

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

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

AU requirements

Type	Total No. of AUs
Depth (Core)	96
Breadth (GER-Core + GER-BM + GER-LS)	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							
MH1812 Discrete Maths	Core	2	1	1 ⁺	4	3	-
CZ1003 Introduction to Computational Thinking	Core	2	1	1	4	3	-
CZ1004 Inventions and Innovations in Computing	Core	1	1	1 ⁺	3	2	-
CZ1005 Digital Logic	Core	2	1	1	4	3	-
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	2+2⁺	24	21	
YEAR 1 SEMESTER 2							
CZ1011 Engineering Mathematics I	Core	2	1	1 ⁺	3	3	-
CZ1012 Engineering Mathematics II	Core	2	1	1 ⁺	3	3	CZ1011 (can be taken concurrently)
CZ1006 Computer Organisation and Architecture	Core	2	1	1	4	3	CZ1005 (can be taken

							concurrently)
CZ1007 Data Structures	Core	2	1	1	4	3	CZ1003
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	2+2⁺	21	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							
CZ2001 Algorithms	Core	2	1	1 ⁺	4	3	MH1812, CZ1012, CZ1007,
CZ2002 Object Oriented Design & Programming	Core	2	1	1	4	3	CZ1007
CZ2003 Computer Graphics and Visualisation	Core	2	1	1	4	3	CZ1011
CZ2004 Human Computer Interaction	Core	2	1	1	4	3	-
CZ2005 Operating Systems	Core	2	1	1	4	3	CZ1007
BF2201 Investments	Track course (Bus)	3	1	-	4	4	AB1201
GC0002 Ethics & Moral Reasoning	GER core					1	Online course
TOTAL		15	6	4+1⁺	24	20	
YEAR 2 SEMESTER 2							
CZ2006 Software Engineering	Core	2	1	1	4	3	CZ2002 (can be taken concurrently)
CZ2007 Introduction to Databases	Core	2	1	1	4	3	CZ2001
CZ3003 Software Systems Analysis and Design	Core	2	1	1	4	3	CZ2004
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							
CZ3001 Advanced Computer Architecture	Core	2	1	1	4	3	CZ2006 (can be taken concurrently)
CZ3002 Advanced Software Engineering	Core	2	1	1	4	3	CZ2006
CZ3004 Multidisciplinary Design Project	Core	1	-	3	4	4	Year standing 3
CZ3006 Net Centric Computing	Core	2	1	1	4	3	CZ1006 and CZ2002
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							
CZ3005 Artificial Intelligence	Core	2	1	1	4	3	CZ1003, CZ2001
CZ3007 Compiler Techniques	Core	2	1	1	4	3	CZ2001, CZ2006
Technical Elective 1 (CE200x or CE300x)	Core elective	2	1	1	4	3	
MS8026 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
CZ3029 Professional Attachment	Core	-	-	-	-	4	
TOTAL		11	5	3	19	21	

YEAR 4 SEMESTER 1							
CZ4079 Final Year Project	Core	-	-	-	-	-	
CZ4xxx Technical Elective 2	Core elective	2	1	1	4	3	
CZ4xxx Technical Elective 3	Core elective	2	1	1	4	3	
CZ4xxx Technical Elective 4	Core elective	2	1	1	4	3	
BF3211 Commodities Trading & Risk Management	Track course (Bus)	2	1	-	3	3	
MTxxx*	Track course PE (Bus)	2	1	-	3	3	Student can choose to do the MTxxx in Year 3 or Year 4 Sem 2
TOTAL		10	4	3	18	15	
YEAR 4 SEMESTER 2							
CZ4079 Final Year Project	Core	-	-	-	-	8	Online course
CZ4xxx Technical Elective 5	Core elective	2	1	1	4	3	
CZ4xxx 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 + GER-BM + GER-LS)	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							
MH1812 Discrete Maths	Core	2	1	1 ⁺	4	3	-
CZ1003 Introduction to Computational Thinking	Core	2	1	1	4	3	-
CZ1004 Inventions and Innovations in Computing	Core	1	1	1 ⁺	3	2	-
CZ1005 Digital Logic	Core	2	1	1	4	3	-
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	2+2⁺	24	21	
YEAR 1 SEMESTER 2							
CZ1011 Engineering Mathematics I	Core	2	1	1 ⁺	3	3	-
CZ1012 Engineering Mathematics II	Core	2	1	1 ⁺	3	3	CZ1011 (can be taken concurrently)
CZ1006 Computer Organisation and Architecture	Core	2	1	1	4	3	CZ1005 (can be taken concurrently)
CZ1007 Data Structures	Core	2	1	1	4	3	CZ1003
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	+2⁺	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							
CZ2001 Algorithms	Core	2	1	1 ⁺	4	3	MH1812, CZ1012, CZ1007
CZ2002 Object Oriented Design & Programming	Core	2	1	1	4	3	CZ1007
CZ2003 Computer Graphics and Visualisation	Core	2	1	1	4	3	CZ1011
CZ2004 Human Computer Interaction	Core	2	1	1	4	3	-
CZ2005 Operating Systems	Core	2	1	1	4	3	CZ1007
CE0001 Engineers and Society	GER core	2	1	-	3	3	
BF2201 Investments	Track course (Bus)	3	1	-	4	4	AB1201
GC0002 Ethics & Moral Reasoning	GER core					1	Online course
TOTAL		15	7	4+1⁺	27	23	
YEAR 2 SEMESTER 2							
CZ2006 Software Engineering	Core	2	1	1	4	3	CZ2002 (can be taken concurrently)
CZ2007 Introduction to Databases	Core	2	1	1	4	3	CZ2001
CZ3001 Advanced Computer Architecture	Core	2	1	1	4	3	CZ2006 (can be taken concurrently)
CZ3003 Software Systems Analysis and Design	Core	2	1	1	4	3	CZ2004
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 Year 2 Sem 1
BF2209 Derivative Securities	Track course (Bus)	3	1	-	4	4	BF2201
TOTAL		15	6	4	25	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 1							
CZ3002 Advanced Software Engineering	Core	2	1	1	4	3	CZ2006
CZ3004 Multidisciplinary Design Project	Core	1	-	3	4	4	Year standing 3
CZ3005 Artificial Intelligence	Core	2	1	1	4	3	CZ1003, CZ2001
CZ3006 Net Centric Computing	Core	2	1	1	4	3	CZ1006, CZ2002
Technical Elective 1 (CE200x or CE300x)	Core elective	2	1	1	4	3	
BF2207 International Finance	Track course (Bus)	3	1	-	4	4	AB0901, AB1201
GC0003 Entrepreneurship & Innovation	GER core					1	
TOTAL		12	5	7	24	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)
CZ3079 Professional Internship	Core	-	-	-	-	8	Year 3 standing Students can opt to do PI in Year 4 Sem 2
TOTAL		-	-	-	-	9	
YEAR 4 SEMESTER 1							
CZ4079 Final Year Project	Core	-	-	-	-	-	

CZ3007 Compiler Techniques	Core	2	1	1	4	3	CZ2001, CZ2006
CZ4xxx Technical Elective 2	Core elective	2	1	1	4	3	
CZ4xxx Technical Elective 3	Core elective	2	1	1	4	3	
CZ4xxx Technical Elective 4	Core elective	2	1	1	4	3	
BF3211 Commodity Trading & Risk Management	Track course (Bus)	2	1	-	3	3	
TOTAL		10	5	4	19	15	
YEAR 4 SEMESTER 2							
CZ4079 Final Year Project	Core	-	-	-	-	8	
CZ4xxx Technical Elective 5	Core elective	2	1	1	4	3	
CZ4xxx Technical Elective 6	Core elective	2	1	1	4	3	
BF2301 International Tax and Trading Law	Track course (Bus)	2	1	-	3	3	
MS8026 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 MTxxx in Year 3 Sem 1 or Year 4 Sem 1
TOTAL		11	5	2	18	24	
GRAND TOTAL (Years 1 to 4)						154	

+ 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