# MATERIALS ENGINEERING, TESTAMUR MAJOR (T128)

Western Sydney University Major Code: T128

Previous Code: MT3049.1

Available to students in other Western Sydney University programs? No

Since the dawning of mankind an understanding of how materials can be obtained and used has been critical to successful human endeavour. Materials engineers are concerned with the highly technological and dynamic process of understanding, developing, and applying materials (metals, polymers, ceramics, composites) to a range of engineering problems. Students will develop skills necessary to synthesise relevant information so that they can be effective decision makers in a materials context. These skills will serve them well in varied career opportunities associated with biomedical devices, nanotechnology, advanced manufacturing, opto-electronics, energy, aerospace, and sustainable construction. This major includes a mandatory 300 to 450 hour industrial placement as a completion requirement.

				Credit Points
Location			Year 2	
Campus	Mode	Advice	Autumn session	
Parramatta Campus -	Internal	Program Advice	MECH 2001	Kinematics and Kinetics of Machines
Victoria Road		(edbe@westernsydney.ed	MECH 2003	Mechanics of Materials
Parramatta City	Internal	Program Advice	ELEC 1006	Engineering Computing
Campus-Macquarie		(edbe@westernsydney.ed	uPROC 2003	Materials Selection and Design
Street				Credit Points
Penrith Campus	Internal	Program Advice	Spring session	
		(eane@westernsydney.ed)	ENGR 2016	Pavement Materials and Design

# **Recommended Sequence**

This major is included in Bachelor of Engineering Science, Bachelor of Engineering (Honours), Bachelor of Engineering Advanced (Honours) and Bachelor of Engineering (Honours)/Bachelor of Business.

Please follow the recommended sequence for your course as noted below.

Select the link for your program below to see details of the major

# **Bachelor of Engineering (Honours)**

Qualification for this award requires the successful completion of 320 credit points, which include the subjects listed in the recommended sequence below.

\* All students undertaking the Bachelor of Engineering (Honours) are required to enrol in MATH 1021 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in MATH 1021 Mathematics for Engineers Preliminary or be transferred by the School to MATH 1016 Mathematics for Engineers 1.

Students remaining in MATH 1021 Mathematics for Engineers Preliminary will be required to complete MATH 1016 Mathematics for Engineers 1 during second semester and will be encouraged to complete MATH 1019 Mathematics for Engineers 2 during the Summer session.

#### Start-year intake

Title

Course

oourse		Points
Year 1		
Autumn session		
ENGR 1011	Engineering Physics	10
PROC 1006	Materials Engineering Fundamentals	10
ENGR 1024	Introduction to Engineering Practice	10
Select one of the fo	llowing:	10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
	Credit Points	40
Spring session		
ENGR 1018	Fundamentals of Mechanics	10
PROC 1008	Introduction to Materials Engineering	10
Select one elective		10
Select one of the fo	llowing:	10
MATH 1016	Mathematics for Engineers 1	
MATH 1019	Mathematics for Engineers 2	
	Credit Points	40
Year 2		
Autumn session		
MECH 2001	Kinematics and Kinetics of Machines	10
MECH 2003	Mechanics of Materials	10
ELEC 1006	Engineering Computing	10
PROC 2003	Materials Selection and Design	10
	Credit Points	40
Spring session		
ENGR 2016	Pavement Materials and Design	10
ENGR 2001	Automated Manufacturing	10
ENGR 2032	Sustainability Analysis and Design	10
MECH 3002	Advanced Mechanics of Materials	10
	Credit Points	40
Year 3		
Autumn session		
MECH 3005	Mechanical Design	10
PROC 3008	Materials Processing and Applications	10
CIVL 2003	Fluid Mechanics	10
Select one elective		10
<ul> <li>Elective must b</li> </ul>	e Level 2 or higher	
	Credit Points	40
Spring session		10
PROC 4001	Advanced Materials Topics	10
CIVI 3020	Sustainable Waste Engineering	10
MECH 3008	Thermodynamics and Heat Transfer	10
Select one Alternat	e Subject	10
Industrial Experience	ce	
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40
Year 4		
Autumn session		
PROC 4002	Engineering Materials from Waste	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
Select one Alternat	e Subject	10
Select one elective		10

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<ul> <li>Elective subject must be Level 2 or higher</li> </ul>
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	Credit Points	40
Spring session		
ENGR 4026	Final Year Project 2 (UG Engineering)	10
Two Alternate Subject	ots	20
Select one elective		10

· Elective subjects must be Level 2 or higher

 Credit Points	40
Total Credit Points	320

#### Alternate Subjects

Subject	Title	Credit Points
BIOS 1022	Introduction to Human Biology	10
HLTH 2003	Biomechanics	10
ENGR 3003	Biomedical Electronics	10
ENGR 3004	Biomedical Signals and Data Analysis	10
ELEC 1003	Electrical Fundamentals	10
ENGR 4035	Smart and Liveable Cities	10
ENGR 4034	Climate Smart Engineering	10
ELEC 3010	Renewable Energy Systems Design	10
CIVL 2018	Water Supply Systems Design	10
Modern Digital De	esign and Development (not yet available)	10
Digital Manufactu	uring and IIoT (not yet available)	10
Design for Advan	ced Manufacturing (not yet available)	10
HUMN 1013	Contextualising Indigenous Australia (Day Mod	e) 10
HUMN 1058	Indigenous Landscapes	10
HUMN 2038	Pigments of the Imagination	10
HUMN 2048	Revaluing Indigenous Economics (Day Mode)	10
PERF 2011	From Corroborees to Curtain Raisers (Day Mod	e) 10
VISU 2003	From Ochre to Acrylics to New Technologies	10
CEDS 3001	Bridging the Gap: Re-engaging Indigenous Learners	10
HUMN 3082	The Making of the 'Aborigines'	10
WELF 3008	Learning through Indigenous Australian Community Service (Day Mode)	10
HUMN 3070	Rethinking Research with Indigenous Australians: Independent Study Project (Day Mode)	10

Alternate subjects may be used to complete one of the minors listed below.

Biomedical Engineering, Minor (https://hbook.westernsydney.edu.au/ archives/2022-2023/majors-minors/biomedical-engineering-minor/) Indigenous Australian Studies, Minor (https://

hbook.westernsydney.edu.au/archives/2022-2023/majors-minors/ indigenous-australian-studies-minor/)

Sustainability Engineering, Minor (https://

hbook.westernsydney.edu.au/archives/2022-2023/majors-minors/ sustainability-engineering-minor/)

Advanced Manufacturing, Minor (https://hbook.westernsydney.edu.au/ archives/2022-2023/majors-minors/advanced-manufacturing-minor/)

#### **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 - Introduction to Materials Engineering

#### Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
Select one of the follo	owing:	10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
ENGR 1018	Fundamentals of Mechanics	10
PROC 1008	Introduction to Materials Engineering	10
ENGR 1024	Introduction to Engineering Practice	10
	Credit Points	40
Autumn session		
Select one of the foll	owing:	10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
ENGR 1011	Engineering Physics	10
PROC 1006	Materials Engineering Fundamentals	10
Select one elective		10
Elective unit mus	t be Level 1 or higher	
	Credit Points	40
Year 2		
Spring session		
ENGR 2001	Automated Manufacturing	10
ENGR 2032	Sustainability Analysis and Design	10
ENGR 2016	Pavement Materials and Design	10
Select one elective		10
<ul> <li>Elective unit mus</li> </ul>	t be Level 2 or higher	
	Credit Points	40
Autumn session		10
PROC 2003	Materials Selection and Design	10
MECH 2003	Mechanics of Materials	10
MECH 2001	Kinematics and Kinetics of Machines	10
PROC 3008	Materials Processing and Applications	10
Year 3	Credit Points	40
Spring session		
PROC 4001	Advanced Materials Topics	10
CIVL 3020	Sustainable Waste Engineering	10
MECH 3008	Thermodynamics and Heat Transfer	10
MECH 3002	Advanced Mechanics of Materials	10
	Credit Points	40
Autumn session		
ELEC 1006	Engineering Computing	10
MECH 3005	Mechanical Design	10
CIVL 2003	Fluid Mechanics	10
One Alternate Subjec	t	10
Industrial Experience		
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40

#### Year 4

#### Spring session

ENGR 4025	Final Year Project 1 (UG Engineering)	10
One Alternate su	bject	10
One Alternate su	bject	10
Select one electi	ve	10
<ul> <li>Elective unit</li> </ul>	must be Level 2 or higher	

**Credit Points** 40 Autumn session ENGR 4026 Final Year Project 2 (UG Engineering) 10 PROC 4002 Engineering Materials from Waste 10 10 Select one elective One Alternate subject 10 · Elective unit must be Level 2 or higher

	Credit Points	40
	Total Credit Points	320
Alternate Subje	ects	
Subject	Title	Credit Points
BIOS 1022	Introduction to Human Biology	10
HLTH 2003	Biomechanics	10
ENGR 3003	Biomedical Electronics	10
ENGR 3004	Biomedical Signals and Data Analysis	10
ELEC 1003	Electrical Fundamentals	10
ENGR 4035	Smart and Liveable Cities	10
ENGR 4034	Climate Smart Engineering	10
ELEC 3010	Renewable Energy Systems Design	10
CIVL 2018	Water Supply Systems Design	10
Modern Digital [	Design and Development (not yet available)	10
Digital Manufac	turing and IIoT (not yet available)	10
Design for Adva	nced Manufacturing (not yet available)	10
HUMN 1013	Contextualising Indigenous Australia (Day Mod	e) 10
HUMN 1058	Indigenous Landscapes	10
HUMN 2038	Pigments of the Imagination	10
HUMN 2048	Revaluing Indigenous Economics (Day Mode)	10
PERF 2011	From Corroborees to Curtain Raisers (Day Mode	e) 10
VISU 2003	From Ochre to Acrylics to New Technologies	10
CEDS 3001	Bridging the Gap: Re-engaging Indigenous Learners	10
HUMN 3082	The Making of the 'Aborigines'	10
WELF 3008	Learning through Indigenous Australian Community Service (Day Mode)	10
HUMN 3070	Rethinking Research with Indigenous Australians: Independent Study Project (Day Mode)	10

Alternate subjects may be used to complete one of the minors listed below.

Biomedical Engineering, Minor (https://hbook.westernsydney.edu.au/ archives/2022-2023/majors-minors/biomedical-engineering-minor/) Indigenous Australian Studies, Minor (https://

hbook.westernsydney.edu.au/archives/2022-2023/majors-minors/ indigenous-australian-studies-minor/)

Sustainability Engineering, Minor (https://

hbook.westernsydney.edu.au/archives/2022-2023/majors-minors/ sustainability-engineering-minor/)

Advanced Manufacturing, Minor (https://hbook.westernsydney.edu.au/ archives/2022-2023/majors-minors/advanced-manufacturing-minor/)

#### **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 -Introduction to Materials Engineering

### **Bachelor of Engineering Advanced** (Honours)

Qualification for this award requires the successful completion of 320 credit points, which include the subjects listed in the recommended sequence below.

#### Start-year intake

PROC 4001

Course	Title	Credit Points
Year 1		
Autumn session		
MATH 1034	Mathematics for Engineers 1 (Advanced)	10
ENGR 1047	Advanced Engineering Physics 1	10
PROC 1006	Materials Engineering Fundamentals	10
ENGR 1024	Introduction to Engineering Practice	10
	Credit Points	40
Spring session		
MATH 1035	Mathematics for Engineers 2 (Advanced)	10
ENGR 1018	Fundamentals of Mechanics	10
PROC 1008	Introduction to Materials Engineering	10
Select one elective		10
	Credit Points	40
Year 2		
Autumn session		
MECH 2001	Kinematics and Kinetics of Machines	10
MECH 2003	Mechanics of Materials	10
ENGR 1045	Engineering Programming Fundamentals	10
PROC 2003	Materials Selection and Design	10
	Credit Points	40
Spring session		
MECH 2005	Mathematics for Mechanical and Mechatronic Engineers	10
ENGR 2032	Sustainability Analysis and Design	10
ENGR 2016	Pavement Materials and Design	10
ENGR 2001	Automated Manufacturing	10
Students who fail to of completion of 160 of 200 Credit points v Engineering (Honour	maintain a minimum GPA of 5.0 at the end Credit Points, and again at the completion will be automatically transferred to the B. s) (3740) program.	
	Credit Points	40
Year 3		
Autumn session		
PROC 3008	Materials Processing and Applications	10
MECH 3005	Mechanical Design	10
CIVL 2003	Fluid Mechanics	10
One Alternate Subject	t	10
	Credit Points	40
Spring session		

Advanced Materials Topics

CIVL 3020	Sustainable Waste Engineering	10
MECH 3008	Thermodynamics and Heat Transfer	10
Select one elective		10
<b>E</b> 1	- Laval O an hinkan	

Electives must be Level 2 or higher

#### Industrial Experience

ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40
Year 4		
Autumn session		
PROC 4002	Engineering Materials from Waste	10
ENGR 4037	Advanced Engineering Thesis 1: Preliminary Investigations	10
One Alternate Su	ıbject	10
Select one electi	ve	10
<ul> <li>Elective unit</li> </ul>	must be Level 2 or higher	

	Credit Points	40
Spring session		
ENGR 4036	Advanced Engineering Thesis 2: Detailed Investigations	10
Two Alternate subjects		10
Select two electives		20
Elective subjects	s must be Level 2 or higher	
	Credit Points	40
	Total Credit Points	320

#### Alternate Subjects

Subject	Title	Credit Points
BIOS 1022	Introduction to Human Biology	10
HLTH 2003	Biomechanics	10
ENGR 3003	Biomedical Electronics	10
ENGR 3004	Biomedical Signals and Data Analysis	10
ELEC 1003	Electrical Fundamentals	10
ENGR 4035	Smart and Liveable Cities	10
ENGR 4034	Climate Smart Engineering	10
ELEC 3010	Renewable Energy Systems Design	10
CIVL 2018	Water Supply Systems Design	10
Modern Digital De	esign and Development (not yet available)	10
Digital Manufact	uring and IIoT (not yet available)	10
Design for Advan	ced Manufacturing (not yet available)	10
HUMN 1013	Contextualising Indigenous Australia (Day Mo	de) 10
HUMN 1058	Indigenous Landscapes	10
HUMN 2038	Pigments of the Imagination	10
HUMN 2048	Revaluing Indigenous Economics (Day Mode)	10
PERF 2011	From Corroborees to Curtain Raisers (Day Mod	de) 10
VISU 2003	From Ochre to Acrylics to New Technologies	10
CEDS 3001	Bridging the Gap: Re-engaging Indigenous Learners	10
HUMN 3082	The Making of the 'Aborigines'	10
WELF 3008	Learning through Indigenous Australian Community Service (Day Mode)	10
HUMN 3070	Rethinking Research with Indigenous Australians: Independent Study Project (Day Mode)	10

Alternate subjects may be used to complete one of the minors listed below.

Biomedical Engineering, Minor (https://hbook.westernsydney.edu.au/ archives/2022-2023/majors-minors/biomedical-engineering-minor/) Indigenous Australian Studies, Minor (https://

hbook.westernsydney.edu.au/archives/2022-2023/majors-minors/ indigenous-australian-studies-minor/)

Sustainability Engineering, Minor (https://

hbook.westernsydney.edu.au/archives/2022-2023/majors-minors/ sustainability-engineering-minor/)

Advanced Manufacturing, Minor (https://hbook.westernsydney.edu.au/ archives/2022-2023/majors-minors/advanced-manufacturing-minor/)

#### **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

MECH 4005 Advanced Engineering Thesis 1: Preliminary Investigations, replaced by ENGR 4037 Advanced Engineering Thesis 1: Preliminary Investigations

MECH 4006 Advanced Engineering Thesis 2: Detailed Investigations, replaced by ENGR 4036 Advanced Engineering Thesis 2: Detailed Investigations

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 -Introduction to Materials Engineering

#### Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
MATH 1034	Mathematics for Engineers 1 (Advanced)	10
ENGR 1011	Engineering Physics	10
PROC 1008	Introduction to Materials Engineering	10
ENGR 1024	Introduction to Engineering Practice	10
	Credit Points	40
Autumn session		
MATH 1035	Mathematics for Engineers 2 (Advanced)	10
ENGR 1047	Advanced Engineering Physics 1	10
PROC 1006	Materials Engineering Fundamentals	10
Select one elective		10
Elective unit mu	st be Level 1 or higher	
	Credit Points	40
Year 2		
Spring session		
MECH 2005	Mathematics for Mechanical and	10
	Mechatronic Engineers	
ENGR 2001	Automated Manufacturing	10
ENGR 2032	Sustainability Analysis and Design	10
ENGR 2016	Pavement Materials and Design	10
	Credit Points	40
Autumn session		
PROC 2003	Materials Selection and Design	10
MECH 2003	Mechanics of Materials	10
MECH 2001	Kinematics and Kinetics of Machines	10

	Total Credit Points	320
	Credit Points	40
Elective unit mus	st be Level 2 or higher	
One Alternate subjec	st	10
Select one elective		10
PROC 4002	Engineering Materials from Waste	10
ENGR 4036	Advanced Engineering Thesis 2: Detailed Investigations	10
Autumn session		
	Credit Points	40
Elective unit mus	st be Level 2 or higher	
Select one elective		10
One Alternate subject	et and the second s	10
One Alternate subjec	t	10
ENGR 4037	Advanced Engineering Thesis 1: Preliminary Investigations	10
Spring session		
Year 4		
	Credit Points	40
ENGR 3017	Industrial Experience (Engineering)	0
Industrial Experience	2	
One Alternate subject	t	10
CIVL 2003	Fluid Mechanics	10
MECH 3005	Mechanical Design	10
ELEC 1006	Engineering Computing	10
Autumn session		
	Credit Points	40
<ul> <li>Elective unit must</li> </ul>	at de level 2 or higher	
Select one elective		10
MECH 3008	I hermodynamics and Heat Transfer	10
CIVL 3020	Sustainable Waste Engineering	10
PROC 4001	Advanced Materials Topics	10
Spring session		
Year 3		
	Credit Points	40
Engineering (Honour	s) (3740) program.	
of 200 Credit points	will be automatically transferred to the B.	
of completion of 160	Credit Points, and again at the completion	
Studente who fail to	maintain a minimum CPA of 5.0 at the and	10
PBOC 3008	Materials Processing and Applications	10

Alternate	Subj	ects
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Subject	Title	Credit Points
BIOS 1022	Introduction to Human Biology	10
HLTH 2003	Biomechanics	10
ENGR 3003	Biomedical Electronics	10
ENGR 3004	Biomedical Signals and Data Analysis	10
ELEC 1003	Electrical Fundamentals	10
ENGR 4035	Smart and Liveable Cities	10
ENGR 4034	Climate Smart Engineering	10
ELEC 3010	Renewable Energy Systems Design	10
CIVL 2018	Water Supply Systems Design	10
Modern Digital	Design and Development (not yet available)	10
Digital Manufa	cturing and IIoT (not yet available)	10

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Design for Advan	ced Manufacturing (not yet available)	10
HUMN 1013	Contextualising Indigenous Australia (Day Mode)	10
HUMN 1058	Indigenous Landscapes	10
HUMN 2038	Pigments of the Imagination	10
HUMN 2048	Revaluing Indigenous Economics (Day Mode)	10
PERF 2011	From Corroborees to Curtain Raisers (Day Mode)	10
VISU 2003	From Ochre to Acrylics to New Technologies	10
CEDS 3001	Bridging the Gap: Re-engaging Indigenous Learners	10
HUMN 3082	The Making of the 'Aborigines'	10
WELF 3008	Learning through Indigenous Australian Community Service (Day Mode)	10
HUMN 3070	Rethinking Research with Indigenous Australians: Independent Study Project (Day Mode)	10

Alternate subjects may be used to complete one of the minors listed below.

Biomedical Engineering, Minor (https://hbook.westernsydney.edu.au/ archives/2022-2023/majors-minors/biomedical-engineering-minor/) Indigenous Australian Studies, Minor (https://

hbook.westernsydney.edu.au/archives/2022-2023/majors-minors/ indigenous-australian-studies-minor/)

Sustainability Engineering, Minor (https://

hbook.westernsydney.edu.au/archives/2022-2023/majors-minors/ sustainability-engineering-minor/)

Advanced Manufacturing, Minor (https://hbook.westernsydney.edu.au/ archives/2022-2023/majors-minors/advanced-manufacturing-minor/)

#### **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in 2021 or earlier.

MECH 4005 Advanced Engineering Thesis 1: Preliminary Investigations, replaced by ENGR 4037 Advanced Engineering Thesis 1: Preliminary Investigations

MECH 4006 Advanced Engineering Thesis 2: Detailed Investigations, replaced by ENGR 4036 Advanced Engineering Thesis 2: Detailed Investigations

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 - Introduction to Materials Engineering

# **Bachelor of Engineering (Honours)/ Bachelor of Business**

Qualification for this award requires the successful completion of 400 credit points, which include the subjects listed in the recommended sequence below.

#### Start-year intake

Course	Title	Credit Points
Year 1		
Autumn session		
MATH 1016	Mathematics for Engineers 1	10
ENGR 1011	Engineering Physics	10
BBus Core Subje	ect 1	10

BBus Core Subject	2	10
	Credit Points	40
Spring session		
MATH 1019	Mathematics for Engineers 2	10
ENGR 1018	Fundamentals of Mechanics	10
BBus Core Subject	3	10
BBus Core Subject	4	10
	Credit Points	40
Year 2		
Autumn session		
PROC 1006	Materials Engineering Fundamentals	10
BBus Professional	Subject I	10
BBus Professional	Subject 2	10
BBUS Major Subjec	Credit Deinte	10
Spring session	Credit Points	40
	Introduction to Materials Engineering	10
FLEC 1003	Electrical Fundamentals	10
BBus Maior Subiec	at 2	10
BBus Major Subjec		10
	Credit Points	40
Year 3		
Autumn session		
ELEC 1006	Engineering Computing	10
MECH 2001	Kinematics and Kinetics of Machines	10
MECH 2003	Mechanics of Materials	10
PROC 2003	Materials Selection and Design	10
	Credit Points	40
Spring session		
ENGR 2032	Sustainability Analysis and Design	10
ENGR 2001	Automated Manufacturing	10
MECH 3002	Advanced Mechanics of Materials	10
ENGR 2016	Pavement Materials and Design	10
Veer A	Credit Points	40
fear 4		
	Materials Processing and Applications	10
MECH 3005	Mechanical Design	10
BBus Major Subjec	t 4	10
BBus Major Subjec	it 5	10
	Credit Points	40
Spring session		
PROC 4001	Advanced Materials Topics	10
CIVL 3020	Sustainable Waste Engineering	10
BBus Major Subjec	t 6	10
BBus Major Subjec	t 7	10
Industrial Experien	се	
ENGR 3017	Industrial Experience (Engineering)	0
	Credit Points	40
Year 5		
Autumn session		
ENGR 4025	Final Year Project 1 (UG Engineering)	10
PRUC 4002	Engineering Materials from Waste	10
DBUS Protessional	Subject 3	10
Dous Major Subjec	Credit Points	10
		-10

Spring session		
ENGR 4026	Final Year Project 2 (UG Engineering)	10
MECH 3008	Thermodynamics and Heat Transfer	10
ENGR 3020	Numerical Methods in Engineering	10
BBus Professiona	al Subject 4	10
	Credit Points	40
	Total Credit Points	400

#### **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 -Introduction to Materials Engineering

#### Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
MATH 1016	Mathematics for Engineers 1	10
ENGR 1018	Fundamentals of Mechanics	10
BBus Core Subject 1		10
BBus Core Subject 2		10
	Credit Points	40
Autumn session		
MATH 1019	Mathematics for Engineers 2	10
ENGR 1011	Engineering Physics	10
BBus Core Subject 3		10
BBus Core Subject 4		10
	Credit Points	40
Year 2		
Spring session		
PROC 1008	Introduction to Materials Engineering	10
ELEC 1003	Electrical Fundamentals	10
BBus Major Subject	1	10
BBus Major Subject	2	10
	Credit Points	40
Autumn session		
PROC 1006	Materials Engineering Fundamentals	10
BBus Professional S	ubject 1	10
BBus Professional S	ubject 2	10
BBus Major Subject	3	10
	Credit Points	40
Year 3		
Spring session		
ENGR 2032	Sustainability Analysis and Design	10
ENGR 2001	Automated Manufacturing	10
CIVL 3020	Sustainable Waste Engineering	10
PROC 2003	Materials Selection and Design	10
	Credit Points	40
Autumn session		
ELEC 1006	Engineering Computing	10
MECH 2001	Kinematics and Kinetics of Machines	10
MECH 2003	Mechanics of Materials	10
PROC 2003	Materials Selection and Design	10
	Credit Points	40

	Total Credit Points	400
	Credit Points	40
BBus Major Subje	ect 8	10
BBus Professiona	I Subject 4	10
PROC 4002	Engineering Materials from Waste	10
ENGR 4026	Final Year Project 2 (UG Engineering)	10
Autumn session		
	Credit Points	40
BBus Professiona	Il Subject 3	10
ENGR 3020	Numerical Methods in Engineering	10
MECH 3008	Thermodynamics and Heat Transfer	10
ENGR 4025	Final Year Project 1 (UG Engineering)	10
Spring session		
Year 5		
	Credit Points	40
BBus Major Subje	et 7	10
BBus Major Subje	mechanical Design	10
MECH 2005	Materials Processing and Applications	10
	Materials Processing and Applications	10
A	Credit Points	40
ENGR 3017		1
Industrial Experie	nce	
BBus Major Subje	ect 5	10
BBus Major Subje	ect 4	10
MECH 3005	Mechanical Design	10
PROC 4001	Advanced Materials Topics	10
Spring session		

Equivalent Subjects

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 -Introduction to Materials Engineering

# **Bachelor of Engineering Science**

Qualification for this award requires the successful completion of 240 credit points, which include the subjects listed in the recommended sequence below.

\* All students undertaking the Bachelor of Engineering Science are required to enrol in MATH 1021 Mathematics for Engineers Preliminary and undertake a readiness test at the beginning of their study.

The readiness test will be conducted at the beginning of the first semester of enrolment and the result will be used to determine whether a student will remain in MATH 1021 Mathematics for Engineers Preliminary or be transferred by the School to MATH 1016 Mathematics for Engineers 1.

Students remaining in MATH 1021 Mathematics for Engineers Preliminary will be required to complete MATH 1016 Mathematics for Engineers 1 during second semester and will be encouraged to complete MATH 1019 Mathematics for Engineers 2 during the Summer session.

Students who finish MATH 1021 Mathematics for Engineers Preliminary will then use this subject as an elective.

#### Start-year intake

Course	Title	Credit	
Voor 1		Points	
Year I			
ENCP 1011	Engineering Physics	10	
PROC 1006	Materials Engineering Fundamentals	10	
ENGB 1024	Introduction to Engineering Practice	10	
EINON 1024 IIILIOUUCIOII to Engineering Practice			
MATH 1021	Mathematics for Engineers Preliminary	10	
MATH 1016	Mathematics for Engineers 1		
WATH TOTO			
Spring cossion	Clean Points	40	
ENCR 1018	Fundamentals of Mechanics	10	
PROC 1008	Introduction to Materials Engineering	10	
ELEC 1002	Electrical Eurodamentals	10	
Select one of the fo	llowing:	10	
	Mathematics for Engineers 1	10	
MATH 1010	Mathematics for Engineers 7		
MATHIOTS	Credit Deinte	40	
Voor 2	Clear Forms	40	
Autumn cossion			
	Machanics of Materials	10	
MECH 2003	Engineering Computing	10	
	Materiale Selection and Design	10	
FNOC 2003	Specialization Workshop 1	10	
ENGR 3029		10	
Crating accessor	Credit Points	40	
	Payament Materials and Design	10	
	Sustainability Analysis and Design	10	
	Advanced Machanics of Materials	10	
ENCE 2020	Specialization Workshop 2	10	
Industrial Experience		10	
	Industrial Experience (Engineering	0	
LINGH 2055	Technologist)	0	
	Credit Points	40	
Year 3			
Autumn session			
ENGR 3013	Engineering Science Project 1	10	
PROC 3008	Materials Processing and Applications	10	
MECH 2001	Kinematics and Kinetics of Machines	10	
Select one elective		10	
Elective must b	e Level 2 or higher		
	Credit Points	40	
Spring session			
ENGR 3014	Engineering Science Project 2	10	
PROC 4001	Advanced Materials Topics	10	
CIVL 3020	Sustainable Waste Engineering	10	
Select one elective 1			
Elective must be Level 2 or higher			

Credit Points	40
Total Credit Points	240

#### **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 - Introduction to Materials Engineering

#### Mid-year intake

Course	Title	Credit Points
Year 1		
Spring session		
Select one of the foll	owing:	10
MATH 1021	Mathematics for Engineers Preliminary	
MATH 1016	Mathematics for Engineers 1	
ENGR 1018	Fundamentals of Mechanics	10
PROC 1008	Introduction to Materials Engineering	10
ELEC 1003	Electrical Fundamentals	10
	Credit Points	40
Autumn session		
Select one of the foll	owing:	10
MATH 1019	Mathematics for Engineers 2	
MATH 1016	Mathematics for Engineers 1	
ENGR 1024	Introduction to Engineering Practice	10
ENGR 1011	Engineering Physics	10
PROC 1006	Materials Engineering Fundamentals	10
	Credit Points	40
Vear 2		10
Spring session		
	Suctainability Analysis and Dasign	10
ENCR 2016	Devement Materials and Design	10
ENGR 2010	Pavement Materials and Design	10
ENGR 3029	Specialisation workshop I	10
Select one elective		10
<ul> <li>Elective must be</li> </ul>	Level 2 or higher	
	Credit Points	40
Autumn session		
PBOC 2003	Materials Selection and Design	10
MECH 2003	Mechanics of Materials	10
ELEC 1006	Engineering Computing	10
ENGR 3030	Specialisation Workshop 2	10
Inductrial Experience		10
	Industrial Experience (Engineering	0
ENGN 2033	Technologist)	0
	Credit Points	40
Voor 2	creat rollins	40
Spring accesion		
Spring session	Engineering Colonge Decidet 1	10
ENGR 3013	Engineering Science Project 1	10
PROC 4001	Advanced Materials Topics	10
CIVL 3020	Sustainable Waste Engineering	10
MECH 3002	Advanced Mechanics of Materials	10
	Credit Points	40
Autumn session		
ENGR 3014	Engineering Science Project 2	10
PROC 3008	Materials Processing and Applications	10
MECH 2001	Kinematics and Kinetics of Machines	10
Select one elective		10

· Elective must be Level 2 or higher

Credit Points	40
Total Credit Points	240

#### **Equivalent Subjects**

The subjects listed below count towards completion of this program for students who passed these subjects in Autumn 2022 or earlier.

ENGR 1008 - Engineering Materials, replaced by PROC 1008 -Introduction to Materials Engineering

# **Related Programs**

Bachelor of Engineering (Honours)/Bachelor of Business (3728) (https://hbook.westernsydney.edu.au/archives/2022-2023/programs/ bachelor-engineering-honours-bachelor-business/)

Bachelor of Engineering (Honours) (3740) (https://

hbook.westernsydney.edu.au/archives/2022-2023/programs/bachelorengineering-honours/)

Bachelor of Engineering Science (3691) (https://

hbook.westernsydney.edu.au/archives/2022-2023/programs/bachelorengineering-science/)