*** Talented Program in Mathematics** *(Dated September 28th, 2015)*

Total credits of the curriculum : 168 credits

- **General education knowledge: 34 credits**

  (*not including physical education, military defense education, and soft skills*)

- **Basic courses: 3 credits**
- **Fundamental courses: 40 credits**
- **Core courses: 45 credits**
- **Advanced courses: 46 credits**

  + Required: 24 credits

  + Elective: 12 credits

  + Undergraduate thesis: 10 credits

Available curriculum:

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	*Practice*	*Self-study*	
I		**General education knowledge** *(Not including subjects 12- 13)*	**34**				
1	PHI1004	*Fundamental Principles of Marxism - Leninism 1*	2	24	6		
2	PHI1005	*Fundamental Principles of Marxism - Leninism 2*	3	36	9		PHI1004
3	POL1001	*Ho Chi Minh Ideology*	2	20	10		PHI1005
4	HIS1002	*The Revolutionary line of the Communist Party of Vietnam*	3	42	3		POL1001
5	INT1003	*Introduction to Informatics 1*	2	10	20		
6	INT1006	*Introduction to Informatics 4*	3	15	30		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	20	50	5	FLF2103
11		*Physical Education*	4				
12		*National Defence Education*	8				
13		*Soft Skills*	3				
II		**Basic courses**	**3**				
14	HIS1056	*Fundamentals of Vietnamese Culture*	3	42	3		
III		**Fundamental courses**	**40**				
15	MAT2320	*Linear Algebra 1*	5	50	25		
16	MAT2321	*Linear Algebra 2*	5	50	25		MAT2320
17	MAT2302	*Analysis 1*	5	45	30		
18	MAT2303	*Analysis 2*	5	45	30		MAT2302
19	MAT2322	*Analysis 3*	5	45	30		MAT2303
20	PHY1159	*General Physic 1*	3	42	3		MAT2302
21	PHY1161	*General Physic 2*	3	42	3		MAT2302
22	PHY1260	*Modern Physics*	3	42	3		
23	MAT2314	*Differential Equations*	4	45	15		MAT2321 MAT2303
24	MAT2310	*Analytic Geometry*	2	20	10		MAT2321

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	*Practice*	*Self-study*	
IV		**Core courses**	**45**				
25	MAT2313	*Partial Differential Equations 1*	4	45	15		MAT2322 MAT2314
26	MAT2307	*Numerical Analysis 1*	4	45	15		INT1006 MAT2314
27	MAT2308	*Probability 1*	3	30	15		MAT2320 MAT2302
28	MAT2309	*Optimization 1*	3	30	15		MAT2321 MAT2303
29	MAT3300	*Abstract Algebra*	4	45	15		MAT2321
30	MAT3340	*Functional Analysis*	4	45	15		MAT2321 MAT2322
31	MAT3302	*Discrete Mathematics*	4	45	15		MAT2320 MAT2302
32	MAT3344	*Complex Analysis*	4	45	15		MAT2321 MAT2322
33	MAT3305	*General Topology*	3	45			MAT2302
34	MAT3306	*Introduction to Differential Geometry*	3	45			MAT2320 MAT3305
35	MAT3307	*Measure and Integration theory*	3	45			MAT2322
36	MAT2311	*Applied Statistics*	4	45	15		MAT2308
37	MAT3304	*Practicum in Computing*	2	15	15		MAT2307
V		**Advanced courses**	**46**				
V.1		***Required***	***24***				
38	MAT3347	*Galois theory*	4	60			MAT2320
39	MAT3339	*Linear Algebra 3*	3	45			MAT2321
40	MAT3318	*Analysis on Manifolds*	3	45			MAT3305 MAT2322
41	MAT3341	*Harmonic Analysis*	3	45			MAT3307
42	MAT3322	*Probability 2*	3	45			MAT2308
43	MAT3342	*Seminar 1*	3	20	10	15	
44	MAT3343	*Seminar 2*	3	20	10	15	
45	MAT3348	*Mini Project*	2		15	15	

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	*Practice*	*Self-study*	
V.2		***Elective*** *(Students select 1 in 2 following intensive instructions)*	**12**				
V.2.1		*The intensive credits on Mathematics Theory*	12/38				
46	MAT3310	*Introduction to Algebraic Topology*	3	45			MAT3300 MAT3305
47	MAT3311	*Theory of Groups and Group Representations*	3	45			MAT3300
48	MAT3312	*Algebraic geometry*	3	45			MAT3300 MAT3305
49	MAT3313	*Number Theory*	3	45			MAT2321 MAT2322
50	MAT3314	*Differential Topology*	3	45			MAT2314
51	MAT3315	*Topological Vector Space*	3	45			MAT3305
52	MAT3316	*Spectral Theory of Operators*	3	45			MAT3340
53	MAT3317	*Partial Differential Equations 2*	3	45			MAT3340 MAT3307
54	MAT3345	*Stability theory of Differential Equations*	3	45			MAT2314
55	MAT3320	*Integral equations*	3	45			MAT2314 MAT3340 MAT3344
56	MAT3101	*Introduction to Dynamical Systems*	3	45			MAT2314
57	MAT2312	*English for Specific Purposes*	2	30			

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	*Practice*	*Self-study*	
58	MAT3325	*History of Mathematics*	3	45			MAT2314 MAT2322
V.2.2		*The intensive credits in Applied Mathematics*	12/38				
59	MAT3327	*Optimal Control Theory*	3	45			MAT2313 MAT2311
60	MAT3329	*Numerical Analysis 2*	3	45			MAT2307
61	MAT3330	*Optimization 2*	3	45			MAT2309
62	MAT3323	*Discrete Optimization*	3	45			MAT2309 MAT3302
63	MAT3321	*Stochastic Proccesses*	3	45			MAT2308 MAT3101 MAT3307
64	MAT3333	*Mathematical Modelling 1*	3	45			MAT2309 MAT3302
65	MAT3334	*Mathematical Modelling 2*	3	45			MAT2314 MAT2311
66	MAT3346	*Estimation Theory and Statistical Hypothesis testing*	3	45			MAT2311
67	MAT3335	*Computer Algebra*	3	45			INT1006 MAT3300
68	MAT3336	*Cryptography and Information Security*	3	45			INT1006
69	MAT3324	*Combinatorics*	3	45			MAT3302
70	MAT2312	*English for Specific Purposes*	2		30		
71	MAT3325	*History of Mathematics*	3	45			MAT2314 MAT2322
V.3		**Undegraduate thesis**	**10**				
72	MAT4074	*Undergraduate Thesis*	10				
		Total	**168**				