

*** Computer and Information Science** (*Honor Program*)

Total credits of the curriculum:	153 credits
- General education knowledge:	34 credits
<i>(Not including physical education, military defense education and soft skills)</i>	
- Basic courses:	06 credits
- Fundamental courses:	06 credits
- Core courses:	32 credits
+ <i>Required:</i>	<i>29 credits</i>
+ <i>Elective:</i>	<i>11/28 credits</i>
- Advanced courses:	75 credits
+ <i>Required:</i>	<i>43 credits</i>
+ <i>Elective:</i>	<i>23/51 credits</i>
+ <i>Undergraduate thesis/ Courses replacing thesis:</i>	<i>9 credits</i>

Available curriculum

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
I		General education knowledge (Not including subjects 11-13)	34				
1	PHI1004	Fundamental Principles of Maxis – Leninism 1	2	21	5	4	
2	PHI1005	Fundamental Principles of Maxis – Leninism 2	3	32	8	5	PHI1004
3	POL1001	Ho Chi Minh Ideology	2	20	8	2	PHI1005
4	HIS1002	Revolutionary Strategies of Vietnamese Communist Party	3	35	7	3	POL1001
5	INT1003	Introduction to Informatics 1	2	10	20		
6	INT1006	Introduction to Informatics 4	3	20	23	2	INT1003
7	FLF2101	General English 1	4	16	40	4	
8	FLF2102	General English 2	5	20	50	5	FLF2101
9	FLF2103	General English 3	5	20	50	5	FLF2102
10	FLF2104	General English 4	5				FLF2103
11		Physical Education	4				
12		National Defence Education	8				
13		Soft skills	2				
II		Basic courses	6				
14	HIS1056	Fundamental of Vietnamese Culture	3	42	3		
15	GEO1050	Earth and Life Sciences	3	42	3		
III		Fundamental courses	6				
16	PHY1100	Mechanics – Thermodynamics	3	32	10	3	MAT2401
17	PHY1103	Electromagnetism – Optics	3	28	17		MAT2401
IV		Core courses	32				
18	MAT2400	Linear Algebra	5	50	25		
19	MAT2401	Calculus 1	5	60	15		
20	MAT2402	Calculus 2	5	60	15		MAT2401

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
21	MAT2403	Differential Equations	3	30	15		MAT2401
22	MAT2404	Numerical Analysis	4	45	15		MAT2402 MAT2403 INT1006
23	MAT2405	Probability	3	30	15		MAT2402
24	MAT2410	Applied Statistics	4	45	15		MAT2405
25	MAT2411	Optimization	3	30	15		MAT2400 MAT2402
V		Advanced courses	66				
V.1		Required	43				
26	MAT3500	Discrete Mathematics	4	45	15		MAT2400 MAT2401
27	MAT3550	Principles of Operating Systems	3	30	15		INT1006
28	MAT3551	Data Structures and Algorithms	4	40	20		INT1006
29	MAT3503	Object–Oriented Programming	3	20	25		INT1006
30	MAT3552	Algorithm Design and Analysis	3	30	15		MAT2402 INT1006
31	MAT3505	Computer Architecture	3	30	15		INT1006
32	MAT3506	Computer Networks	3	40	5		INT1006
33	MAT3507	Databases	4	40	20		INT1006
34	MAT3553	Introduction to Artificial Intelligence	3	30	15		INT1006
35	MAT3554	Formal Language and Automata	3	40	5		INT1006 MAT3500
36	MAT3510	Object – Oriented Software Development Project	3	10		35	MAT3551
37	MAT3515	Mini project	2	15	15		MAT2410 MAT3551
38	MAT3543	Software Engineering	3	30	15		MAT3510 MAT3552
39	MAT3555	English for Special Purpose	2	25	5		FLF2102

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
V.2		<i>Elective</i>	23				
V.2.1		<i>Programming skills (Only select a maximum of two courses among MAT3520, 3521, 3522, 3556)</i>	8/16				
40	MAT3520	Progammng in C/C++	2	10	20		MAT3503
41	MAT3521	Programming in C#	2	10	20		MAT3503
42	MAT3522	Programming in Python/Scala	2	12	15	3	MAT3503 MAT3510
43	MAT3556	Programming in NodeJS	2	10	20		MAT3510
44	MAT3557	Linux Programming Environment	2	15	15		INT1006
45	MAT3558	Programming for mobile platforms	2	10	20		MAT3551 MAT3507 MAT3503
46	MAT3559	Embedded System Workshop	2	10	20		MAT3503 MAT3505
47	MAT3568	Introduction to game design and development	2	10	20		MAT3521
V.2.2		<i>Computer science and informatics: Artificial intelligence and software development</i>	15/33				
		<i>Select two of three courses in artificial intelligence</i>	6/9				
48	MAT3533	Machine Learning	3	24	15	6	MAT3551 MAT2410 MAT2404
49	MAT3561	Natural Language Processing and applications	3	35	10		MAT3510 MAT2410
50	MAT3562	Computer Vision: Foundations and	3	35	10		MAT2402

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
		Applications					MAT2400 INT1006
		<i>Select 3 of 8 courses in artificial intelligence and software development</i>	9/24				
51	MAT3563	Advanced Reading in Computer Vision	3	15	15	15	MAT3562
52	MAT3535	Introduction to Information Retrieval	3	24	15	6	MAT3551 MAT2410
53	MAT3542	Web Applications Development	3	20	20	5	MAT3510
54	MAT3564	Introduction to Human-Computer Interaction Design	3	15	20	10	INT1006
55	MAT3565	Mining Massive Data Sets	3	30	15		MAT3551 MAT2405 MAT3507
56	MAT3539	Cryptography and Data Security	3	30	15		INT1006
57	MAT3566	Computer Vision: From 3D Reconstruction to Recognition	3	30	15		MAT3533 MAT3562 MAT3522 MAT3520
58	MAT3567	Analysis and Design of Information Systems	3	10	35		MAT3510 MAT3552
V.3		Undegraduate thesis/ Courses replacing thesis	9				
59	MAT4081	Undergraduate Thesis	9				
		<i>Courses replacing thesis</i>					
		<i>Select 3 courses in V.2.2 as an alternative for undergraduate thesis</i>	9				
		Total	153				