

*** Mathematics** (*Dated September 28th, 2015*)

Total credits of the curriculum:	137 credits
- General education knowledge:	29 credits
<i>(not including physical education, military defense education, and soft skills)</i>	
- Basic courses:	6 credits
- Fundamental courses:	6 credits
- Core courses:	45 credits
- Advanced courses:	51 credits
+ <i>Required:</i>	<i>32 credits</i>
+ <i>Elective:</i>	<i>12 credits</i>
+ <i>Undergraduate thesis/ Courses replacing</i>	<i>7 credits</i>
<i>undergraduate thesis:</i>	

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				
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		MAT2302
16	PHY1103	<i>Electromagnetism - Optics</i>	3	30	15		MAT2302
IV		Core courses	45				
17	MAT2300	<i>Linear Algebra 1</i>	4	45	15		
18	MAT2301	<i>Linear Algebra 2</i>	4	45	15		MAT2300
19	MAT2302	<i>Analysis 1</i>	5	45	30		
20	MAT2303	<i>Analysis 2</i>	5	45	30		MAT2302
21	MAT2304	<i>Analysis 3</i>	4	40	20		MAT2303

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
22	MAT2314	<i>Differential Equations</i>	4	45	15		MAT2301 MAT2303
23	MAT2306	<i>Partial Differential Equations I</i>	3	30	15		MAT2304 MAT2314
24	MAT2307	<i>Numerical Analysis I</i>	4	45	15		MAT2314 INT1006
25	MAT2308	<i>Probability I</i>	3	30	15		MAT2300 MAT2302
26	MAT2309	<i>Optimization I</i>	3	30	15		MAT2301 MAT2303
27	MAT2310	<i>Analytic Geometry</i>	2	20	10		MAT2301
28	MAT2311	<i>Applied Statistics</i>	4	45	15		MAT2308
V		Advanced courses	51				
V.1		Required	32				
29	MAT3300	<i>Abstract Algebra</i>	4	45	15		MAT2301
30	MAT3301	<i>Functional Analysis</i>	3	30	15		MAT2301 MAT2304
31	MAT3302	<i>Discrete Mathematics</i>	4	45	15		MAT2300 MAT2302
32	MAT3344	<i>Complex Analysis</i>	4	45	15		MAT2301 MAT2304
33	MAT3304	<i>Practicum in Computing</i>	2	15	15		MAT2307
34	MAT3305	<i>General Topology</i>	3	45			MAT2302
35	MAT3306	<i>Introduction to Differential Geometry</i>	3	45			MAT2301 MAT3305
36	MAT3307	<i>Measure and Integration theory</i>	3	45			MAT2304

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
37	MAT3347	<i>Galois theory</i>	4	60			MAT3300
38	MAT3338	<i>Mini Project</i>	2		25	5	
V.2		Elective (select 1 in 2 following intensive instructions)	12				
V.2.1		<i>The intensive credits on Mathematics Theory</i>	12/54				
39	MAT3339	<i>Linear Algebra 3</i>	3	45			MAT2301
40	MAT3310	<i>Introduction to Algebraic Topology</i>	3	45			MAT3300 MAT3305
41	MAT3311	<i>Theory of Groups and Group Representations</i>	3	45			MAT3300
42	MAT3312	<i>Algebraic Geometry</i>	3	45			MAT3300 MAT3305
43	MAT3313	<i>Number Theory</i>	3	45			MAT2301 MAT2304
44	MAT3314	<i>Differential Topology</i>	3	45			MAT2301 MAT2304 MAT3305
45	MAT3315	<i>Topological Vector space</i>	3	45			MAT2301 MAT3305
46	MAT3316	<i>Spectral Theory of Operators</i>	3	45			MAT3301
47	MAT3317	<i>Partial Differential Equations 2</i>	3	45			MAT3301 MAT3307
48	MAT3318	<i>Analysis on Manifolds</i>	3	45			MAT3339 MAT3305
49	MAT3345	<i>Stability theory of Differential Equations</i>	3	45			MAT2314
50	MAT3320	<i>Integral Equations</i>	3	45			MAT2314

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
							MAT3301 MAT3344
51	MAT3321	<i>Stochastic Processes</i>	3	45			MAT2311
52	MAT3322	<i>Probability 2</i>	3	45			MAT2308 MAT3301 MAT3307
53	MAT3323	<i>Discrete Optimization</i>	3	45			MAT2309 MAT3302
54	MAT3324	<i>Combinatorics</i>	3	45			MAT3302
55	MAT3325	<i>History of Mathematics</i>	3	45			MAT2314 MAT2304
56	MAT3326	<i>Seminar in Mathematics</i>	3	40		5	
V.2.2		<i>The intensive credits in Applied Mathematics</i>	12/48				
57	MAT3327	<i>Optimal Control Theory</i>	3	45			MAT2306 MAT2311
58	MAT3328	<i>Monte-Carlo Methods</i>	3	45			MAT2307 MAT2308 MAT3307
59	MAT3329	<i>Numerical Analysis 2</i>	3	45			MAT2307
60	MAT3330	<i>Optimization 2</i>	3	45			MAT2309
61	MAT3323	<i>Discrete Optimization</i>	3	45			MAT2309 MAT3302
62	MAT3322	<i>Probability 2</i>	3	45			MAT2308 MAT3301 MAT3307
63	MAT3346	<i>Estimation theory and Statistical hypothesis testing</i>	3	45			MAT2311
64	MAT3321	<i>Stochastic processes</i>	3	45			MAT2308
65	MAT3333	<i>Mathematical Modelling 1</i>	3	45			MAT2304 MAT2308
66	MAT3334	<i>Mathematical Modelling 2</i>	3	45			MAT2314 MAT2311

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
67	MAT3335	<i>Computer Algebra</i>	3	45			INT1006 MAT3300
68	MAT3336	<i>Cryptography and Information Security</i>	3	45			INT1006
69	MAT3324	<i>Combinatorics</i>	3	45			MAT3302
70	MAT3345	<i>Stability theory of Differential Equations</i>	3	45			MAT2314
71	MAT3325	<i>History of Mathematics</i>	3	45			MAT2301 MAT2304
72	MAT3337	<i>Seminar on Applied Mathematics</i>	3	40		5	
V.3		Undergraduate thesis and the credits replacement	7				
V.3.1		<i>Undergraduate thesis</i>					
73	MAT4070	<i>Undergraduate Thesis</i>	7	45	60		
V.3.2		<i>The courses replacing the thesis (Students choose 1 in 2 below credits and 01 has not learnt credits in blocks of elective knowledge V.2)</i>					
74	MAT4076	<i>Selected Topics in Mathematics</i>	4	60			
75	MAT4072	<i>Selected Topics in Scientific Computing</i>	4	60			
		Total	137				