
PHSL2121 (T1)	MATS3007 (T2)	6 UOC BIOM9XXX Elective (See Note 2)

Year 5		
BIOM9410 (T1)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC Process Metallurgy Prof Elective (See Note 3)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)	ENGG4999 (See Note 4)

<b>NOTES</b>	This is intended as a guide only. Courses do not need to be studied in the exact structure that they appear here.
	See Program Structure on page 1 for a guide on the terminology and colour codes used in this progression plan.
	Note 1: First Year Engineering Elective: BABS1201 (T1, T3), BIOM1010 (T2), BIOS1301 (T1), CEIC1000 (T3), CVEN1701 (T3), ELEC1111 (Summer, T1, T3), ENGG1400 (T2), GMAT1110 (T2), MATH1081 (T1, T2, T3), MATS1101 (T3), MINE1010 (T1, T3), PHYS1231 (T1, T3), PSYC1001 (T1, T2), SOLA1070 (T2), CHEM1021 or CHEM1041, DESN1300, GEOS1111 or GEOS3321, MMAN1300 (N/A), CEIC1001 (N/A), COMP1921 (N/A), PTRL1010 (N/A)
	Note 2: BIOM9XXX Electives see <a href="#">Handbook</a>
Note 3: Major Specialisation Elective = MATS3005 (T1), MATS4001 (T2), MATS4002 (T2), MATS4004 (T2), MATS4005 (T3), MATS4006 (T3), MATS4007 (T3)	
Note 4: Students must also complete 60 days of approved industrial training throughout their degree. Click <a href="#">HERE</a> for more info.	



# Bachelor of Materials Science and Engineering (Honours) / Biomedical Engineering (3133)



Term 1 2022 Commencing Students – [Materials Engineering \(MATSH1\)](#)

Choose from available proposed courses in each year

Year 1		
MATS1192 (T1, T3)	MATH1131 (T1, T2, T3) OR MATH1141 (T1, T2, T3)	DESN1000 (T1, T3)
CHEM1811 (T1)	PHYS1121 (T1, T2, T3) OR PHYS1131 (T1, T2, T3)	MATH1231 (T1, T2, T3) OR MATH1241 (T1, T2, T3)
ENGG1811 (T1, T2, T3) OR COMP1911 (T2)	6 UOC First Year Engineering Elective (see Note 1)	

Year 2		
MATS2001 (T1)	MATS2004 (T2)	MATS2006 (T3)
MATS2003 (T1)	MATS2005 (T2)	MATS2007 (T3)
MATH2019 (T1)	MATS2008 (T2)	

Year 3		
MATS3001 (T1)	MATS3004 (T2)	ANAT2511 (T3)
MATS3002 (T1)	MATS3006 (T2)	6 UOC BIOM9XXX Elective (See Note 2)
MATH2089 (T1, T3)	BIOM9420 (T2)	

Year 4		
BIOM4951 = 4 UOC (T1, T2, T3)	BIOM4952 = 4 UOC (Summer, T1, T2, T3)	BIOM4953 = 4 UOC (Summer, T1, T2, T3)
6 UOC Materials Eng Prof Elective (See Note 3)	6 UOC Materials Eng Prof Elective (See Note 3)	6 UOC Materials Eng Prof Elective (See Note 3)
PHSL2121 (T1)	MATS3007 (T2)	6 UOC BIOM9XXX Elective (See Note 2)

Year 5		
BIOM9410 (T1)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC Materials Eng Prof Elective (See Note 3)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)	ENGG4999 (See Note 4)

<b>NOTES</b>	This is intended as a guide only. Courses do not need to be studied in the exact structure that they appear here.
	See Program Structure on page 1 for a guide on the terminology and colour codes used in this progression plan.
	Note 1: First Year Engineering Elective: BABS1201 (T1, T3), BIOM1010 (T2), BIOS1301 (T1), CEIC1000 (T3), CVEN1701 (T3), ELEC1111 (Summer, T1, T3), ENGG1400 (T2), GMAT1110 (T2), MATH1081 (T1, T2, T3), MATS1101 (T3), MINE1010 (T1, T3), PHYS1231 (T1, T3), PSYC1001 (T1, T2), SOLA1070 (T2), CHEM1021 or CHEM1041, DESN1300, GEOS1111 or GEOS3321, MMAN1300 (N/A), CEIC1001 (N/A), COMP1921 (N/A), PTRL1010 (N/A)
	Note 2: BIOM9XXX Electives see <a href="#">Handbook</a>
Note 3: Major Specialisation Elective = MATS3003 (T1), MATS3005 (T1), MATS4001 (T2), MATS4002 (T2), MATS4003 (N/A), MATS4004 (T2), MATS4005 (T3), MATS4006 (T3), MATS4007 (T3)	
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# Bachelor of Materials Science and Engineering (Honours) / Biomedical Engineering (3133)



Term 1 2022 Commencing Students – [Ceramic Engineering \(MATSJ1\)](#)

Choose from available proposed courses in each year

Year 1		
MATS1192 (T1, T3)	MATH1131 (T1, T2, T3) OR MATH1141 (T1, T2, T3)	DESN1000 (T1, T3)
CHEM1811 (T1)	PHYS1121 (T1, T2, T3) OR PHYS1131 (T1, T2, T3)	MATH1231 (T1, T2, T3) OR MATH1241 (T1, T2, T3)
ENGG1811 (T1, T2, T3) OR COMP1911 (T2)	6 UOC First Year Engineering Elective (see Note 1)	

Year 2		
MATS2001 (T1)	MATS2004 (T2)	MATS2006 (T3)
MATS2003 (T1)	MATS2005 (T2)	MATS2007 (T3)
MATH2019 (T1)	MATS2008 (T2)	

Year 3		
MATS3001 (T1)	MATS3004 (T2)	ANAT2511 (T3)
MATS3002 (T1)	MATS3006 (T2)	6 UOC BIOM9XXX Elective (See Note 2)
MATH2089 (T1, T3)	BIOM9420 (T2)	

Year 4		
BIOM4951 = 4 UOC (T1, T2, T3)	BIOM4952 = 4 UOC (Summer, T1, T2, T3)	BIOM4953 = 4 UOC (Summer, T1, T2, T3)
MATS4002 (T1)	MATS4004 (T2)	6 UOC Ceramic Eng Prof Elective (See Note 3)
PHSL2121 (T1)	MATS3007 (T2)	6 UOC BIOM9XXX Elective (See Note 2)

Year 5		
BIOM9410 (T1)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC Ceramic Eng Prof Elective (See Note 3)	6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)
6 UOC BIOM9XXX Elective (See Note 2)	6 UOC BIOM9XXX Elective (See Note 2)	ENGG4999 (See Note 4)

<b>NOTES</b>	This is intended as a guide only. Courses do not need to be studied in the exact structure that they appear here.
	See Program Structure on page 1 for a guide on the terminology and colour codes used in this progression plan.
	Note 1: First Year Engineering Elective: BABS1201 (T1, T3), BIOM1010 (T2), BIOS1301 (T1), CEIC1000 (T3), CVEN1701 (T3), ELEC1111 (Summer, T1, T3), ENGG1400 (T2), GMAT1110 (T2), MATH1081 (T1, T2, T3), MATS1101 (T3), MINE1010 (T1, T3), PHYS1231 (T1, T3), PSYC1001 (T1, T2), SOLA1070 (T2), CHEM1021 or CHEM1041, DESN1300, GEOS1111 or GEOS3321, MMAN1300 (N/A), CEIC1001 (N/A), COMP1921 (N/A), PTRL1010 (N/A)
	Note 2: BIOM9XXX Electives see <a href="#">Handbook</a>
Note 3: Major Specialisation Elective = MATS3003 (T1), MATS3005 (T1), MATS4001 (T2), MATS4003 (N/A), MATS4005 (T3), MATS4006 (T3), MATS4007 (T3)	
Note 4: Students must also complete 60 days of approved industrial training throughout their degree. Click <a href="#">HERE</a> for more info.	