

*** Pharmaceutical Chemistry (*Honor Program*)**

Total credits of the curriculum:	155 credits
- General education knowledge:	33 credits
<i>(Not including physical education, military defense education and soft skills)</i>	
- Basic courses:	06 credits
- Fundamental courses:	28 credits
- Core courses:	40 credits
+ <i>Required:</i>	<i>28 credits</i>
+ <i>Elective:</i>	<i>12/22 credits</i>
- Advanced courses:	48 credits
+ <i>Required:</i>	<i>28 credits</i>
+ <i>Elective:</i>	<i>10/41 credits</i>
+ <i>Undergraduate thesis/ Courses replacing thesis:</i>	<i>10 credits</i>

Available curriculum

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
I		General education knowledge <i>(Not including subjects 11-13)</i>	33				
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	Revolutionary Strategies of Vietnamese Communist Party	3	42	3		POL1001
5	INT1003	Introduction to Informatic 1	2	10	20		
6	INT1005	Introduction to Informatic 3	2	12	18		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		Complementary skills	3				
II		Basic courses	6				
14	HIS1056	Fundamentals of Vietnamese Culture	3	42	3		
15	GEO1050	Earth and Life Sciences	3	30	10	5	
III		Fundamental courses	28				
16	MAT1090	Linear Algebra	3	30	15		
17	MAT1091	Calculus 1	3	30	15		
18	MAT1092	Calculus 2	3	30	15		MAT1091
19	MAT1101	Probability and Statistics	3	27	18		MAT1091
20	PHY1100	Mechanics - Thermodynamics	3	30	15		MAT1091

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
21	PHY1103	Electromagnetism - Optics	3	30	15		MAT1091
22	CHE1051	Accelerated chemistry 1	3	42		3	
23	CHE1052	Accelerated chemistry 2	3	42		3	
24	CHE1046	Accelerated chemistry Lab	2		30		CHE1051
25	CHE1099	English for specific purpose- Chem (***)	2	25	5		FLF2101
IV		Core courses	40/50				
IV.1		Required	28				
26	CHE1077	Inorganic chemistry	3	40		5	CHE1051
27	CHE1054	Inorganic chemistry Lab	2		30		CHE1051
28	CHE1055	Organic chemistry 1	4	56		4	CHE1052
29	CHE2114	Organic chemistry 2	3	40		5	CHE1055
30	CHE1191	Organic chemistry Lab 1	2		30		CHE1055
31	CHE1082	Analytical chemistry	3	42		3	CHE1052
32	CHE1058	Analytical chemistry Lab	2		30		CHE1082
33	CHE2018	Physical chemistry	4	56		4	CHE1051
34	CHE2019	Physical chemistry Lab	2		30		CHE2018
35	CHE1075	Fundamental of biochemistry	3	42		3	CHE1077
IV.2		Elective	12/22				
36	CHE1086	Instrumental characterization	3	42		3	CHE1082
37	CHE1087	Instrumental characterization Lab	2		30		CHE1086
38	CHE1078	Physical and physicochemical methods of chemical systems	3	42		3	CHE1052
39	CHE1089	Physical and physicochemical methods of chemical systems Lab	2		30		CHE1052
40	CHE1067	Chemistry of polymers	2	28		2	CHE2018
41	CHE1091	Technical Chemistry	3	42		3	CHE2018
42	CHE1062	Technical Chemistry Lab	2		30		CHE1091
43	CHE1048	Colloid chemistry	2	28		2	CHE2018

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
44	CHE2147	Green chemistry	3	45			CHE1052
V		Advanced courses	48/79				
V.1		Required	28				
45	CHE3282	Scientific Seminar (***)	2	30			
46	CHE2058	Medicinal chemistry	3	42		3	CHE2114
47	CHE2059	Chemistry of medicinal plant	3	42		3	CHE2114
48	CHE2060	Organic chemistry in drug synthesis	3	42		3	CHE2114
49	CHE2061	Practical in medicinal chemistry	2		30		CHE2058 CHE2059
50	CHE3171	Drug quantitation and pharmaceutical standards	3	42		3	CHE2058 CHE2059
51	CHE2014	Pharmacomodulation	3	42		3	CHE2059
52	CHE2009	Scientific research report	2		30		CHE2058 CHE2059
53	CHE2010	Industrial practice	2		30		CHE2058 CHE2059
54	CHE1118	Research project (***)	2		25	5	CHE1046
55	CHE3283	Cell biology and genetics	3	45			CHE1075
V.2		Elective	10/41				
56	CHE3180	Methods in medicinal plant research	2	27		3	CHE2059
57	CHE3181	Asymmetric synthesis	2	27		3	CHE2058
58	CHE3182	Indicator in medicine test	2	27		3	CHE2058
59	CHE2071	Microbiology	3	42		3	CHE2058 CHE2059
60	CHE3142	Chemistry of natural product	3	42		3	CHE2059
61	CHE3184	Biological activity screening and evaluation of medicinal plants	2	27		3	CHE2059
62	CHE3162	Antibiotics and immunology	3	42		3	CHE2058

No.	Code	Subject	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
63	CHE3185	Functional Food	2	27		3	CHE2059
64	CHE3186	Traditional medicine	2	27		3	CHE2058 CHE2059
65	CHE3174	Semi-synthesis of drugs	3	42		3	CHE2059
66	CHE3175	Synthesis of antibiotic, anti-HIV and anti-cancer drug	3	42		3	CHE2058
67	CHE3165	Synthesis of excipient	3	42		3	CHE2058 CHE2059
68	CHE2072	Enzyme and protein in drug synthesis	3	42		3	CHE2058 CHE2059
69	CHE3170	Structural determination of bioactive compound	3	42		3	CHE2058 CHE2059
70	CHE2015	Drug industry	3	42		3	CHE2058 CHE2059
71	CHE3285	Computational drug design	2	27		3	
V.3		Undegraduate thesis	10				
72	CHE4051	Undergraduate thesis (**)	10		130	20	
		Total	155				