

*** Computer and Information Science** (*Dated September 28th, 2015*)

Total credits of the curriculum **139 credits**

- **General education knowledge:** **29 credits**

(not including physical education, military defense education, and sc

- **Basic courses:** **6 credits**

- **Fundamental courses:** **6 credits**

- **Core courses:** **32 credits**

- **Advanced courses:** **66 credits**

+ *Required:* *41 credits*

+ *Elective:* *18 credits*

+ *Undergraduate thesis/ Courses replacing* *7 credits*

undergraduate thesis:

Available curriculum

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
I		General education knowledge <i>(Not including subjects 10 - 12)</i>	29				
1	PHI1004	<i>Fundamental Principles of Marxism - Leninism 1</i>	2	24	6		
2	PHI1005	<i>Fundamental Principles of Marxism - Leninism 2</i>	3	36	9		PHI1004
3	POL1001	<i>Ho Chi Minh Ideology</i>	2	20	10		PHI1005
4	HIS1002	<i>The Revolutionary line of the Communist Party of Vietnam</i>	3	42	3		POL1001
5	INT1003	<i>Introduction to Informatics 1</i>	2	10	20		
6	INT1006	<i>Introduction to Informatics 4</i>	3	20	23	2	INT1003
7	FLF2101	<i>General English 1</i>	4	16	40	4	
8	FLF2102	<i>General English 2</i>	5	20	50	5	FLF2101
9	FLF2103	<i>General English 3</i>	5	20	50	5	FLF2102
10		<i>Physical Education</i>	4				
11		<i>National Defence Education</i>	8				
12		<i>Soft Skills</i>	3				

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
II		Basic courses	6				
13	HIS1056	<i>Fundamentals of Vietnamese Culture</i>	3	42	3		
14	GEO1050	<i>Earth and Life Sciences</i>	3	30	10	5	
III		Fundamental courses	6				
15	PHY1100	<i>Mechanics - Thermodynamics</i>	3	30	15		MAT2401
16	PHY1103	<i>Electricity - Optics</i>	3	30	15		MAT2401
IV		Core courses	32				
17	MAT2400	<i>Linear Algebra</i>	5	50	25		
18	MAT2401	<i>Analysis 1</i>	5	60	15		
19	MAT2402	<i>Analysis 2</i>	5	60	15		MAT2401 MAT2400
20	MAT2403	<i>Differential Equations</i>	3	30	15		MAT2401 MAT2400
21	MAT2404	<i>Numerical Analysis</i>	4	45	15		MAT2402 MAT2403 INT1006
22	MAT2405	<i>Probability</i>	3	30	15		MAT2402
23	MAT2406	<i>Applied Statistics</i>	4	45	15		MAT2405
24	MAT2407	<i>Optimization</i>	3	30	15		MAT2402
V		Advanced courses	66				

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
V.1		Required	41				
25	MAT3500	<i>Discrete Mathematics</i>	4	45	15		MAT2400 MAT2401
26	MAT3501	<i>Principles of Operating Systems</i>	3	30	15		INT1006
27	MAT3514	<i>Data Structures and Algorithms</i>	4	40	20		INT1006
28	MAT3503	<i>Object–Oriented Programming</i>	3	20	25		INT1006
29	MAT3504	<i>Algorithm Design and Analysis</i>	3	30	15		MAT2402 INT1006
30	MAT3505	<i>Computer Architecture</i>	3	30	15		INT1006
31	MAT3506	<i>Computer Networks</i>	3	40	5		INT1006
32	MAT3507	<i>Databases</i>	4	50	10		INT1006
33	MAT3508	<i>Introduction to Artificial Intelligence</i>	3	30	15		INT1006
34	MAT3509	<i>Formal Languages and Automata</i>	3	40	5		INT1006 MAT3500
35	MAT3510	<i>Software Development Project</i>	3	10	35		MAT3503 MAT3507
36	MAT3515	<i>Mini project</i>	2	15	15		
37	MAT3543	<i>Software Engineering</i>	3	30	15		MAT3510 MAT3504

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
V.2		<i>Elective</i>	18				
V.2.1		<i>Elective software skills (Students may only select a maximum of 1 module programming language MAT3520, 3521, 3522, 3523)</i>	<i>6/14</i>				
38	MAT3520	<i>Programming in C/C++</i>	2	10	20		MAT3503
39	MAT3521	<i>Programming in C#</i>	2	10	20		MAT3503
40	MAT3522	<i>Programming in Python</i>	2	12	15	3	MAT3503
41	MAT3523	<i>Programming in Perl</i>	2	10	20		INT1006
42	MAT3524	<i>Linux</i>	2	15	15		INT1006
43	MAT3525	<i>Practicum in Computing</i>	2	20	10		MAT2402
44	MAT3516	<i>Decision Support Systems</i>	2	15	15		MAT3507
V.2.2		<i>Elective in computer and information science</i>	<i>12/43</i>				
45	MAT3531	<i>Distributed Computing</i>	3	35	10		MAT3501 MAT3503
46	MAT3533	<i>Machine Learning</i>	3	24	16	5	MAT3508 MAT2406
47	MAT3534	<i>Data Mining</i>	3	30	15		MAT3507 MAT2406
48	MAT3535	<i>Information retrieval</i>	3	24	16	5	MAT3514 MAT2406
49	MAT3536	<i>Computational Linguistics</i>	3	35	10		MAT3509 MAT3508
50	MAT3537	<i>Image Processing</i>	3	35	10		MAT2402 INT1006
51	MAT3538	<i>Knowledge-Based Systems</i>	3	30	15		MAT3508 MAT3514 MAT3503

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
52	MAT3539	<i>Cryptography and Data Security</i>	3	30	15		INT1006
53	MAT3540	<i>Multimedia Database</i>	3	30	15		MAT3507
54	MAT3541	<i>Principles of Programming Languages</i>	3	45			INT1006
55	MAT3542	<i>Web Applications Development</i>	3	20	20	5	INT1006 MAT3510
56	MAT3544	<i>Analysis and Design of Information Systems</i>	4	20	40		MAT3510 MAT3504
57	MAT3452	<i>Multivariate Statistical Analysis</i>	3	30	15		MAT2406
58	MAT3453	<i>Sampling Methods</i>	3	30	12	3	MAT2406
V.3		<i>Undergraduate thesis/ Courses replacing undergraduate thesis:</i>	7				
59	MAT4080	<i>Undergraduate Thesis</i>	7				
		<i>Courses replacing undergraduate thesis: Select credits have not learnt in V.2.2 block</i>	7				
		Total	139				