

BRC Bachelor of Engineering (Computer Engineering) and 2nd Major in Business Curriculum

4-year BEng (CE) Programme and 2nd Major in Business

AU requirements

Type	Total No. of AUs
Depth (Core)	96
Breadth (GER-Core)	12
Unrestricted Electives	4
Business Major (Foundation Courses + Track Courses)	27 + 12 = 39
Grand Total	151

Option 1: 10-week Professional Attachment (PA)

Course Code and Title	Type (i.e. Core/ Core elective/ GER core/ GER elective/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
YEAR 1 SEMESTER 1							
CE1011 Engineering Mathematics I	Core	2	1	1 ⁺	4	3	-
CE1012 Engineering Mathematics II	Core	2	1	1 ⁺	4	3	CE1011 (can be taken concurrently)
CE1003 Introduction to Computational Thinking	Core	2	1	1	4	3	-
CE1004 Inventions and Innovations in Computing	Core	1	1	1 ⁺	2	2	-
HW0188^ Effective Communication	GER core	2	-	-	2	2	
HW0001 English Proficiency	GER core					0	
AD1101 Financial Accounting	Core (Bus)	3	1	-	4	4	-
AB1201 Financial Management	Core (Bus)	2	1	-	3	3	-
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GER core					1	Online course
TOTAL		14	6	1+3⁺	27	21	
YEAR 1 SEMESTER 2							
CE1005 Digital Logic	Core	2	1	1	4	3	-
CE1006 Computer Organisation and Architecture	Core	2	1	1	4	3	CE1005 (can be taken concurrently)
CE1007 Data Structures	Core	2	1	1	4	3	CE1003
MH1812 Discrete Mathematics	Core	2	1	1 ⁺	3	3	-
AB1501 Marketing	Core (Bus)	2	1	-	3	3	-
BE1401 Business Operations and	Core (Bus)	3	1	-	4	4	-

Processes							
ML0001 Absolute Basics for Career by MLCPS (Margaret Lien Centre for Professional Success)	GER Core					1	Online course
TOTAL		13	6	3+1⁺	22	20	

^Should there be insufficient vacancies, students will take Eng Comm I & II in the following semester.

Course Code and Title	Type (i.e. Core/ Core elective/ GER core/ GER elective/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
YEAR 2 SEMESTER 1							
CE2001 Algorithms	Core	2	1	1 ⁺	4	3	CE1007, CE1012, MH1812
CE2002 Object Oriented Design & Programming	Core	2	1	1	4	3	CE1007
CE2003 Digital Systems Design	Core	2	1	1	4	3	CE1005
CE2004 Circuits and Signal Analysis	Core	2	1	1	4	3	CE1012
CE2005 Operating Systems	Core	2	1	1	4	3	CE1007
AD2101 Management Accounting	Core (Bus)	3	1	-	4	4	
GC0002 Ethics & Moral Reasoning	GER core					1	Online course
TOTAL		13	6	4+1⁺	24	20	
YEAR 2 SEMESTER 2							
CE2006 Software Engineering	Core	2	1	1	4	3	CE2002 (can be taken concurrently)
CE2007 Microprocessor-based Systems Design	Core	2	1	1	4	3	CE1006, CE2004 (can be taken concurrently)
CE3001 Advanced Computer Architecture	Core	2	1	1	4	3	CE1006
CE3002 Sensors, Interfacing and Control	Core	2	1	1	4	3	CE2004
HW0288 Engineering Communication II	GER core	2	-	-	2	2	
AB0901 Principles of Economics: A Singapore Perspective	Core (Bus)	2	1	-	3	3	
TOTAL		12	5	4	21	17	

Course Code and Title	Type (i.e. Core/ Core elective/ GER core/ GER elective/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
YEAR 3 SEMESTER 1							
CE3003 Microcontroller Programming	Core	2	1	1	4	3	CE2005
CE3004 Multidisciplinary Design Project	Core	1	-	3	4	4	Year standing 3
CE3005 Computer Networks	Core	2	1	1	4	3	CE1011, CE1012
CE0001 Engineers & Society	GER core	2	1	-	3	3	
AB1301 Business Law	Core (Bus)	2	1	-	3	3	
GC0003 Entrepreneurship & Innovation	GER core					1	
TOTAL		9	4	5	18	17	
YEAR 3 SEMESTER 2							
CE3007 Digital Signal Processing	Core	2	1	1	4	3	CE2004
CE3006 Digital Communications	Core	2	1	1	4	3	CE1011, CE2004
Technical Elective 1 (CZ200x or CZ300x)	Core elective	2	1	1	4	3	
AB1601 Organisational Behaviour and Design	Core (Bus)	2	1	-	3	3	
Unrestricted Elective	Unrestricted elective	2	1	-	3	3	
Unrestricted Elective	Unrestricted elective	1	-	-	1	1	
ML0002 Career Power Up! by MLCPS	GER Core					1	Online course
CE3026 Professional Attachment	Core	-	-	-	-	4	
TOTAL		11	5	3	19	21	

Course Code and Title	Type (i.e. Core/ Core elective/ GER core/ GER elective/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
YEAR 4 SEMESTER 1							
CE4079 Final Year Project	Core	-	-	-	-	-	
CE4xxx Technical Elective 2	Core elective	2	1	1	4	3	
CE4xxx Technical Elective 3	Core elective	2	1	1	4	3	
CE4xxx Technical Elective 4	Core elective	2	1	1	4	3	
Bus Track Course 1*	Track course (Bus)	2	1	-	3	3	
Bus Track Course 2*	Track course (Bus)	2	1	-	3	3	
TOTAL		10	5	3	18	15	
YEAR 4 SEMESTER 2							
CE4079 Final Year Project	Core	-	-	-	-	8	
CE4xxx Technical Elective 5	Core elective	2	1	1	4	3	
CE4xxx Technical Elective 6	Core elective	2	1	1	4	3	
Bus Track Course 3*	Track course (Bus)	2	1	-	3	3	
Bus Track Course 4*	Track course (Bus)	2	1	-	3	3	
TOTAL		8	4-	2	14	20	
GRAND TOTAL (Years 1 to 4)						151	

* An additional 10 hours per semester have been allocated for these non-lab based courses for Example Classes. Faculty can use these time slots for their pedagogical needs such as to reinforce concepts, provide additional coaching, give more worked examples, allow students to do practice exercises or do research or work on the computers etc.

*12 AUs of track courses will comprise 3 to 4 courses depending on the tracks chosen

Option 2: 20-week Professional Internship (PI)

Course Code and Title	Type (i.e. Core/ Core elective/ GER core/ GER elective/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
YEAR 1 SEMESTER 1							
CE1011 Engineering Mathematics I	Core	2	1	1 ⁺	4	3	-
CE1012 Engineering Mathematics II	Core	2	1	1 ⁺	4	3	CE1011 (can be taken concurrently)
CE1003 Introduction to Computational Thinking	Core	2	1	1	4	3	-
CE1004 Great Ideas in Computing	Core	1	1	1 ⁺	3	2	-
HW0188 [^] Effective Communication	GER core	2	-	-	2	2	
HW0001 English Proficiency	GER core					0	
AD1101 Financial Accounting	Core (Bus)	3	1	-	4	4	-
AB1201 Financial Management	Core (Bus)	2	1	-	3	3	-
GC0001 Introduction to Sustainability: Multidisciplinary Approaches and Solutions	GER core					1	Online course
TOTAL		14	6	1+3⁺	27	21	
YEAR 1 SEMESTER 2							
CE1005 Digital Logic	Core	2	1	1	4	3	-
CE1006 Computer Organisation and Architecture	Core	2	1	1	4	3	CE1005 (can be taken concurrently)
CE1007 Data Structures	Core	2	1	1	4	3	CE1003
MH1812 Discrete Mathematics	Core	2	1	1 ⁺	3	3	-
AB1501 Marketing	Core (Bus)	2	1	-	3	3	-
BE1401 Business Operations and Processes	Core (Bus)	3	1	-	4	4	-
ML0001 Absolute Basics for Career by MLCPS (Margaret Lien Centre for Professional Success)						1	Online course
TOTAL		13	6	3+1⁺	22	20	

[^]Should there be insufficient vacancies, students will take Eng Comm I & II in the following semester.

Course Code and Title	Type (i.e. Core/ Core elective/ GER core/ GER elective/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
YEAR 2 SEMESTER 1							
CE2001 Algorithms	Core	2	1	1 ⁺	4	3	CE1007, CE1012, MH1812
CE2002 Object Oriented Design & Programming	Core	2	1	1	4	3	CE1007
CE2003 Digital Systems Design	Core	2	1	1	4	3	CE1005
CE2004 Circuits and Signal Analysis	Core	2	1	1	4	3	CE1012
CE2005 Operating Systems	Core	2	1	1	4	3	CE1007
AD2101 Management Accounting	Core (Bus)	3	1	-	4	4	
GC0002 Ethics & Moral Reasoning	GER core					1	Online course
TOTAL		15	6	4+1⁺	24	20	
YEAR 2 SEMESTER 2							
CE2006 Software Engineering	Core	2	1	1	4	3	CE2002 (can be taken concurrently)
CE2007 Microprocessor-based Systems Design	Core	2	1	1	4	3	CE1006, CE2004 (can be taken concurrently)
CE3001 Advanced Computer Architecture	Core	2	1	1	4	3	CE1006
CE3002 Sensors, Interfacing and Control	Core	2	1	1	4	3	CE2004
HW0288 Engineering Communication II	GER core	2	-	-	2	2	
CE0001 Engineers & Society	GER core	2	1	-	3	3	
AB0901 Principles of Economics: A Singapore Perspective	Core (Bus)	2	1	-	3	3	
TOTAL		14	6	4	24	20	

Course Code and Title	Type (i.e. Core/ Core elective/ GER core/ GER elective/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
YEAR 3 SEMESTER 1							
CE3003 Microcontroller Programming	Core	2	1	1	4	3	CE2005
CE3004 Multidisciplinary Design Project	Core	1	-	3	4	4	Year standing 3
CE3005 Computer Networks	Core	2	1	1	4	3	CE1011, CE1012
Technical Elective 1 (CZ200x or CZ300x)	Core elective	2	1	1	4	3	
AB1301 Business Law	Core (Bus)	2	1	-	3	3	
Bus Track Course 1*	Track course (Bus)	2	1	-	3	3	
GC0003 Entrepreneurship & Innovation	GER core					1	
TOTAL		11	5	6	22	20	

Course Code and Title	Type (i.e. Core/ Core elective/ GER core/ GER elective/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
YEAR 3 SEMESTER 2							
CE4079 Final Year Project	Core	-	-	-	-	-	
CE3007 Digital Signal Processing	Core	2	1	1	4	3	CE2004
CE4xxx Technical Elective 2	Core elective	2	1	1	4	3	
CE4xxx Technical Elective 3	Core elective	2	1	1	4	3	
AB1601 Organisational Behaviour and Design	Core (Bus)	2	1	-	3	3	
Bus Track Course 2*	Track course (Bus)	2	1	-	3	3	
Bus Track Course 3*	Track course (Bus)	2	1	-	3	3	
TOTAL		12	6	3	21	18	
YEAR 4 SEMESTER 1							
CE4079 Final Year Project	Core	-	-	-	-	8	
CE3006 Digital Communications	Core	2	1	1	4	3	CE1011, CE2004

CE4xxx Technical Elective 4	Core elective	2	1	1	4	3	
CE4xxx Technical Elective 5	Core elective	2	1	1	4	3	
CE4xxx Technical Elective 6	Core elective	2	1	1	4	3	
Bus Track Course 4*	Track course (Bus)	2	1	-	3	3	
TOTAL		10	5	4	19	23	
YEAR 4 SEMESTER 2							
ML0002 Career Power Up! by MLCPS	GER Core					1	Online course (to be taken with PI)
CE3079 Professional Internship	Core	-	-	-	-	8	Year 3 standing Students can opt to do PI in Year 3 Sem 2
TOTAL		-	-	-	-	9	
GRAND TOTAL (Years 1 to 4)						151	

⁺ An additional 10 hours per semester have been allocated for these non-lab based courses for Example Classes. Faculty can use these time slots for their pedagogical needs such as to reinforce concepts, provide additional coaching, give more worked examples, allow students to do practice exercises or do research or work on the computers etc.

*12 AUs of track courses will comprise 3 to 4 courses depending on the tracks chosen