Nong Lam University
Academic Affairs Department

CREDIT BASED CURRICULUM

(Pursuant to the decision: 3000/QD-DHNL-DT, November -24-2014 of President)

Credit based Training System: Formal Undergraduate (Full - time)
Faculty : Department of Biotechnology
Discipline : Biotechnology
Minimum credits : 135 Credits
Minimum GPA: 2.0

Major : Environmental Biotechnology

No	Module	English subjects	Credits	Total Number	Theory	Practice	Internship	Project	Thesis	Year	SM	Prior study	Prerequisite	Concurrent
I. Fundamental knowledge :														
I.1 Required subjects														
1	202113	Advanced Mathematics B2	2.0	30.0	30.0	0.0	0	0.0	0.0	1	1			
2	202301	General Chemistry	3.0	45.0	45.0	0.0	0	0.0	0.0	1	1			
3	202304	General Chemistry Laboratory	1.0	30.0	0.0	30.0	0	0.0	0.0	1	1			202301
4	202401	General Biology	2.0	30.0	30.0	0.0	0	0.0	0.0	1	1			
5	202402	General Biology Laboratory	1.0	30.0	0.0	30.0	0	0.0	0.0	1	1			202401
6	202501	Physical Education 1	1.0	45.0	0.0	45.0	0	0.0	0.0	1	1			
7	202622	General Law	2.0	30.0	30.0	0.0	0	0.0	0.0	1	1			
8	213603	English 1	4.0	60.0	60.0	0.0	0	0.0	0.0	1	1			
9	214103	General Informatics	3.0	60.0	30.0	30.0	0	0.0	0.0	1	1			
10	200104	History of the Communist's Party of Vietnam	3.0	45.0	45.0	0.0	0	0.0	0.0	1	2			
11	200201	Military training (theory)	3.0	45.0	45.0	0.0	0	0.0	0.0	1	2			
12	200202	Military training (practice)	3.0	90.0	0.0	90.0	0	0.0	0.0	1	2			
13	202201	General Physics 1	2.0	30.0	30.0	0.0	0	0.0	0.0	1	2			
14	202502	Physical Education 2	1.0	45.0	0.0	45.0	0	0.0	0.0	1	2			
15	213604	English 2	3.0	45.0	45.0	0.0	0	0.0	0.0	1	2			
16	200106	Phylosophy of Marxism and Leninism	5.0	75.0	75.0	0.0	0	0.0	0.0	2	1			
17	202121	Probability and Statistics	3.0	45.0	45.0	0.0	0	0.0	0.0	2	1	202113		
18	200107	Ho Chi Minh Ideology	2.0	30.0	30.0	0.0	0	0.0	0.0	2	2			
Total			**44.0**	**810.0**	**540.0**	**270.0**	**0**	**0.0**	**0.0**					

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II. Fundamental specialized knowledge :														
II.1 Required subjects														
1	211107	Introduction of Biotechnology	2.0	30.0	30.0	0.0	0	0.0	0.0	1	2	202401		
2	211215	Molecular Genetics	3.0	60.0	30.0	30.0	0	0.0	0.0	1	2			
3	211506	Biological Laboratory Management	1.0	15.0	15.0	0.0	0	0.0	0.0	1	2			
4	212104	Environmental ecology	2.0	30.0	30.0	0.0	0	0.0	0.0	1	2	202401		
5	211134	Biodiversity and Conservation of Genetic Resourses	2.0	30.0	30.0	0.0	0	0.0	0.0	2	1	211215		
6	211138	Microbial Biology	2.0	30.0	30.0	0.0	0	0.0	0.0	2	1			
7	211139	Experiment in Microbial Biology	1.0	30.0	0.0	30.0	0	0.0	0.0	2	1			211138
8	211106	Molecular Biology	4.0	75.0	45.0	30.0	0	0.0	0.0	2	2		211107	
9	211133	Ecological Technology	3.0	60.0	30.0	30.0	0	0.0	0.0	2	2			
10	211906	Research Methodology	3.0	60.0	30.0	30.0	0	0.0	0.0	2	2	202121		
11	211123	English for Biotechnology 1	1.0	15.0	15.0	0.0	0	0.0	0.0	3	1			
12	211124	English for Biotechnology 2	1.0	15.0	15.0	0.0	0	0.0	0.0	3	2			
13	211127	English for Environmental Biotechnology	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1	211124		
14	211403	ISO quality management	1.0	15.0	15.0	0.0	0	0.0	0.0	4	1			
Total			28.0	495.0	345.0	150.0	0	0.0	0.0					
II.2 Elective subject - completed 0101/accumulated at least 2 credits : 3 credits														
1	211321	Climate and Climate Change	1.0	15.0	15.0	0.0	0	0.0	0.0	2	1			
2	211324	Environmental Resources Management	2.0	30.0	30.0	0.0	0	0.0	0.0	2	1			
3	211420	Clean Energy and Bioloical Energy	2.0	30.0	30.0	0.0	0	0.0	0.0	2	1			
Total			5.0	75.0	75.0	0.0	0	0.0	0.0					

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No	Module	English subjects	Credits	Total Number	Theory	Practice	Internship	Project	Thesis	Year	SM	Prior study	Prerequisite	Concurrent
III. Specialized knowledge :														
III.1 Required subjects														
1	211129	Technical Drawing	1.0	15.0	15.0	0.0	0	0.0	0.0	2	1			
2	211308	Environmental Chemistry and Toxicity	3.0	45.0	45.0	0.0	0	0.0	0.0	2	1			
3	211130	Experiment in Technical Drawing	1.0	30.0	0.0	30.0	0	0.0	0.0	2	2	211129		
4	211319	Environmental Pollution Assessment	2.0	30.0	30.0	0.0	0	0.0	0.0	2	2			
5	211323	Experiment in Environmental Pollution	1.0	30.0	0.0	30.0	0	0.0	0.0	2	2	211308		
6	211519	Biosafety	1.0	15.0	15.0	0.0	0	0.0	0.0	2	2		211107	
7	211135	Soil and Soil Degradation	3.0	45.0	45.0	0.0	0	0.0	0.0	3	1		211308	
8	211211	Advanced Microbiology	2.0	30.0	30.0	0.0	0	0.0	0.0	3	1		211138	
9	211322	Experiment in Environmental Pollution	1.0	30.0	0.0	30.0	0	0.0	0.0	3	1	211319		
10	211402	Biotechnological Equipment and Techniques	3.0	75.0	15.0	60.0	0	0.0	0.0	3	1	211106	211506	
11	211418	Bioindicators	3.0	45.0	45.0	0.0	0	0.0	0.0	3	1		211138	
12	211111	Fermentation Technology I	3.0	60.0	30.0	30.0	0	0.0	0.0	3	2	202201		
13	211113	Genetics Engineering I	3.0	60.0	30.0	30.0	0	0.0	0.0	3	2	211106		
14	211212	Experiment in Advanced Microbiology	1.0	30.0	0.0	30.0	0	0.0	0.0	3	2	211211		
15	211404	Development and Commercialization of Biotechnological Products	2.0	45.0	15.0	30.0	0	0.0	0.0	3	2			
16	211419	Experiment in Bioindicator	1.0	30.0	0.0	30.0	0	0.0	0.0	3	2	211418		
17	211902	Laboratory works	2.0	60.0	0.0	0.0	60	0.0	0.0	3	2	211402		
18	211136	Principbles of geographic information	1.0	15.0	15.0	0.0	0	0.0	0.0	4	1			
Total			34.0	690.0	330.0	300.0	60	0.0	0.0					

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III.2 Elective subject - completed 0201/accumulated at least 2 credits : 4 credits														
1	211312	Ethanol Production Technology By Biology	2.0	30.0	30.0	0.0	0	0.0	0.0	3	1	211106		
2	211313	Biogas Production Technology	2.0	30.0	30.0	0.0	0	0.0	0.0	3	1	211106		
3	211513	Solid Waste Treatment Technology	2.0	45.0	15.0	30.0	0	0.0	0.0	3	1		211308	
4	211514	Domestric Wate Treatment Technology	2.0	45.0	15.0	30.0	0	0.0	0.0	3	1		211308	
5	212316	Cleaner Production	2.0	30.0	30.0	0.0	0	0.0	0.0	3	1		211308	
Total			10.0	180.0	120.0	60.0	0	0.0	0.0					
III.3 Elective subject - completed 0301/accumulated at least 2 credits : 3 credits														
1	211515	Wastewater Treatment Technology	2.0	45.0	15.0	30.0	0	0.0	0.0	3	2		211319	
2	211516	Waste Air Treatment Technology	1.0	15.0	15.0	0.0	0	0.0	0.0	3	2		211319	
3	211517	Biological Treatment Technology of Agricultural Residue	1.0	15.0	15.0	0.0	0	0.0	0.0	3	2		211319	
Total			4.0	75.0	45.0	30.0	0	0.0	0.0					
III.4 Elective subject - completed 0401/accumulated at least 2 credits : 4 credits														
1	211213	Microbiology in Treatment of Pollutants	3.0	60.0	30.0	30.0	0	0.0	0.0	4	1		211418	
2	211421	Application of Enzyme in Treatment	3.0	60.0	30.0	30.0	0	0.0	0.0	4	1		211418	
3	211423	Application of Algae in Environment	1.0	15.0	15.0	0.0	0	0.0	0.0	4	1		211418	
4	211425	Application of Earthworm in Environment	1.0	15.0	15.0	0.0	0	0.0	0.0	4	1		211418	
Total			8.0	150.0	90.0	60.0	0	0.0	0.0					
III.5 Elective subject - completed 0501/accumulated at least 2 credits : 3 credits														
1	211422	Application of GMO in Environment	1.0	15.0	15.0	0.0	0	0.0	0.0	4	1		211418	
2	211424	Application of fungi on Environment	1.0	15.0	15.0	0.0	0	0.0	0.0	4	1		211418	
3	211428	Insect in Treatment of Pollutants	2.0	45.0	15.0	30.0	0	0.0	0.0	4	1		211418	
4	211429	Phytoremediation	2.0	45.0	15.0	30.0	0	0.0	0.0	4	1		211418	

Total			6.0	120.0	60.0	60.0	0	0.0	0.0					
III.6 Elective subject - completed 0601/accumulated at least 2 credits : 2 credits														
1	211426	Application of Nuclear Technology in Treatment of Pollutants	1.0	15.0	15.0	0.0	0	0.0	0.0	3	2		211319	
2	211427	Nanotechnogy for Pollution Control	1.0	15.0	15.0	0.0	0	0.0	0.0	3	2		211319	
3	211503	Advanced Chromatography	1.0	30.0	0.0	30.0	0	0.0	0.0	3	2		211402	
4	211505	Advanced PCR	1.0	30.0	0.0	30.0	0	0.0	0.0	3	2		211402	
Total			4.0	90.0	30.0	60.0	0	0.0	0.0					
III.7 Elective subject - completed 0701/accumulated at least 2 credits : 10 credits														
1	211318	Writing a Scientific paper	2.0	30.0	30.0	0.0	0	0.0	0.0	4	2			
2	211320	Proteomics	3.0	45.0	45.0	0.0	0	0.0	0.0	4	2			
3	211903	Thesis	10.0	150.0	0.0	0.0	0	150.0	0.0	4	2			
4	211904	Minor Thesis	5.0	75.0	0.0	0.0	0	75.0	0.0	4	2			
5	211905	Applied Biotechnology	3.0	45.0	45.0	0.0	0	0.0	0.0	4	2			
6	211907	Genomic	2.0	30.0	30.0	0.0	0	0.0	0.0	4	2			
7	211908	Application of Biotechnology in Environment	3.0	45.0	45.0	0.0	0	0.0	0.0	4	2			
Total			28.0	420.0	195.0	0.0	0	225.0	0.0					

Total credits of required subjects : 106 credits
Total credits of elective subjects : 29 credits

(*) Conditional Study Program, Certificates will be issued upon completion

Graduation Methods:

1.Thesis (10 credits)
2.Essay (5 credits) + completion of 5 credits of elective subjects III.7
3.The subjects can replace thesis (completion of 10 credits of elective subjects III.7)

Ho Chi Minh city, November 24-2014

President of Nong Lam University - Ho Chi Minh City	Head of Academic Affairs Department	Dean of Department of Biotechnology
Assoc.Prof.Dr.Nguyen Hay	Dr.Tran Dinh Ly	Assoc.Prof.Dr.Le Dinh Don