

4-year BEng (Computer Science) NTU-USP Programme

Applicable to students matriculated in AY2020

Overview of AUs requirement

Year of Study	Core	Major Prescribed Elective (MPE)	NTU-USP Requirement		GER Core	UE	Total	
			NTU-USP Core	NTU-USP PE				
1	Sem 1	14		6		2	22	
	Sem 2	12		6			18	
2	Sem 1	15			3	1	19	
	Sem 2	9			3	7	19	
3	Sem 1	10	3		6		19	
	Sem 2	10					10	
4	Sem 1	3	6		3	3	15	
	Sem 2	11	9				20	
Total		84	18	12	15	10	3	142



Recommended Curriculum

Course Code and Title	Course Type	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec / TEL	Tut	Lab/ Example class	Total		
YEAR 1 SEMESTER 1							
MH1810 Mathematics 1	Core	2	1	0	3	3	-
MH1812 Discrete Mathematics	Core	2	1	0	3	3	-
CZ1103 Introduction to Computational Thinking & Programming	Core	2	0	2	4	3	-
CZ1113 Physics for Computing	Core	2	0	2	3	2	-
CZ1105 Digital Logic (Engineering Fundamentals 1)	Core	2	1	0.5	3.5	3	-
SP0001 Writing and Reasoning	NTU-USP core					3	
SP0005 Quantitative Reasoning	NTU-USP Core					3	
GC0001 Sustainability: Seeing Through The Haze	GER core	-	-	-	-	1	online course
HY0001 Ethics & Moral Reasoning	GER core	-	-	-	-	1	online course
HW0001 Introduction to Academic Communication						0	
TOTAL		10	3	4.5	16.5	22	

YEAR 1 SEMESTER 2							
CZ1104 Linear Algebra for Computing	Core	2	1	1	4	3	MH1810
CZ1106 Computer Organisation & Architecture	Core	2	1	0.5	3.5	3	CZ1105 (can be taken concurrently)
CZ1107 Data Structures & Algorithms	Core	2	1	0.5	3.5	3	CZ1103
Engineering Fundamentals 2	Core					3	
SP0002 Ethics Seminar	NTU-USP core					3	
SP0007 Fieldwork and Documentation/ Travel Overseas Programme for Scholars (TOPS)	NTU-USP Core					3	
TOTAL		6	3	2	11	18	



Course Code and Title	Course Type	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec / TEL	Tut	Lab/ Example class	Total		
YEAR 2 SEMESTER 1							
CZ2100 Probability and Statistics for Computing	Core	2	1	-	3	3	MH1810
CZ2101 Algorithm Design and Analysis	Core	2	1	0.5	3.5	3	CZ1107, MH1812
CZ2102 Object Oriented Design & Programming	Core	2	1	0.5	3.5	3	CZ1103
CZ2105 Operating Systems	Core	2	1	0.5	3.5	3	CZ1106, CZ1107
CZ3150 Advanced Computer Architecture	Core	2	1	0.5	3.5	3	CZ1106
USP Prescribed Elective 1 – AHC/STS**	NTU-USP PE					3	
ET0001 Enterprise & Innovation	GER core	-	-	-	-	1	online course
TOTAL		10	5	2	17	19	

YEAR 2 SEMESTER 2							
CZ2106 Software Engineering	Core	2	1	0.5	3.5	3	CZ2102 (can be taken concurrently)
CZ2107 Introduction to Databases	Core	2	1	0.5	3.5	3	CZ2101 (can be taken concurrently)
CZ2108 Computing Networks	Core	2	1	0.5	3.5	3	CZ1104, CZ2100
USP Prescribed Elective 2 – AHC/STS**	NTU-USP PE					3	
EG0001 Engineers and Society [#]	GER core	2	1	-	3	3	-
CZ1115 Introduction to Data Science and Artificial Intelligence	GER core	2	0	2	4	3	CZ1103
ML0003 Kickstart your Career Success	GER core	-	-	-	-	1	online course
TOTAL		10	4	3.5	17.5	19	

[#] If there are insufficient vacancies, students will take EG0001 in next available semester.



Course Code and Title	Course Type	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec / TEL	Tut	Lab/ Example class	Total		
YEAR 3 SEMESTER 1							
CZ2179 Multidisciplinary Design Project	Core	1	-	3	4	4	Year 3 standing
CZ3100 Artificial Intelligence	Core	2	1	0.5	3.5	3	CZ1107, CZ1115, CZ2101
CZ3110 Computer Security	Core	2	1	0.5	3.5	3	CZ2105
USP Prescribed Elective 3 – AHC/STS**	NTU-USP PE					3	
USP Prescribed Elective 4 – AHC/STS**	NTU-USP PE					3	
CZ4xxx Prescribed Elective 1	MPE	2	1	0.5	3.5	3	
TOTAL		7	3	4.5	14.5	19	

YEAR 3 SEMESTER 2							
CZ3179 Professional Internship	Core	-	-	-	-	10	ML0003, Year 3 standing
TOTAL		-	-	-	-	10	



Course Code and Title	Course Type	No of Hours Per Week				AU	Pre-requisite / Remarks
		Lec / TEL	Tut	Lab/ Example class	Total		
YEAR 4 SEMESTER 1							
CZ4179 Final Year Project	Core	-	-	-	-	-	Final year standing
CZ3120 Database System Principles	Core	2	1	0.5	3.5	3	CZ2107
CZ4xxx Prescribed Elective 2	MPE	2	1	0.5	3.5	3	
CZ4xxx Prescribed Elective 3	MPE	2	1	0.5	3.5	3	
USP Prescribed Elective 5 – AHC/STS**	NTU-USP PE					3	
Unrestricted elective	UE	2	1	-	3	3	
TOTAL		8	4	1.5	13.5	15	

YEAR 4 SEMESTER 2							
CZ4179 Final Year Project	Core	-	-	-	-	8	
CZ3140 Advanced Software Engineering	Core	2	1	0.5	3.5	3	CZ2106
CZ4xxx Prescribed Elective 4	MPE	2	1	0.5	3.5	3	
CZ4xxx Prescribed Elective 5	MPE	2	1	0.5	3.5	3	
CZ4xxx Prescribed Elective 6	MPE	2	1	0.5	3.5	3	
TOTAL		8	4	2	14	20	

GRAND TOTAL (Years 1 to 4)	142
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** Students to select two elective courses from each category below and one more from either category (Total of five courses):

Arts, Humanities, and Culture (AHC)

Science, Technology, and Society (STS)