

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

Total credits of the curriculum: **136 credits**

Including:

- General education knowledge: **28 credits**

- Basic courses: **6 credits**

- Fundamental courses: **28 credits**

- Core courses: **31 credits**

Required: *25 credits*

Elective: *6/18 credits*

- Advanced courses: **43 credits**

Required: *22 credits*

Elective: *12 credits*

Internship and graduate knowledge *9 credits*

Available curriculum

No.	Code	Subjects	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 1</i>	8				
12		<i>Soft Skills</i>	3				
II		Basic courses	6				
13	HIS1056	<i>Fundamentals of the 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	MAT1192	<i>Calculus 2</i>	2	20	10		MAT1091
18	MAT1101	<i>Probability and Statistics</i>	3	27	18		MAT1091
19	PHY1100	<i>Mechanics – Thermodynamics</i>	3	30	15		MAT1091

No.	Code	Subjects	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
20	PHY1103	<i>Electromagnetism - Optics</i>	3	30	15		MAT1091
21	CHE1080	<i>General Chemistry</i>	3	42		3	
22	CHE1081	<i>Organic Chemistry</i>	3	42		3	CHE1080
23	CHE1057	<i>Analytic Chemistry</i>	3	42		3	CHE1080
24	CHE1069	<i>General chemistry Lab</i>	2		30		
IV		Core courses	31				
IV.1		Required	25				
25	BIO2043	<i>English in Biology</i>	2	20	10		FLF2102
26	BIO2058	<i>Cell Biology</i>	3	25	15	5	
27	BIO2202	<i>Biochemistry</i>	3	25	15	5	BIO2058
28	BIO2203	<i>Genetics</i>	3	27	15	3	BIO2058
29	BIO2201	<i>Molecular Biology</i>	3	25	15	5	BIO2058
30	BIO2204	<i>Microbiology</i>	3	27	15	3	BIO2203
31	BIO2205	<i>Biostatistics</i>	3	15	30		MAT1101
32	BIO2206	<i>Human and Animal Physiology</i>	3	25	15	5	BIO2058
33	BIO2208	<i>Tropical Ecology and Conservation</i>	2	5	25		BIO3200
IV.2		Elective	6/18				
34	BIO2207	<i>Developmental Biology</i>	3	30	10	5	BIO2058
35	BIO2210	<i>Biophysics</i>	3	30	10	5	BIO2058 PHY1103
36	BIO2209	<i>Biodiversity</i>	3	30	10	5	BIO3200
37	BIO2092	<i>Biological Nomenclature</i>	3	40		5	BIO3201
38	BIO2212	<i>Proteomics and Structural Biology</i>	3	40		5	BIO2202
39	BIO2044	<i>Applied Microbiology</i>	3	40		5	BIO2204
V		Advanced courses	43				
V.1		Required	22				
40	BIO3200	<i>Botany</i>	4	33	24	3	BIO2058
41	BIO3201	<i>Invertebrate Zoology</i>	3	27	15	3	BIO2058

No.	Code	Subjects	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
42	BIO3202	<i>Vertebrate Zoology</i>	3	27	15	3	BIO3201
43	BIO3204	<i>Human Biology</i>	3	30	10	5	BIO2206
44	BIO3203	<i>Plant Physiology</i>	3	30	10	5	BIO3200
45	BIO3205	<i>Basic Ecology</i>	3	30	10	5	BIO3202
46	BIO3206	<i>Immunology</i>	3	40		5	BIO2202
V.2		<i>Elective</i>	12				
V.2.1		<i>Intensive subjects</i> <i>(Students select subjects of an intensive group)</i>					
		Group A: Molecular Biology and Cell	9/27				
47	BIO3207	<i>Principles of molecular genetics</i>	3	30	10	5	BIO2203
48	BIO3208	<i>Principles of genetic breeding</i>	3	30	10	5	BIO2203
49	BIO3209	<i>Human Genetics</i>	3	30	10	5	BIO2203
50	BIO3210	<i>Biochemistry of Bioactive Compounds</i>	3	40		5	BIO2202
51	BIO3211	<i>Enzymology</i>	3	30	10	5	BIO2202
52	BIO3213	<i>Medical Microbiology</i>	3	30	12	3	BIO2204
53	BIO3250	<i>Principles of molecular microbiology</i>	3	30	12	3	BIO2204
54	BIO3124	<i>Seminars in Stem Cells</i>	3	10	30	5	BIO2058
55	BIO3327	<i>Tumor Biology</i>	3	30	10	5	BIO2058
		Group B: Biological body	9/27				
56	BIO3217	<i>Plant Cell and Tissue Technology</i>	3	40		5	BIO3203
57	BIO3218	<i>Plant Growth and Development</i>	3	40		5	BIO3203
58	BIO3095	<i>Microalgae Physiology</i>	3	40		5	BIO3200
59	BIO3097	<i>Fungal Biology</i>	3	40		5	BIO3200
60	BIO3220	<i>Basic Endocrinology</i>	3	40		5	BIO2206
61	BIO3221	<i>Reproductive Physiology</i>	3	40		5	BIO3204
62	BIO3222	<i>Human Molecular Biology</i>	3	40		5	BIO2201
63	BIO3223	<i>Nutrition</i>	3	40		5	BIO3204
64	BIO3224	<i>Neurobiology</i>	3	40		5	BIO2206
		Group C: Biological populations	9/36				
65	BIO3096	<i>Morphological evolution of angiosperm</i>	3	40		5	BIO3200

No.	Code	Subjects	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
66	BIO3225	<i>Botanical Nomenclature</i>	3	40		5	BIO3200
67	BIO3226	<i>Plant Research Methods</i>	3	25	15	5	BIO3200
68	BIO3172	<i>Medical Invertebrate Zoology</i>	3	40		5	BIO3201
69	BIO3228	<i>General Entomology</i>	3	30	10	5	BIO3201
70	BIO3229	<i>General Hydrobiology</i>	3	30	10	5	BIO3201
71	BIO3230	<i>Biogeography</i>	3	40		5	BIO3202
72	BIO3232	<i>Fisheries Biology</i>	3	30	10	5	BIO3202
73	BIO3242	<i>Population Biology</i>	3	40		5	BIO3202
74	BIO3233	<i>Ecosystem Management</i>	3	40		5	BIO3202
75	BIO3243	<i>Applied Ecology</i>	3	40		5	BIO3205
76	BIO3234	<i>Environmental Ecology</i>	3	40		5	BIO3205
V.2.2		<i>Supplement</i>	3/9				
77	BIO3302	<i>Introduction to Biotechnology</i>	3	40		5	BIO2202
78	BIO3301	<i>Bioinformatics</i>	3	30	10	5	BIO2202
79	BIO3237	<i>Evolutionary Biology</i>	3	30	10	5	BIO2203
V.3		Internship and undergraduate knowledge	9				
80	BIO4076	<i>Scientific essay</i>	2		25	5	
81	BIO4071	<i>Graduation thesis or final examination</i>	7				
		<i>Courses replacing undergraduate thesis</i>	7/16				
82	BIO3098	<i>Cells and Organisms</i>	3	30	10	5	BIO2058
83	BIO3099	<i>Organisms and Population</i>	3	30	10	5	BIO3205
84	BIO3169	<i>Plants and Humanity</i>	2	25		5	BIO3200
85	BIO3001	<i>Industrial Microbiology</i>	2	25		5	BIO3213

No.	Code	Subjects	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
86	BIO3174	<i>Genetic Engineering</i>	2	25		5	BIO2203
87	BIO3064	<i>Environment and Sustainable Development</i>	2	25		5	BIO3205
88	BIO3171	<i>Marine Biology</i>	2	25		5	BIO3202
		Total	136				