

*** Chemical Engineering and Technology** (*Dated September 30th, 2015*)

Total credits of the curriculum: 140 credits

- **General education knowledge: 28 credits**

(Not including physical education, military defense education and soft skills)

- **Basic courses: 6 credits**

- **Fundamental courses: 28 credits**

- **Core courses: 35 credits**

+ *Required: 27 credits*

+ *Elective: 18/23 credits*

- **Advanced courses: 43 credits**

+ *Required: 26 credits*

+ *Elective: 10/80 credits*

+ *Undergraduate thesis: 7 credits*

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				
15	MAT1090	<i>Linear Algebra</i>	3	30	15		
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

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
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	35				
IV.1		Required	27				
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	CHE1082	<i>Quantitative analysis</i>	3	42		3	CHE1052
30	CHE1058	<i>Quantitative analysis Lab</i>	2		30		CHE1052
31	CHE2018	<i>Physical chemistry</i>	4	56		4	CHE1051
32	CHE2019	<i>Physical chemistry Lab</i>	2		30		CHE1052
33	CHE1091	<i>Chemical engineering</i>	3	42		3	CHE1052
34	CHE1062	<i>Chemical engineering Lab</i>	2		30		CHE1091
IV.2		Elective	8/23				
35	CHE1065	<i>Material chemistry</i>	3	42		3	CHE1052
36	CHE1086	<i>Instrumental characterization</i>	3	42		3	CHE1052
37	CHE1087	<i>Instrumental characterization Lab</i>	2		30		CHE1052
38	CHE1067	<i>Chemistry of polymers</i>	2	28		2	CHE1052
39	CHE1048	<i>Colloid chemistry</i>	2	28		2	CHE1052

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
40	CHE1088	<i>Modern methods of analysis</i>	3	42		3	CHE1052
41	CHE1075	<i>Fundamental of biochemistry</i>	3	42		3	CHE1052
42	CHE1078	<i>Physical and physicochemical methods of chemical systems</i>	3	42		3	CHE1052
43	CHE1089	<i>Physical and physicochemical methods of chemical systems Lab</i>	2		30		CHE1052
V		Advanced courses	43				
V.1		Required	26				
44	CHE2021	<i>Hydraulic pneumatic</i>	2	28		2	CHE1091
45	CHE3251	<i>Chemical reaction engineering</i>	3	42		3	CHE1091
46	CHE3252	<i>Thermodynamic engineering</i>	3	42		3	CHE1052
47	CHE3253	<i>Heat and mass transfer</i>	3	42		3	CHE1091
48	CHE3254	<i>Seperation technology</i>	3	42		3	CHE1091
49	CHE3255	<i>Chemical Engineering and Technology</i>	2		30		CHE1062
50	CHE1079	<i>Environmental chemistry</i>	3	42		3	
51	CHE3045	<i>Petroleum chemistry</i>	3	42		3	
52	CHE2009	<i>Scientific research report</i>	2		30		
53	CHE2010	<i>Industrial Practice</i>	2		30		CHE1091
V.2		Elective	10/80				
54	CHE3071	<i>Modeling and Optimization in chemical engineering processes</i>	2	28		2	
55	CHE3256	<i>Simulation in chemical technology</i>	2	28		2	
56	CHE3257	<i>Designing chemical technology</i>	2	28		2	

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
		<i>equipment</i>					
57	CHE3073	<i>Computational chemical technology</i>	2	28		2	
58	CHE1093	<i>Chemical processes analysis and control</i>	3	42		3	
59	CHE3258	<i>Technical drawing</i>	3	42		3	
60	CHE3259	<i>Chemical kinetics engineering</i>	3	42		3	
61	CHE3260	<i>Inorganic chemical technology</i>	3	42		3	CHE1091
62	CHE3261	<i>Organic chemical technology</i>	3	42		3	CHE1091
63	CHE3123	<i>Environmental treatment technology</i>	3	42		3	CHE1079
64	CHE3198	<i>Environmental chemistry Lab</i>	2		30		CHE1079
65	CHE3262	<i>Toxicology</i>	2	28		2	CHE1079
66	CHE3037	<i>Environmental analysis</i>	2	28		2	CHE1079
67	CHE3036	<i>Management and treatment of solid waste</i>	2	28		2	CHE1079
68	CHE3263	<i>Water and wastewater treatment</i>	2	28		2	CHE1079
69	CHE3264	<i>Exhaust gas treatment</i>	2	28		2	CHE1079
70	CHE3199	<i>Applied biological methods in environmental technology</i>	2	28		2	CHE1079
71	CHE3046	<i>Petroleum refining technology</i>	2	28		2	CHE3045
72	CHE3047	<i>Petrochemical technology</i>	2	28		2	
73	CHE3265	<i>Natural petroleum gas technology</i>	2	28		2	
74	CHE3200	<i>Petrochemistry Lab</i>	2		30		CHE3045
75	CHE3266	<i>Catalysis in petroleum refining and petrochemical industry</i>	2	28		2	CHE3045
76	CHE3049	<i>Additives mining,</i>	2	28		2	CHE3045

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
		<i>transportation and storage of petroleum</i>					
77	CHE3051	<i>Petroleum producing and gas fuel technology</i>	2	28		2	CHE3045
78	CHE3054	<i>Safety and environmental protection in the petroleum industry</i>	2	28		2	
79	CHE3055	<i>Hydrogen technology to handle petroleum products</i>	2	28		2	CHE3045
80	CHE3050	<i>Petroleum products</i>	2	28		2	
81	CHE3267	<i>Synthesis of materials</i>	2	28		2	CHE1065
82	CHE3284	<i>Methodological materials</i>	2	28		2	CHE1065
83	CHE3268	<i>Polymer and composite materials technology</i>	2	28		2	CHE1065
84	CHE3269	<i>Membrane materials technology</i>	2	28		2	CHE1065
85	CHE3270	<i>Nano and nanocomposite materials technology</i>	2	28		2	CHE1065
86	CHE3276	<i>Electrochemical and electroplating technology</i>	2	28		2	
87	CHE3027	<i>Corrosion and metal protection</i>	2	28		2	
88	CHE3060	<i>Biochemical technology</i>	2	28		2	CHE1075
89	CHE3063	<i>Food chemistry</i>	2	28		2	CHE1075

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
90	CHE3277	<i>Flavors and food additives</i>	2	28		2	
V.3		<i>Undergraduate thesis/ Courses replacing thesis</i>	7				
91	CHE4052	<i>Undergraduate thesis</i>	7				
		<i>Courses replacing thesis</i>	7				
92	CHE3158	<i>Clean production technology</i>	3	42		3	CHE1091
93	CHE3052	<i>Monomers and basic chemicals manufacturing technology from petroleum</i>	2	28		2	CHE3045
94	CHE3278	<i>Ceramic glaze and silicate materials technology</i>	2	28		2	CHE1052
		Total	140				