

* **Chemistry** (*Dated September 30th, 2015*)

Toatl credits of the curriculum:	139 credits
- General education knoledge:	28 credits
<i>(Not including physical education, military defense education and soj</i>	
- Basic courses:	06 credits
- Fundamental courses:	28 credits
- Core courses:	40 credits
+ <i>Required:</i>	<i>29 credits</i>
+ <i>Elective:</i>	<i>11/28 credits</i>
- Advanced courses:	37 credits
+ <i>Required:</i>	<i>18 credits</i>
+ <i>Elective:</i>	<i>12/95 credits</i>
+ <i>Undergraduate thesis/ Courses replacing thesis:</i>	<i>7 credits</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>	28				
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 Informatic 1</i>	2	10	20		
6	INT1005	<i>Introduction to Informatic 3</i>	2	12	18		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	28				
III.1		Required	28				
15	MAT1090	<i>Linear Algebra</i>	3	30	15		

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
16	MAT1091	<i>Calculus 1</i>	3	30	15		
17	MAT1092	<i>Calculus 2</i>	3	30	15		MAT1091
18	MAT1101	<i>Probability and Statistics</i>	3	27	18		MAT1091
19	PHY1100	<i>Mechanics - Thermodynamics</i>	3	30	15		MAT1091
20	PHY1103	<i>Electromagnetism - Optics</i>	3	30	15		MAT1091
21	PHY1104	<i>General Physics Practice</i>	2		30		PHY1100 PHY1103
22	CHE1051	<i>Accelerated chemistry 1</i>	3	42		3	
23	CHE1052	<i>Accelerated chemistry 2</i>	3	42		3	
24	CHE1046	<i>Accelerated chemistry Lab</i>	2		30		CHE1052
IV		Core courses	40				
IV.1		Required	29				
25	CHE1077	<i>Inorganic chemistry 1</i>	3	40		5	CHE1052
26	CHE1054	<i>Inorganic chemistry Lab1</i>	2		30		CHE1052
27	CHE1055	<i>Organic chemistry 1</i>	4	56		4	CHE1052
28	CHE1191	<i>Organic chemistry Lab 1</i>	2		30		CHE1052
29	CHE2114	<i>Organic chemistry 2</i>	3	42		3	CHE1052
30	CHE1082	<i>Quantitative analysis</i>	3	42		3	CHE1052
31	CHE1058	<i>Quantitative analysis Lab</i>	2		30		CHE1052
32	CHE1083	<i>Physical chemistry 1</i>	3	42		3	CHE1051
33	CHE1085	<i>Physical chemistry Lab 1</i>	2		30		CHE1052
34	CHE1084	<i>Physical chemistry 2</i>	5	70		5	CHE1052
IV.2		Elective	11/28				
35	CHE2005	<i>Organic chemistry Lab 2</i>	2		30		CHE1052
36	CHE2016	<i>Organic chemistry Lab 3</i>	2		30		CHE1052
37	CHE2008	<i>Physical chemistry Lab 2</i>	2		30		CHE1052
38	CHE2017	<i>Physical chemistry Lab 3</i>	2		30		CHE1052
39	CHE1086	<i>Instrumental characterization</i>	3	42		3	CHE1052

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				Lecture	Practice	Self-study	
40	CHE1087	<i>Instrumental characterization Lab</i>	2		30		CHE1052
41	CHE1078	<i>Physical and physicochemical methods of chemical systems</i>	3	42		3	CHE1052
42	CHE1089	<i>Physical and physicochemical methods of chemical systems Lab</i>	2		30		CHE1052
43	CHE1067	<i>Chemistry of polymers</i>	2	28		2	CHE1052
44	CHE1048	<i>Colloid chemistry</i>	2	28		2	CHE1052
45	CHE1088	<i>Modern analysis</i>	3	42		3	CHE1052
46	CHE1075	<i>Fundamental of biochemistry</i>	3	42		3	CHE1052
V		Advanced courses	37				
V.1		Required	18				
47	CHE1090	<i>Inorganic chemistry 2</i>	3	42		3	CHE1077
48	CHE1065	<i>Material chemistry</i>	3	42		3	CHE1052
49	CHE1091	<i>Chemical engineering</i>	3	42		3	CHE1052
50	CHE1062	<i>Chemical engineering Lab</i>	2		30		CHE1052
51	CHE2009	<i>Scientific research report</i>	2		30		
52	CHE2010	<i>Industrial Practice</i>	2		30		CHE1091
53	CHE1092	<i>Molecular symmetry and group theory</i>	3	42		3	CHE1052
V.2		Elective	12/95				
54	CHE1079	<i>Environmental chemistry</i>	3	42		3	CHE1052
55	CHE2003	<i>Inorganic chemistry Lab2</i>	2		30		CHE1052
56	CHE3045	<i>Petrochemistry</i>	3	45			
57	CHE3000	<i>Structural characterization for inorganic chemistry</i>	3	45			CHE1077
58	CHE3135	<i>Complex Chemistry</i>	3	42		3	CHE1077
59	CHE3279	<i>Inorganic material</i>	3	42		3	CHE1077
60	CHE3188	<i>Nanomaterials and composites</i>	3	42		3	CHE1077

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				Lecture	Practice	Self-study	
61	CHE3189	<i>Bioinorganic chemistry</i>	3	42		3	CHE1077
62	CHE3190	<i>Chemistry of rare elements</i>	3	42		3	CHE1077
63	CHE3191	<i>Chemistry of radioactive elements</i>	3	42		3	CHE1077
64	CHE3192	<i>Applied inorganic chemistry</i>	3	42		3	CHE1077
65	CHE3013	<i>Sample preparation in analytical chemistry</i>	2	28		2	CHE1082
66	CHE3138	<i>Electrochemical analysis</i>	3	42		3	CHE1082
67	CHE3010	<i>Optical spectroscopic analysis</i>	2	28		2	CHE1082
68	CHE3140	<i>Separation method in analysis</i>	3	42		3	CHE1082
69	CHE3012	<i>Kinematic analysis methods</i>	2	28		2	CHE1082
70	CHE3014	<i>Chemometrics in analytical chemistry</i>	2	28		2	CHE1082
71	CHE3015	<i>Flow injection analysis</i>	2	28		2	CHE1082
72	CHE3196	<i>Complexes in analytic chemistry</i>	2	28		2	CHE1082
73	CHE3193	<i>Spectroscopic methods for organic chemistry</i>	3	42		3	CHE2114
74	CHE3141	<i>Organic synthesis</i>	3	42		3	CHE2114
75	CHE3247	<i>Organic catalyst</i>	3	42		3	CHE2114
76	CHE3142	<i>Chemistry of natural Compound</i>	3	42		3	CHE2114
77	CHE3187	<i>Fundamental of modern organic chemistry</i>	3	42		3	CHE2114
78	CHE3205	<i>Physical organic chemistry</i>	3	42		3	CHE2114
79	CHE3238	<i>Chromatographic methods in organic chemistry</i>	3	42		3	CHE2114
80	CHE3230	<i>Statical thermodynamics</i>	3	42		3	CHE1083
81	CHE3239	<i>Electrochemical kinetics</i>	3	42		3	CHE1083
82	CHE3144	<i>Catalytic theories and applications</i>	3	42		3	CHE1083
83	CHE3240	<i>Physical chemistry of polymers</i>	3	42		3	CHE1083
84	CHE3241	<i>Computational chemistry</i>	3	42		3	INT1005
85	CHE3242	<i>Molecular spectroscopy</i>	3	42		3	CHE1083
86	CHE3243	<i>Surface chemistry and applications</i>	3	42		3	CHE1083

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
87	CHE3244	<i>Computational simulation of chemical processes</i>	3	42		3	INT1005
V.3		<i>Undegraduate thesis/ Courses replacing thesis</i>	7				
88	CHE4052	<i>Undergraduate thesis</i>	7				
		<i>Courses replacing thesis</i>	7/15				
89	CHE3207	<i>Advanced inorganic chemistry</i>	3	42		3	CHE1077
90	CHE3245	<i>Advanced analytical chemistry</i>	4	55		5	CHE1082
91	CHE3246	<i>Advanced organic chemistry</i>	4	55		5	CHE2114
92	CHE3179	<i>Chemical kinetics and catalysis</i>	4	55		5	CHE1084
		Total	139				