

BE in Electrical Engineering (Hons) /Master of Engineering**(Program code: 3736 Plan code: ELECBH3736)**

Duration: 5 years - Total 240uoc are required to the completion of this integrated degree program.

Course (each 6uoc)	Course Name	Pre-requisite course passed	
Year 1/Session 1			
Math1141	Higher Maths 1A		
Phys1131	Higher Physics 1A		
Elec2141	Digital Circuit Design		
Elec1111	Electrical & Telecommunications Eng		
Year 1/Session 2			
Math1241	Higher Maths 1B	Math1141	
Phys1231	Higher Physics 1B	Phys1131	
Comp1511	Introduction to Programming		
Engg1000	Introduction to Eng Design & Innovation		
Year 2/Session 1			
Math2069	Maths 2A	Math1241	
Elec2117	Electrical System Design Project	Elec1111 & Elec2141 & Comp1511	
Elec2134	Circuits and Signals	Elec1111	
GE course or Minor	6uoc of GE or Minor(Broadening Discipline)		
Year 2/Session 2			
Math2099	Maths2B	Math1231 or Math1241	
Elec2142	Embedded Systems Design	Elec2141 & Comp1511	
Elec2133	Analogue Electronics	Elec2134	
GE course or Minor	6uoc of GE or Minor(Broadening Discipline)		
Year 3/Session 1			
Elec3115	Electromagnetic Engineering	Phys1231 and Math2069	
Minor	6uoc from Minor stream		
Elec3104	Digital Signal Process	Elec2134	
Minor	6uoc from Minor (Broadening Discipline)		
Year 3/Session 2			
Elec3105	Electrical Energy	Elec3115 and Elec2134	
Elec3114	Control Systems	Elec2134	
Elec3117	Electrical Engineering Design	Elec2133	
L3 elective	Choose from L3 elective list		
Year 4/Session 1			
From 2019, ELEC4120/4121 are replaced by ELEC4951/4952/4953			
Elec4120	Thesis A	Elec3117 and 120uoc passed	
Elec4123	Electrical Design Proficiency	Passed all L3 core courses	
L4 elective	6uoc from L4 elective list	pre-requisite shown in L4 elective list	
L4 elective	6uoc from L4 elective list	pre-requisite shown in L4 elective list	
Year 4/Session 2			
Elec4121	Thesis B	Elec4120	
Elec4122	Strategic Leadership and Ethics	Passed 120uoc	
L4 elective	6uoc from L4 elective list	pre-requisite shown in L4 elective list	
Minor	6uoc from Minor (Broadening Discipline)		
Year 5/Session 1			
From 2019, ELEC9120/9121 are replaced by ELEC9451/9452/9453			
Elec9120	ME Project A		
Gsoe9xxx	6uoc from Technical Management lists		

L5 Elective	6uoc from L5 elective list		
L5 Elective	6uoc from L5 elective list		
Year 5/Session 2			
Elec9121	ME Project B		
Minor	6uoc from Minor (Broadening Discipline)		
L5 Elective	6uoc from L5 elective list		
L5 Elective	6uoc from L5 elective list		

L3 elective courses list

Elec3106	Electronics	Pre-requisite: Elec2133 & Elec2141
Elec3111	Distributed Energy Generation	Pre-requisite: Elec2134
Elec3145	Real Time Instrumentation	Pre-requisite: Comp1511 & Elec2134
Elec2146	Engineering Modelling and Simulation	Pre-requisite: Comp1511 & Elec2134
Elec3705	Fundamentals of Quantum Engineering	Pre: Math2099 & (Phys1231 or Phys1221)
Comp2041	Software Construction	Pre-requisite: Comp1511 or C1921 or C1917
Tele3118	Network Technologies	Pre-requisite: Elec2142
Tele3113	Analogue and Digital Communications	Pre-requisite: Elec2134
Tele3119	Trusted Networks	Pre-requisite: Tele3118
Math3411	Information, Codes and Ciphers	
Math3101	Computational Mathematics	Pre-requisite: Math2069 & Math2099
Math3121	Mathematical Methods and Partial Differential Equations	Pre-requisite: Math2069 & Math2099
Math3161	Optimization	Pre-requisite: Math2069 & Math2099
Math3201	Dynamical Systems and Chaos	Pre-requisite: Math2069 & Math2099
Math3261	Fluids, Oceans and Climate	Pre-requisite: Math2069 & Math2099
Comp3211	Computer Architecture	Pre-requisite: Elec2141 or Comp3222
Comp3231	Operating Systems	Pre-requisite: (Comp1521 or Comp2121) & (Elec2142 or Comp2521)

L4 elective courses list

	Microelectronics	
Elec4601	Digital and Embedded Systems	Pre-requisite: Elec3106
Elec4602	Microelectronics Design and Technology	Pre-requisite: Elec3106
Elec4603	Solid-State Electronics	Pre-requisite: Elec2133
Elec4604	RF Electronics	Pre-requisite: Elec3106
Elec4605	Quantum Devices and Computers	Pre-requisite: Elec3705
	Energy Systems	
Elec4611	Power System Equipment	Pre-requisite: Elec3105
Elec4612	Power System Analysis	Pre-requisite: Elec3105
Elec4613	Electrical Drive Systems	Pre-requisite: Elec3105
Elec4614	Power Electronics	Pre-requisite: Elec2133
Elec4617	Power System Protection	Pre-requisite: Elec4612

	<i>Signal Processing</i>	
Elec4621	Advanced Digital Signal Processing	Pre-requisite: Elec3104
Elec4622	Multimedia Signal Processing	Pre-requisite: Elec3104
Elec4623	Biomedical Instrumentation, Measurement and Design	Pre-requisite: Elec3104
	<i>Systems and Control</i>	
Elec4631	Continuous-Time Control System Design	Pre-requisite: Elec3114
Elec4632	Computer Control Systems	Pre-requisite: Elec3114
Elec4633	Real Time Engineering	Pre-requisite: Elec3114
	<i>Data and Mobile Communications</i>	
Tele4651	Wireless Communication Technologies	Pre-requisite: Tele3113
Tele4652	Mobile and Satellite Communication Systems	Pre-requisite: Tele3113
Tele4653	Digital Modulation and Coding	Pre-requisite: Tele3113
Tele4642	Network Performance	Pre-requisite: Tele3118
	<i>Photonics</i>	
Phtn4661	Optical Circuits and Fibres	Pre-requisite: Elec3115
Phtn4662	Photonic Networks	Pre-requisite: Tele3113
	<i>Business Administration</i>	
Elec4445	Entrepreneurial Engineering	Pre-requisite: 132 uoc

L5 Elective Courses List

Elec9701 Mixed Signal Microelectronic Design
 Elec9702 Radio Frequency Integrated Circuits
 Elec9703 Microsystems Design and Technology
 Elec9704 VLSI Technology
 Elec9705 Quantum Devices
 Elec9711 Power Electronics for Renewable & Distributed Generation
 Elec9712 High Voltage Systems
 Elec9713 Industrial and Commercial Power
 Elec9714 Electricity Industry Planning
 Elec9715 Electricity Industry Operation
 Elec9716 Electrical Safety
 Elec9721 Digital Signal Processing Theory
 Elec9722 Digital Image Processing
 Elec9723 Speech Processing
 Elec9724 Audio and Electroacoustics
 Elec9725 Satellite Navigation
 Elec9731 Robust and Linear Control Systems
 Elec9732 Analysis and Design of Non-linear
 Elec9733 Real Computing and Control
 Elec9734 Biomedical Instrumentation & Informatics
 Tele9751 Switching Systems Architecture
 Tele9752 Network Operations & Control
 Tele9753 Advanced Wireless Communications
 Tele9754 Coding & Information Theory
 Tele9755 Microwave Circuits, Theory & Techniques
 Tele9756 Advanced Networks

Tele9757 Quantum Communications
Gsoe9758 Network Systems Architecture

Technical Management courses list

Gsoe9420 Project Management
Gsoe9747 Successful Innovation
Gsoe9820 Project Management

Notes:

For further information regarding the 3736 program rules, please view:

<http://www.handbook.unsw.edu.au/undergraduate/programs/2018/3736.html>

Regarding Minor streams and minor courses (Broadening Discipline) selection rules, please view:

<https://www.engineering.unsw.edu.au/electrical-engineering/resources/undergraduate-resources/be-me-program>

If your minor courses (Broadening Discipline) courses are from within Faculty of Engineering, you are required to do 12uoc of GE courses from other faculties instead of 12uoc broadening discipline courses.

All students are required to undertake 60 full days of mandatory industrial training. Each student is personally responsible for arranging and completing the compulsory industrial training. Please view the details information in this site:

<https://www.engineering.unsw.edu.au/electrical-engineering/resources/shared-resources/industrial-training>

Not all courses are offered in both sessions. You need to view the timetable website to find out each course's availability in each session:

<https://www.engineering.unsw.edu.au/electrical-engineering/timetables>