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 : Chemical Engineering Department
Discipline : Chemical Engineering and Processing Major: Biomass Conversion Technology and Biorefinery
Minimum credits : 135 Credits
Minimum GPA: 2.0

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	200104	History of the Communist's Party of Vietnam	3.0	45.0	45.0	0.0	0	0.0	0.0	1	1			
2	202108	Advanced Mathematics A1	3.0	45.0	45.0	0.0	0	0.0	0.0	1	1			
3	202301	General Chemistry	3.0	45.0	45.0	0.0	0	0.0	0.0	1	1			
4	202304	General Chemistry Laboratory	1.0	30.0	0.0	30.0	0	0.0	0.0	1	1			
5	202501	Physical Education 1	1.0	45.0	0.0	45.0	0	0.0	0.0	1	1			
6	202622	General Law	2.0	30.0	30.0	0.0	0	0.0	0.0	1	1			
7	214103	General Informatics	3.0	60.0	30.0	30.0	0	0.0	0.0	1	1			
8	200106	Phylosophy of Marxism and Leninism	5.0	75.0	75.0	0.0	0	0.0	0.0	1	2			
9	200201	Military training (theory)	3.0	45.0	45.0	0.0	0	0.0	0.0	1	2			
10	200202	Military training (practice)	3.0	90.0	0.0	90.0	0	0.0	0.0	1	2			
11	202109	Advanced Mathematics A2	3.0	45.0	45.0	0.0	0	0.0	0.0	1	2			
12	202502	Physical Education 2	1.0	45.0	0.0	45.0	0	0.0	0.0	1	2			
13	213603	English 1	4.0	60.0	60.0	0.0	0	0.0	0.0	1	2			
14	213604	English 2	3.0	45.0	45.0	0.0	0	0.0	0.0	2	1	213603		
15	217301	General Biochemistry	2.0	30.0	30.0	0.0	0	0.0	0.0	2	1			
16	217304	General Microbiology	2.0	30.0	30.0	0.0	0	0.0	0.0	2	1			
17	200107	Ho Chi Minh Ideology	2.0	30.0	30.0	0.0	0	0.0	0.0	4	2			
Total			44.0	795.0	555.0	240.0	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
I.2 Elective subject - completed 0101/accumulated at least 2 credits : 3 credits														
1	202201	General Physics 1	2.0	30.0	30.0	0.0	0	0.0	0.0	1	2			
2	202202	Physics Experiments 1	1.0	30.0	0.0	30.0	0	0.0	0.0	1	2			
3	202302	Analytical Chemistry	2.0	30.0	30.0	0.0	0	0.0	0.0	1	2	202301		
4	202305	Analytical Chemistry Laboratory	1.0	30.0	0.0	30.0	0	0.0	0.0	1	2			
Total			6.0	120.0	60.0	60.0	0	0.0	0.0					
II. Fundamental specialized knowledge :														
II.1 Required subjects														
1	206428	Technical drawing	2.0	30.0	30.0	0.0	0	0.0	0.0	2	1			
2	217111	Physical Chemistry 1	2.0	30.0	30.0	0.0	0	0.0	0.0	2	1			
3	217109	Physical Chemistry 2	3.0	60.0	30.0	30.0	0	0.0	0.0	2	2			
4	217202	Introduction to Chemical Engineering	3.0	45.0	45.0	0.0	0	0.0	0.0	2	2			
5	217209	Mechanical Separation Process	3.0	55.0	35.0	20.0	0	0.0	0.0	2	2			
6	217302	Biochemistry Technology and Application	2.0	30.0	30.0	0.0	0	0.0	0.0	2	2	217301		
7	217303	Organic Chemistry Synthesis Process	2.0	30.0	30.0	0.0	0	0.0	0.0	2	2	202301		
8	217307	General Electrical Engineering	2.0	38.0	23.0	15.0	0	0.0	0.0	2	2			
9	217901	Study Tours in Industry	1.0	30.0	0.0	0.0	30	0.0	0.0	2	2			
10	217110	Physical properties of material	2.0	38.0	23.0	15.0	0	0.0	0.0	3	1	217111		
11	217204	Heat and Mass Transfer	3.0	60.0	30.0	30.0	0	0.0	0.0	3	1	217111 217209		
12	217211	Instrumentation and Process Control	2.0	35.0	25.0	10.0	0	0.0	0.0	3	1			
13	217224	Statistics and Experimental Design	3.0	60.0	30.0	30.0	0	0.0	0.0	3	1			
14	217226	Computer Application in Chemical Engineering	3.0	60.0	15.0	45.0	0	0.0	0.0	3	1			217204
15	217306	Biochemistry Technology and Application Laboratory	1.0	30.0	0.0	30.0	0	0.0	0.0	3	1	217302		
Total			34.0	631.0	376.0	225.0	30	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
II.2 Elective subject - completed 0201/accumulated at least 2 credits : 6 credits														
1	217106	Organic Chemistry	2.0	45.0	15.0	30.0	0	0.0	0.0	2	1			
2	217107	Inorganic Chemistry	2.0	45.0	15.0	30.0	0	0.0	0.0	2	1			
3	217101	Instrumental Analytical Chemistry	3.0	60.0	30.0	30.0	0	0.0	0.0	2	2	202302 202305		
4	217108	Analytical Methods for Physio-chemical components	2.0	38.0	23.0	15.0	0	0.0	0.0	2	2	202301 202304		
5	217222	Freezing Technology and Application	2.0	38.0	23.0	15.0	0	0.0	0.0	3	1			
6	217707	Analytical Methods for Molecular Spectrometry	2.0	30.0	30.0	0.0	0	0.0	0.0	3	1			
7	217708	Methods of Separation & Refinery	2.0	38.0	23.0	15.0	0	0.0	0.0	3	1			
Total			15.0	294.0	159.0	135.0	0	0.0	0.0					
III. Specialized knowledge :														
III.1 Required subjects														
1	217212	Process Engineering Laboratory	1.0	30.0	0.0	30.0	0	0.0	0.0	3	2			217223
2	217215	Reaction Engineering	2.0	30.0	30.0	0.0	0	0.0	0.0	3	2	217111 217109		
3	217216	Catalyst Technology	2.0	30.0	30.0	0.0	0	0.0	0.0	3	2	217111 217109		
4	217223	Chemical Separation Process	3.0	60.0	30.0	30.0	0	0.0	0.0	3	2	217204		
5	217607	Introduction to Biosystrem Engineering	2.0	30.0	30.0	0.0	0	0.0	0.0	3	2	217301 217304		
6	217902	Engineering Design Project	2.0	45.0	15.0	0.0	0	30.0	0.0	3	2	217202		217223 217215
7	217903	Practical Work in Industry	1.0	30.0	0.0	0.0	30	0.0	0.0	3	2	217202		
8	217909	Technical Seminar	1.0	30.0	0.0	30.0	0	0.0	0.0	3	2			
9	217610	Biofuel engineering	3.0	60.0	30.0	30.0	0	0.0	0.0	4	1	217301 217111		

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												217204		
10	217801	Natural Cosmetic	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1		217204 217109	
11	217802	Enzymatic Technology	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1	217301		
12	217808	Practice of Cosmetic and Enzymatic Technology	2.0	60.0	0.0	60.0	0	0.0	0.0	4	2	217801 217802		
Total			23.0	465.0	225.0	180.0	30	30.0	0.0					
III.2 Elective subject - completed 0301/accumulated at least 2 credits : 15 credits														
1	217219	Surfactant	2.0	30.0	30.0	0.0	0	0.0	0.0	3	2	202301		
2	217225	Applied Membrane Technology	2.0	38.0	23.0	15.0	0	0.0	0.0	3	2	217204		
3	217305	Analysis of Residues and Toxic In Agriculture Products	2.0	45.0	15.0	30.0	0	0.0	0.0	3	2			
4	217603	Packaging Technology	2.0	30.0	30.0	0.0	0	0.0	0.0	3	2			
5	217217	Chemical Plant Design	2.0	45.0	15.0	30.0	0	0.0	0.0	4	1	217204 206428 217202 217215		
6	217218	Machine and Equipment in Chemical Industry	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1	217204		
7	217414	Quality Management for Chemical Plants	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1	217901		
8	217416	Polymer and Biopolymer	3.0	52.0	38.0	14.0	0	0.0	0.0	4	1		217209	
9	217506	Technology of Aromatic Chemicals	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1	217303		
10	217601	Natural Pharmaceuticals	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1	217303		
11	217609	Quality Management for Food Plants	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1	217901		
12	217803	Biogas Engineering and Technology	3.0	60.0	30.0	30.0	0	0.0	0.0	4	1	217304 217204		
13	217804	Gasification and Pyrolysis Technology	3.0	60.0	30.0	30.0	0	0.0	0.0	4	1	217111 217109 217204		
14	217805	Biosensory	3.0	60.0	30.0	30.0	0	0.0	0.0	4	1	217304		

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15	217806	Bio-instrumentation	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1	217211		
16	217807	Biomass Generation Engineering	2.0	30.0	30.0	0.0	0	0.0	0.0	4	1			
17	217809	Lubricants and Biomaterial	3.0	60.0	30.0	30.0	0	0.0	0.0	4	1			
Total			39.0	690.0	481.0	209.0	0	0.0	0.0					
III.3 Elective subject - completed 0401/accumulated at least 2 credits : 10 credits														
1	217907	Research Project	10.0	150.0	0.0	0.0	0	0.0	150.0	4	2			
2	217908	Minor Research project	5.0	75.0	0.0	0.0	0	75.0	0.0	4	2			
Total			15.0	225.0	0.0	0.0	0	75.0	150.0					

Total credits of required subjects : 101 credits
Total credits of elective subjects : 34 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.2
3. The subjects can replace thesis (completion of 10 credits of elective subjects III.2)

Ho Chi Minh city, November 24-2014

President of Nong Lam University - Ho Chi Minh City	Head of Academic Affairs Department	Dean of Faculty of Chemical Engineering and Processing
ĐẠI HỌC NÔNG LÂM TP. HỒ CHÍ MINH		
Assoc.Prof.Dr.Nguyen Hay	Dr.Tran Dinh Ly	Assoc.Prof.Dr.Truong Vinh