Science

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

2023 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)		
	Biomedical Engineering	72 UOC (12 courses)	72 UOC	

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.

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2023 Commencing Students
Program Structure

Specialisation Requirements	Page
Physical Metallurgy	3
Functional Materials	4
Process Metallurgy	5
Materials Engineering	6
Ceramic Engineering	7

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Science

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Term 1 2023 Commencing Students – Physical Metallurgy (MATSE1)

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)	6 UOC Physical Metallurgy Professional Elective (See Note 3)
MATS3002 (T1)	**MATS3006** (T2)	**ANAT2511** (T3)
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)	**MATS4001** (T2)	6 UOC Physical 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 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)	ENGG4999 (See Note 4)

NOTES

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 Handbook

Note 3: Major Specialisation Elective = MATS3003 (T1), MATS4002 (T2), MATS4003 (N/A), MATS4004 (T2), MATS4005 (T3), MATS4006 (T3), MATS4007 (T3)

Note 4: Students must also complete 60 days of approved industrial training throughout their degree. Click HERE for more info.

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Science

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

Term 1 2023 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)

NOTES

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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 Handbook

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 HERE for more info.

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Science

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

Term 1 2023 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)

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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 Handbook

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 HERE for more info.

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Science

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Term 1 2023 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)

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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 Handbook

Note 3: Major Specialisation Elective = MATS3003 (T1), MATS3005 (T1), MATS4001 (T2), MATS4002 (T2), MATS4003 (N/A), MATS4004 (T2), MATS4005 (T3), MATS4006 (T3), MATS4007 (T3)

Note 4: Students must also complete 60 days of approved industrial training throughout their degree. Click HERE for more info.

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Science

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Term 1 2023 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)

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Note 2: BIOM9XXX Electives see Handbook

Note 3: Major Specialisation Elective = MATS3003 (T1), MATS3005 (T1), MATS4001 (T2), MATS4003 (N/A), MATS4005 (T3), MATS4006 (T3), MATS4007 (T3)

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