

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

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

AU requirements

Type	Total No. of AUs
Depth (Core)	96
Breadth (GER-Core)	12
Business Major (Foundation Courses + Track Courses)	17 + 25 = 42
Grand Total	150

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 ⁺	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	3+2⁺	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)						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	MH1812, CE1012 CE1007
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
BF2201 Investments	Track course (Bus)	3	1	-	4	4	AB1201
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)
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	Track Course (Bus)	2	1	-	3	3	Student can choose to do in Year 2 Sem 1
BF2209 Derivative Securities	Track Course (Bus)	3	1	-	4	4	BF2201
TOTAL		13	5	3	21	18	
YEAR 3 SEMESTER 1							
CE3001 Advanced Computer	Core	2	1	1	4	3	CE1006

Architecture							
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
BF2207 International Finance	Track course (Bus)	3	1	-	4	4	AB0901, AB1201
GC0003 Entrepreneurship & Innovation	GER core					1	
TOTAL		10	4	6	20	18	

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

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	
MS8206 Commodities' Geology & Metallurgy	Track course (Bus)	3	1	-	4	4	
CE0001 Engineers and Society	GER core	2	1	-	3	3	
ML0002 Career Power Up! by MLCPS						1	Online course
CE3026 Professional Attachment	Core	-	-	-	-	4	
TOTAL		11	5	3	19	21	

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	
BF3211 Commodities Trading & Risk Management	Track course (Bus)	2	1	-	3	3	
MTxxxx*	Track course PE (Bus)	2	1	-	3	3	Student can choose to do the MTxxx Year 3 Sems 1 or 2 or in Year 4 Sem 2
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		
BF2301 International Tax and Trading Law	Track course (Bus)	2	1	-	3	3		
TOTAL		6	3	2	11	17		
GRAND TOTAL (Years 1 to 4)							150	

⁺ 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.

*Choose 1 among: MT1003 Trade Practices & Incoterms
 MT3006 Ship Chartering

Option 2: 20-week Professional Internship (PI)

AU requirements

Type	Total No. of AUs
Depth (Core)	100
Breadth (GER-Core)	12
Business Major (Foundation Courses + Track Courses)	17 + 25 = 42
Grand Total	154

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 Innovations & Inventions 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	3+2⁺	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	MH1812, CE1012, CE1007
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
CE3001 Advanced Computer Architecture	Core	2	1	1	4	3	CE1006
BF2201 Investments	Track course (Bus)	3	1	-	4	4	AB1201
GC0002 Ethics & Moral Reasoning	GER core					1	Online course
TOTAL		15	7	5+1⁺	28	23	
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)
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	Track course (Bus)	2	1	-	3	3	Student can choose to do in Year 2 Sem 1
BF2209 Derivative Securities	Track course (Bus)	3	1	-	4	4	BF2201
TOTAL		13	5	3	21	18	

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	
BF2207 International Finance	Track course (Bus)	3	1	-	4	4	AB0901, AB1201
CE0001 Engineers and Society	GER core	2	1	-	3	3	
GC0003 Entrepreneurship & Innovation	GER core					1	
TOTAL		12	5	6	23	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 3 SEMESTER 2							
ML0002 Career Power Up! by MLCPS						1	Online course (to be taken with PI)
CE3079 Professional Internship	Core	-	-	-	-	8	Year 3 standing Students can opt to do IA in Year 4 Sem 2
TOTAL		-	-	-	-	9	
YEAR 4 SEMESTER 1							
CE4079 Final Year Project	Core	-	-	-	-	-	
CE3006 Digital Communications	Core	2	1	1	4	3	CE1011,

							CE2004
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	
CE4xxx Technical Elective 4	Core elective	2	1	1	4	3	
BF3211 Commodity Trading & Risk Management	Track course (Bus)	2	1	-	3	3	
TOTAL		12	6	5	23	18	
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	
BF2301 International Tax and Trading Law	Track course (Bus)	2	1	-	3	3	
MS8206 Commodities' Geology & Metallurgy	Track course (Bus)	3	1	-	4	4	
MTxxxx*	Track course PE (Bus)	2	1	-	3	3	Student can choose to do the MTxxxx Year 3 Sem 1 or Year 4 Sem 1
TOTAL		10	5	4	19	24	
GRAND TOTAL (Years 1 to 4)							154

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MT3006 Ship Chartering