



**Bachelor of Engineering (Computer Science) and 2<sup>nd</sup> Major in Business Curriculum**

For students matriculated in 2018 onwards

**4-year BEng (CS) Programme and 2<sup>nd</sup> Major in Business**

**Overview of AUs requirement**

**Option I: 10-week Professional Attachment(PA)**

Year of Study	Core (CS)	Major Prescribed Elective (MPE) (CS)	Advanced Business Courses	General Education Requirement (GER)	Unrestricted Elective (UE)	Unrestricted Elective (UE) (2 <sup>nd</sup> Major)	Total
				Core			
1	11			3		7	21
	12			3		7	22
2	15			1			16
	12			3			15
3	10			4		3	17
	11	3			5	3	22
4		9	8				17
	8	6	4				18
<b>Total</b>	79	18	12	14	5	20	148

**Option II: 20-week Professional Internship(PI)**

Year of Study	Core (CS)	Major Prescribed Elective (MPE) (CS)	Advanced Business Courses	General Education Requirement (GER)	Unrestricted Elective (UE)	Unrestricted Elective (UE) (2 <sup>nd</sup> Major)	Total
				Core			
1	11			3		7	21
	12			3		7	22
2	15			1			16
	12			4			16
3	10	3	4	3		3	23
	10						10
4	3	6	8			3	20
	11	9					20



<b>Total</b>	84	18	12	14		20	148
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**Option 1: 10-week Professional Attachment (PA)**

Course Code and Title	Type (i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec / TEL*	Tut	Lab/ Example class <sup>+</sup>	Total		
<b>YEAR 1 SEMESTER 1</b>							
MH1812 Discrete Mathematics	Core (CS)	2	1	1 <sup>+</sup>	4	3	-
CZ1003 Introduction to Computational Thinking	Core (CS)	2*	0	2 <sup>+</sup>	4	3	-
CZ1013 Physics for Computing	Core (CS)	2	0	2	3	2	-
CZ1005 Digital Logic	Core (CS)	2	1	1	4	3	-
HW0188 <sup>^</sup> Effective Communication	GER core	2	-	-	2	2	
HW0001 English Proficiency	GER core					0	
AD1101 Financial Accounting	Unrestricted elective (2 <sup>nd</sup> major)	3	1	-	4	4	-
AB1201 Financial Management	Unrestricted elective (2 <sup>nd</sup> major)	2	1	-	3	3	-
GC0001 Sustainability: Seeing Through The Haze	GER core					1	Online course
<b>TOTAL</b>		<b>13+2*</b>	<b>4</b>	<b>3+3<sup>+</sup></b>	<b>24</b>	<b>21</b>	

Course Code and Title	Type (i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec / TEL*	Tut	Lab/ Example class <sup>+</sup>	Total		
<b>YEAR 1 SEMESTER 2</b>							
CZ1011 Engineering Mathematics I	Core (CS)	2	1	1 <sup>+</sup>	4	3	-
CZ1012 Engineering Mathematics II	Core (CS)	2	1	1 <sup>+</sup>	4	3	CZ1011 (can be taken concurrently)
CZ1006 Computer Organisation and Architecture	Core (CS)	2	1	1	4	3	CZ1005 (can be taken concurrently)
CZ1007 Data Structures	Core (CS)	2	1	1	4	3	CZ1003



AB1501 Marketing	Unrestricted elective (2 <sup>nd</sup> major)	2	1	-	3	3	-
BE1401 Business Operations and Processes	Unrestricted elective (2 <sup>nd</sup> major)	3	1	-	4	4	-
CZ1015 Introduction to Data Science and Artificial Intelligence	GER Core	2*	0	2	4	3	
<b>TOTAL</b>		<b>13+2*</b>	<b>6</b>	<b>4+2<sup>+</sup></b>	<b>27</b>	<b>22</b>	
<b>YEAR 2 SEMESTER 1</b>							
CZ2001 Algorithms	Core (CS)	2	1	1 <sup>+</sup>	4	3	CZ1007, CZ1012, MH1812
CZ2002 Object Oriented Design & Programming	Core (CS)	2	1	1	4	3	CZ1007
CZ2004 Human Computer Interaction	Core (CS)	2	1	1	4	3	-
CZ2005 Operating Systems	Core (CS)	2	1	1	4	3	CZ1006, CZ1007
CZ2007 Introduction to Databases	Core (CS)	2	1	1	4	3	CZ2001 (can be taken concurrently)
HY0001 Ethics & Moral Reasoning	GER core					1	Online course
<b>TOTAL</b>		<b>10</b>	<b>5</b>	<b>4+1<sup>+</sup></b>	<b>20</b>	<b>16</b>	

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

Course Code and Title	Type (i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
<b>YEAR 2 SEMESTER 2</b>							
CZ2003 Computer Graphics and Visualisation	Core (CS)	2	1	1	4	3	CZ1011
CZ2006 Software Engineering	Core (CS)	2	1	1	4	3	CZ2002 (can be taken concurrently)
CZ3001 Advanced Computer Architecture	Core (CS)	2	1	1	4	3	CZ2006 (can be taken concurrently)
CZ3003 Software Systems Analysis and Design	Core (CS)	2	1	1	4	3	CZ2004
CZ0001 Engineers & Society <sup>#</sup>	GER core	2	1	-	3	3	
<b>TOTAL</b>		<b>10</b>	<b>5</b>	<b>4</b>	<b>19</b>	<b>15</b>	
<b>YEAR 3 SEMESTER 1</b>							
CZ3002 Advanced Software Engineering	Core (CS)	2	1	1	4	3	CZ2006



CZ3004 Multidisciplinary Design Project	Core (CS)	1	-	3	4	4	Year 3 standing
CZ3006 Net Centric Computing	Core (CS)	2	1	1	4	3	CZ1006, CZ2002
AB1301 Business Law	Unrestricted elective (2 <sup>nd</sup> major)	2	1	-	3	3	
ET0001 Enterprise & Innovation	GER core					1	
HW0288 Engineering Communication II	GER core	2	-	-	2	2	HW0188, Year 3 standing
ML0003 Kickstart your Career Success	GER core					1	online course
<b>TOTAL</b>		<b>9</b>	<b>3</b>	<b>5</b>	<b>17</b>	<b>17</b>	

# Available only in semester 2. Should there be insufficient vacancies, students will take Engrs and Society in the next semester 2.

Course Code and Title	Type (i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
<b>YEAR 3 SEMESTER 2</b>							
CZ3005 Artificial Intelligence	Core (CS)	2	1	1	4	3	CZ1003, CZ2001
CZ3007 Compiler Techniques	Core (CS)	2	1	1	4	3	CZ2001, CZ2006
Technical Elective 1 (CE200x or CE300x)	MPE	2	1	1	4	3	
AB1601 Organisational Behaviour and Design	Unrestricted elective (2 <sup>nd</sup> major)	2	1	-	3	3	
Unrestricted Elective	Unrestricted elective	2	-	-	2	2	
Unrestricted Elective	Unrestricted elective	3	-	-	3	3	
CZ3126 Professional Attachment	Core (CS)	-	-	-	-	5	
<b>TOTAL</b>		<b>13</b>	<b>4</b>	<b>3</b>	<b>20</b>	<b>22</b>	
<b>YEAR 4 SEMESTER 1</b>							
CZ4079 Final Year Project	Core (CS)	-	-	-	-	-	Final year standing
CZ4xxx Technical Elective 2	MPE	2	1	1	4	3	
CZ4xxx Technical Elective 3	MPE	2	1	1	4	3	
CZ4xxx Technical Elective 4	MPE	2	1	1	4	3	
Advanced Bus Course 1	Advanced course (Bus)	3	1	-	4	4	
Advanced Bus Course 2	Advanced course (Bus)	3	1	-	4	4	
<b>TOTAL</b>		<b>12</b>	<b>5</b>	<b>3</b>	<b>20</b>	<b>17</b>	



Course Code and Title	Type ( i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
<b>YEAR 4 SEMESTER 2</b>							
CZ4079 Final Year Project	Core (CS)	-	-	-	-	8	
CZ4xxx Technical Elective 5	MPE	2	1	1	4	3	
CZ4xxx Technical Elective 6	MPE	2	1	1	4	3	
Advanced Bus Course 3	Advanced course (Bus)	3	1	-	4	4	
<b>TOTAL</b>		<b>7</b>	<b>3</b>	<b>2</b>	<b>12</b>	<b>18</b>	
<b>GRAND TOTAL (Years 1 to 4)</b>						<b>148</b>	

\*Instead of normal tutorial/laboratory classes, Faculty can use Example Class for their pedagogical needs such as group discussion team based learning (TBL), seminar to review and reinforce concepts, provide additional coaching, give more worked examples, allow students to do practice exercises or do research or work on the computers etc.

OR AB1401 Information Technology (3AU) AND AB1402 Foundational Excel (1AU)

Advanced Business Courses (Students to choose any 3 courses)
<ul style="list-style-type: none"> <li>• BF2201 Investments (Prerequisite: AB1201)</li> <li>• BM2501 Market Behaviour (Prerequisite: AB1501)</li> <li>• BM2502 Market Intelligence (Prerequisite: AB1501)</li> <li>• BE2601 Management Principles, Skills and Competencies (Prerequisite: AB1601)</li> </ul>



**Option 2: 20-week Professional Internship (PI)**

Course Code and Title	Type (i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec / TEL*	Tut	Lab/ Example class <sup>+</sup>	Total		
<b>YEAR 1 SEMESTER 1</b>							
MH1812 Discrete Mathematics	Core (CS)	2	1	1 <sup>+</sup>	4	3	-
CZ1003 Introduction to Computational Thinking	Core (CS)	2*	0	2 <sup>+</sup>	4	3	-
CZ1005 Digital Logic	Core (CS)	2	1	1	4	3	-
CZ1013 Physics for Computing	Core (CS)	2	0	2	3	2	-
HW0188 <sup>^</sup> 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 Sustainability: Seeing Through The Haze	GER core					1	Online course
<b>TOTAL</b>		<b>13+2*</b>	<b>4</b>	<b>3+3<sup>+</sup></b>	<b>24</b>	<b>21</b>	
<b>YEAR 1 SEMESTER 2</b>							
CZ1011 Engineering Mathematics I	Core (CS)	2	1	1 <sup>+</sup>	4	3	-
CZ1012 Engineering Mathematics II	Core (CS)	2	1	1 <sup>+</sup>	4	3	CZ1011 (can be taken concurrently)
CZ1006 Computer Organisation and Architecture	Core (CS)	2	1	1	4	3	CZ1005 (can be taken concurrently)
CZ1007 Data Structures	Core (CS)	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	-
CZ1015 Introduction to Data Science and Artificial Intelligence	GER Core	2*	0	2	4	3	
<b>TOTAL</b>		<b>13+2*</b>	<b>6</b>	<b>4+2<sup>+</sup></b>	<b>27</b>	<b>22</b>	

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Course Code and Title	Type (i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
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CZ2005 Operating Systems	Core (CS)	2	1	1	4	3	CZ1006, CZ1007
CZ2007 Introduction to Databases	Core (CS)	2	1	1	4	3	CZ2001 (can be taken concurrently)
HY0001 Ethics & Moral Reasoning	GER core					1	Online course
<b>TOTAL</b>		<b>10</b>	<b>5</b>	<b>4+1<sup>+</sup></b>	<b>20</b>	<b>16</b>	
<b>YEAR 2 SEMESTER 2</b>							
CZ2003 Computer Graphics and Visualisation	Core (CS)	2	1	1	4	3	CZ1011
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CZ3001 Advanced Computer Architecture	Core (CS)	2	1	1	4	3	CZ2006 (can be taken concurrently)
CZ3003 Software Systems Analysis and Design	Core (CS)	2	1	1	4	3	CZ2004
CZ0001 Engineers & Society	GER core	2	1	-	3	3	
ML0003 Kickstart your Career Success	GER core					1	online course
<b>TOTAL</b>		<b>10</b>	<b>5</b>	<b>4</b>	<b>19</b>	<b>16</b>	



Course Code and Title	Type (i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
<b>YEAR 3 SEMESTER 1</b>							
CZ3002 Advanced Software Engineering	Core (CS)	2	1	1	4	3	CZ2006
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AB1301 Business Law	Core (Bus)	2	1	-	3	3	
Advanced Bus Course 1	Advanced course (Bus)	3	1	-	4	4	
ET0001 Enterprise & Innovation	GER core					1	
HW0288 Engineering Communication II	GER core	2	-	-	2	2	HW0188, Year 3 standing
<b>TOTAL</b>		<b>14</b>	<b>5</b>	<b>6</b>	<b>25</b>	<b>23</b>	
<b>YEAR 3 SEMESTER 2</b>							
CZ3179 Professional Internship	Core (CS)	-	-	-	-	10	Year 3 standing
<b>TOTAL</b>		<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>10</b>	





Course Code and Title	Type (i.e. Core/ MPE/ GER core/ GER PE/ Unrestricted elective)	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec	Tut	Lab	Total		
<b>YEAR 4 SEMESTER 1</b>							
CZ4079 Final Year Project	Core (CS)	-	-	-	-	-	Final year standing
CZ3007 Compiler Techniques	Core (CS)	2	1	1	4	3	CZ2001, CZ2006
CZ4xxx Technical Elective 2	MPE	2	1	1	4	3	
CZ4xxx Technical Elective 3	MPE	2	1	1	4	3	
AB1601 Organisational Behaviour and Design	Core (Bus)	2	1	-	3	3	
Advanced Bus Course 2	Advanced course (Bus)	3	1	-	4	4	
Advanced Bus Course 3	Advanced course (Bus)	3	1	-	4	4	
<b>TOTAL</b>		<b>14</b>	<b>6</b>	<b>3</b>	<b>23</b>	<b>20</b>	
<b>YEAR 4 SEMESTER 2</b>							
CZ4079 Final Year Project	Core (CS)	-	-	-	-	8	
CZ3005 Artificial Intelligence	Core (CS)	2	1	1	4	3	CZ1003, CZ2001
CZ4xxx Technical Elective 4	MPE	2	1	1	4	3	
CZ4xxx Technical Elective 5	MPE	2	1	1	4	3	
CZ4xxx Technical Elective 6	MPE	2	1	1	4	3	
<b>TOTAL</b>		<b>8</b>	<b>4</b>	<b>4</b>	<b>16</b>	<b>20</b>	
<b>GRAND TOTAL (Years 1 to 4)</b>						<b>148</b>	

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(Students to choose any 3 courses)

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