

## Bachelor of Engineering LBIF (2012)

Note: First year common to all streams

Program Code: LBIF	Area + Cat No	Units	School code(s)
<b>Year 1</b>			
<b>Period 2</b>			
Mathematical Methods for Engineers 1	MATH 1063	4.5	MAT
Engineering Materials	RENG 1005	4.5	NBE
Computer Techniques	COMP 1036	4.5	CIS/AME
Sustainable Engineering Practice	ENGG 1003	4.5	NBE
<b>Period 5</b>			
Mathematical Methods for Engineers 2	MATH 1064	4.5	MAT
Electrical and Energy Systems	EEET 1025	4.5	EIE
Mechanics and Physics	EEET 1024	4.5	EIE/AME
Engineering Design and Innovation	ENGG 1004	4.5	AME

Stream G: Electrical and Electronic			
Program Code: LBIF	Area + Cat No	Units	School code
<b>Year 2</b>			
<b>Period 2</b>			
Mechanical Engineering Practice N OR Programming for Engineers	MENG 2009 COMP 1041	4.5	AME CIS
Electrical Circuit Theory	EEET 1003	4.5	EIE
Analog and Digital Electronic Fundamentals	EEET 2043	4.5	EIE
Calculus 3	MATH 2026	4.5	MAT
<b>Period 5</b>			
Principles of Computer Systems	EEET 1007	4.5	EIE
Electronic Devices and Circuits	EEET 2018	4.5	EIE
Electromechanics OR Programming Fundamentals	EEET 2044 EEET 1040	4.5	EIE CIS
Methods of Applied Mathematics 1	MATH 2028	4.5	MAT
<b>Year 3</b>			
<b>Period 2</b>			
Computer Hardware OR IT Physics	EEET 2022 PHYS 2001	4.5 4.5	EIE EIE
Signals and Systems	EEET 3041	4.5	EIE
Elective 1	EEET xxxx	4.5	EIE
Elective 2	EEET xxxx	4.5	EIE
<b>Period 5</b>			
Elective 3	EEET xxxx	4.5	EIE
Elective 4	EEET xxxx	4.5	EIE
Elective 5	EEET xxxx	4.5	EIE
Elective 6 OR Professional Engineering Practice E	EEET xxxx EEET 3033	4.5	EIE
<b>Year 4</b>			
<b>Period 2</b>			
Professional Engineering Practice E	EEET 3033	4.5	EIE
Structured Engineering Work Placement	EEET 5139	13.5	EIE
<b>Period 5</b>			
Elective 8	EEET xxxx	4.5	EIE
Elective 9	EEET xxxx	4.5	EIE
EIE Project 2/2H	EEET 4050/ 4051	9.0	EIE

## Rules

The courses Elective 1 to Elective 9 must be chosen to satisfy the following conditions: (a) One 4.5-unit course freely chosen by the student from any School or Division within the University of South Australia. (b) Students may not choose more than one Level 2 elective course from Schedules A or B on the EIE School web page. (c) Students must choose at least two Electrical Engineering elective courses from Schedule A on the EIE School web page, including one at Level 4 or 5. (d) Students must choose at least two Electronic Engineering elective courses from Schedule B on the EIE School web page, including one at Level 4 or 5. (e) Students who choose to take Structured Engineering Work placement EEET 5139 do not take Elective 7. (f) As one of the electives students must choose EITHER Engineering Systems Thinking N EEET 3043 OR Systems Engineering EEET 3034.

## Notes

1. The order or study period in which courses are undertaken may be varied, depending on their availability and the satisfaction of prerequisites.
2. Students may elect to complete a major as part of their program. The list of available majors is provided on the EIE School web page. (See link in the program content section above). In selecting a major, students are encouraged to consult with the Program Director. To satisfactorily complete a major, students must complete at least 36 units worth of courses related to that major comprised of: a) Three elective courses from Schedule C associated with the chosen major including two Level 4 or 5 courses b) Electrical and Electronic Engineering Project 2 or Honours Project 2, AND EITHER c) Structured Engineering Work Placement EEET 5139, OR d) Electrical and Electronic Engineering Project 1 AND Practical Industrial Experience Reports EEET 3031, AND an additional elective course (Elective 7) associated with the chosen major.
3. All students must complete a minimum of 12 weeks industrial experience in a relevant industry prior to graduation. Students may meet this requirement through the successful completion of either Structured Engineering Work Placement EEET 5139 or Practical Industrial Experience Reports EEET 3031. Assessment in the course Practical Industrial Experience Reports will remain incomplete until the student submits a written report and receives a pass.
4. Students who complete four level 4 or 5 courses from an available masters specialisation may gain credit for those four courses if they successfully apply to enter the LMEE Master of Engineering in the associated specialisation - (Computer Systems Engineering), (Electrical Power Engineering), (Microsystems Technology), (Systems Engineering), (Telecommunications) or (Test and Evaluation).
5. Professional Engineering Practice E is designed to prepare students for their practical industrial experience. Students intending to enrol in Structured Engineering Work Placement are encouraged to enrol in the intensive mode version of Professional Engineering Practice E in the same study period. Students not intending to enrol in

Structured Engineering Work Placement are encouraged to enrol in Professional Engineering Practice E in the second half of third year.

6. Students are not permitted to enrol directly into Electrical and Electronic Engineering Honours Project 2. They will be invited to transfer into this once they have met the criteria for entry to the degree with honours.

<b>Schedule A: Electrical Engineering Electives*</b>		
<b>The list of courses below is indicative only. Not all courses are available in all years. The list of available electives is posted on the EIE School web page each year during enrolment time at <a href="http://www.unisa.edu.au/eie">www.unisa.edu.au/eie</a>. Availability is contingent on sufficient enrolment.</b>		
Level	Course Code	Course Title
2	EEET 2044	Electromechanics
2	MENG 2009	Mechanical Engineering Practice N
3	EEET 2022	Computer Hardware
3	EEET 3032	Electromotion
3	PHYS 2002	IT Physics
3	EEET 3008	Mechatronics 1
3	EEET 3040	Real-Time Systems and Control
3	EEET 3041	Signals and Systems
3	EEET 3035	Solar Technologies
3	EEET 3XXX	Engineering Systems Thinking
3	EEET 3XXX	Systems Engineering N
4	EEET 4058	Digital Signal Processing
4	EEET 4059	Intelligent and Digital Control
4	EEET 4060	Mechatronics 2
4	EEET 3016	Power Electronics and Drives
5	EEET 5030	Advanced Power Electronics
5	EEET 5009	Dynamics of Electrical Machines
4	EEET 4057	Electrical Power Systems
4	EEET 4053	Electromagnetic Compatibility
5	EEET 5034	Power System Operation and Control
5	EEET 5012	Renewable Energy Systems
4	EEET 4044	Virtual Instrumentation Programming

\* Other courses, with the approval of the Program Director

<b>Schedule B: Electronic Engineering Electives*</b>		
<b>The list of courses below is indicative only. Not all courses are available in all years. The list of available electives is posted on the EIE School web page each year during enrolment time at <a href="http://www.unisa.edu.au/eie">www.unisa.edu.au/eie</a>. Availability is contingent on sufficient enrolment.</b>		
Level	Course Code	Course Title
2	COMP 1041	Programming for Engineers
2	COMP 1040	Programming Fundamentals
3	EEET 3025	Computer Communications and Networks
3	EEET 2022	Computer Hardware
3	EEET 3042	Computer Hardware Design
3	COMP 2012	Data Structures
3	EEET 3038	Digital Devices and Systems
3	EEET 3028	Introduction to Communication Systems
3	PHYS 2002	IT Physics

3	PHYS 3001	Lasers and Optics
3	EEET 3036	Lasers, Optoelectronics and Applications
3	PHYS 3004	Modern Physics
3	EEET 3037	Optical Materials and Applications
3	EEET 3040	Real-Time Systems and Control
3	EEET 3041	Signals and Systems
3	EEET 3035	Solar Technologies
3	EEET 3XXX	Engineering Systems Thinking
3	EEET 3XXX	Systems Engineering N
4	EEET 4058	Digital Signal Processing
4	EEET 4062	Electronic Filters and Amplifiers
4	EEET 4059	Intelligent and Digital Control
4	EEET 4032	Advanced Internet Technology
4	EEET 4055	Digital Image Processing and Computer Vision
5	EEET 5126	Digital Receiver Techniques
4	EEET 4053	Electromagnetic Compatibility
5	EEET 5099	Error Control Coding G
5	EEET 5101	Information Theory G
4	EEET 4047	Introduction to Microelectromechanical Systems
4	EEET 4056	Knowledge-Based Paradigms and their Engineering Applications
4	EEET 4061	Microengineering Technology
5	EEET 5102	Mobile Communications Fundamentals G
4	EEET 4036	Modern Communication Systems
4	NASC 3013	Nanofabrication and Microfluidics
4	NASC 3012	Nanoparticles and Assembly
4	EEET 4046	Optical Communications G
5	EEET 5103	Radio Technology Fundamentals G
5	EEET 5104	Satellite Communications G
4	EEET 4041	Speech Processing G
4	EEET 4031	System Design Techniques
4	EEET 4035	Telecommunication Networks M
4	EEET 4044	Virtual Instrumentation Programming
4	EEET 4045	VLSI Design G
4	EEET 4054	WCDMA for Third Generation Mobile Communications G

\* Other courses, with the approval of the Program Director

#### **Schedule C: Electives in specified Majors**

**The list of courses within each major is indicative only. Not all courses are available in all years. The list of available electives is posted on the EIE School web page each year during enrolment time at [www.unisa.edu.au/eie](http://www.unisa.edu.au/eie). Availability is contingent on sufficient enrolment.**

#### **Major in Computer Systems Engineering\***

<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
3	EEET 3025	Computer Communications and Networks
3	EEET 2022	Computer Hardware
3	EEET 3042	Computer Hardware Design
3	COMP 2012	Data Structures
3	EEET 3038	Digital Devices and Systems
3	EEET 3040	Real-Time Systems and Control
4	EEET 4058	Digital Signal Processing

5	EEET 4032	Advanced Internet Technology
5	EEET 4055	Digital Image Processing and Computer Vision
5	EEET 4053	Electromagnetic Compatibility
5	EEET 4056	Knowledge-Based Paradigms and their Engineering Applications
5	EEET 4031	System Design Techniques
5	EEET 4035	Telecommunication Networks M
5	EEET 4044	Virtual Instrumentation Programming
5	EEET 4045	VLSI Design G
* Other courses, with the approval of the Program Director		
* The course COMP 2012 Data Structures is required within this major		
<b>Major in Electrical Power Engineering*</b>		
<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
3	EEET 3040	Real-Time Systems and Control
4	EEET 4060	Mechatronics 2
5	EEET 5030	Advanced Power Electronics
5	EEET 5009	Dynamics of Electrical Machines
5	EEET 4057	Electrical Power Systems
5	EEET 4053	Electromagnetic Compatibility
5	EEET 5034	Power System Operation and Control
5	EEET 5012	Renewable Energy Systems
5	EEET 4044	Virtual Instrumentation Programming
* Other courses, with the approval of the Program Director		
<b>Major in Electrical and Mechatronic Engineering*</b>		
<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
3	EEET 2022	Computer Hardware
3	EEET 3032	Electromotion
3	PHYS 2002	IT Physics
3	EEET 3008	Mechatronics 1
3	EEET 3040	Real-Time Systems and Control
4	EEET 4059	Intelligent and Digital Control
4	EEET 4060	Mechatronics 2
4	EEET 3016	Power Electronics and Drives
5	EEET 4057	Electrical Power Systems
* Other courses, with the approval of the Program Director		
<b>Major in Electronics and Communications*</b>		
<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
3	EEET 3025	Computer Communications and Networks
3	EEET 2022	Computer Hardware
3	COMP 2012	Data Structures
3	EEET 3038	Digital Devices and Systems
3	EEET 3028	Introduction to Communication Systems
3	PHYS 2002	IT Physics
3	EEET 3040	Real-Time Systems and Control
4	EEET 4058	Digital Signal Processing
4	EEET 4062	Electronic Filters and Amplifiers
5	EEET 4061	Microengineering Technology

5	EEET 4036	Modern Communication Systems
5	EEET 4035	Telecommunication Networks M
5	EEET 4045	VLSI Design G
* Other courses, with the approval of the Program Director		
<b>Major in Electronics and Microengineering*</b>		
<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
2	PHYS 2003	Computational Physics 1
2	PHYS 2005	Computational Physics 2
3	EEET 3025	Computer Communications and Networks
3	EEET 2022	Computer Hardware
3	COMP 2012	Data Structures
3	EEET 3038	Digital Devices and Systems
3	EEET 3028	Introduction to Communication Systems
3	PHYS 2002	IT Physics
3	EEET 3040	Real-Time Systems and Control
4	EEET 4058	Digital Signal Processing
4	EEET 4053	Electromagnetic Compatibility
4	EEET 4062	Electronic Filters and Amplifiers
4	EEET 4047	Introduction to Microelectromechanical Systems
4	EEET 4061	Microengineering Technology
4	NASC 3013	Nanofabrication and Microfluidics
4	NASC 3012	Nanoparticles and Assembly
4	EEET 4045	VLSI Design G
* Other courses, with the approval of the Program Director		
<b>Major in Telecommunications*</b>		
<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
3	EEET 3025	Computer Communications and Networks
3	EEET 2022	Computer Hardware
3	COMP 2012	Data Structures
3	EEET 3038	Digital Devices and Systems
3	EEET 3028	Introduction to Communication Systems
3	PHYS 2002	IT Physics
3	EEET 3040	Real-Time Systems and Control
4	EEET 4032	Advanced Internet Technology
4	EEET 4058	Digital Signal Processing
4	EEET 4036	Modern Communication Systems
4	EEET 4046	Optical Communications G
4	EEET 4041	Speech Processing G
4	EEET 4031	System Design Techniques
4	EEET 4035	Telecommunication Networks M
4	EEET 4054	WCDMA for Third Generation Mobile Communications G
5	EEET 5126	Digital Receiver Techniques
5	EEET 5099	Error Control Coding G
5	EEET 5101	Information Theory G
5	EEET 5102	Mobile Communications Fundamentals G

5	EEET 5103	Radio Technology Fundamentals G
5	EEET 5104	Satellite Communications G
* Other courses, with the approval of the Program Director		
<b>Major in Networking and Communications*</b>		
<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
3	EEET 3025	Computer Communications and Networks
3	EEET 2022	Computer Hardware
3	EEET 3042	Computer Hardware Design
3	EEET 3038	Digital Devices and Systems
3	EEET 3028	Introduction to Communication Systems
3	PHYS 2002	IT Physics
3	EEET 3040	Real-Time Systems and Control
4	EEET 4032	Advanced Internet Technology
4	EEET 4058	Digital Signal Processing
4	EEET 4036	Modern Communication Systems
4	EEET 4031	System Design Techniques
4	EEET 4035	Telecommunication Networks M
* Other courses, with the approval of the Program Director		
<b>Major in Optical and Electronic Engineering*</b>		
<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
3	PHYS 3002	Applied Physics Project A
3	EEET 2022	Computer Hardware
3	PHYS 2002	IT Physics
3	PHYS 3001	Lasers and Optics
3	EEET 3036	Lasers, Optoelectronics and Applications
3	PHYS 3004	Modern Physics
3	EEET 3037	Optical Materials and Applications
3	EEET 3035	Solar Technologies
4	EEET 4062	Electronic Filters and Amplifiers
4	EEET 4047	Introduction to Microelectromechanical Systems
4	EEET 4061	Microengineering Technology
4	EEET 4046	Optical Communications G
* Other courses, with the approval of the Program Director		
<b>Major in Systems Engineering*</b>		
<b>Level</b>	<b>Course Code</b>	<b>Course Title</b>
3	EEET 3XXX	Engineering Systems Thinking
3	EEET 3XXX	Systems Engineering N
4	EEET 4052	Principles of Systems Engineering
4	EEET 4031	System Design Techniques
5	EEET 5118	Modelling Simulation for Systems Engineering
5	EEET 5047	Principles of Test and Evaluation N
5	EEET 5106	Requirements Engineering
5	EEET 5042	Systems Engineering Analysis 1
5	EEET 5070	Systems Engineering Management
5	EEET 5043	Systems Engineering Practice 1
* Other courses, with the approval of the Program Director		

