Training Program Framework

No.	Course Code	Education Block / Course Title	Total Credits	Theory	Practice / Lab	Sem. / Assign.	Project	Intern.	Term	Prereq. Code
9.1		**GENERAL EDUCATION**	49	46	3	0	0	0		
9.1.1		**Social Sciences and Humanities**	19	19	0	0	0	0		
9.1.1.1		**Compulsory**	15	15	0	0	0	0		
	LP6010	Marxist–Leninist Philosophy	3	3	0	0	0	0	1	
	LP6025	Marxist–Leninist Political Economy	2	2	0	0	0	0	2	
	LP6026	Scientific Socialism	2	2	0	0	0	0	2	
	LP6027	History of the Communist Party of Vietnam	2	2	0	0	0	0	4	
	LP6022	Ho Chi Minh Thought	2	2	0	0	0	0	3	
	LP6021	Introduction to Law	2	2	0	0	0	0	3	
	BS6046	Intercultural Communication	2	2	0	0	0	0	7	
9.1.1.2		***Elective (Choose one course from each group)***	4	4	0	0	0	0		
Tc1		**Group 1**	2	2	0	0	0	0	7	
	BS6047	Introduction to Scientific Research	2	2	0	0	0	0	7	
	SE6257	Project Management	2	2	0	0	0	0	7	
	BS6048	Labour Relations and Employment	2	2	0	0	0	0	7	
	BS6049	People and the Environment	2	2	0	0	0	0	7	
	SE6218	Introduction to Economics	2	2	0	0	0	0	7	
	SM6186	Professional Work Practices	2	2	0	0	0	0	7	
Tc2		**Group 2**	2	2	0	0	0	0		
	BS6050	Introduction to Music	2	2	0	0	0	0	7	
	BS6051	Introduction to Art Studies	2	2	0	0	0	0	7	
	BS6052	Introduction to Fine Arts	2	2	0	0	0	0	7	
9.1.2		Choose One of Four Foreign Languages	10	10	0	0	0	0		
		English Language Program								
	SL6579	English for Chemical Technology 1	5	5	0	0	0	0	4	
		English for Chemical Technology 2	5	5	0	0	0	0	5	
		Chinese Language Program								
	SL6347	Chinese 1	5	5	0	0	0	0	4	
	SL6348	Chinese 2	5	5	0	0	0	0	5	
		Korean Language Program								

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	SL6351	Korean 1	5	5	0	0	0	0	4	
	SL6352	Korean 2	5	5	0	0	0	0	5	
		Japanese Language Program								
	SL6349	Japanese 1	5	5	SL6580	0	0	0	4	
	SL6350	Japanese 2	5	5	0	0	0	0	5	
		German Language Program								
	FL6582	German 1	5	5	0	0	0	0	4	
	FL6583	German 2	5	5	0	0	0	0	5	
9.1.3		**Mathematics and Natural Sciences**	20	17	3	0	0	0		
9.1.3.1		**Compulsory**	15	13	2	0	0	0		
	BS6002	Calculus	3	3	0	0	0	0	1	
	CT6279	General Chemistry	3	2	1	0	0	0	1	
	BS6027	General Physics	3	2	1	0	0	0	1	
	BS6037	Linear Algebra	3	3	0	0	0	0	2	
	SC6201	Digital Competency Development	3	3	0	0	0	0	3	
9.1.3.2		***Elective (Minimum 5 Credits)***	5	4	1	0	0	0		
	BS6032	Numerical Methods	2	2	0	0	0	0	2	
	BS6044	Probability Theory	2	2	0	0	0	0	2	
	BS6040	Engineering Mathematics	3	3	0	0	0	0	2	
	CT6411	General Biology	3	2	1	0	0	0	2	
9.1.4		**National Defence and Security Education**	8,5	5,0	3,5	0,0	0,0	0,0		
		Pursuant to Circular No. 05/2020/TT-BGDĐT dated 18 March 2020								
9.1.5		**Physical Education**	3,0	0,0	3,0	0,0	0,0	0,0	1,2,3	
		Pursuant to Current Regulations of Hanoi University of Industry								
9.2		**PROFESSIONAL EDUCATION**	69	54,5	14	1,5	4	2		
9.2.1		**Foundation Knowledge of the Field**	19	13,5	4,0	1,5	0,0	0,0		
		Compulsory	19	13,5	4,0	1,5	0,0	0,0		
1	SM6050	Engineering Drawing	3,0	2,5	0,0	0,5	0,0	0,0	6	
2	SEE6164	Electrical and Electronic Engineering	3,0	2,0	1,0	0,0	0,0	0,0	6	

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3	CT6360	Introduction to Engineering	3,0	2,0	0,0	1,0	0,0	0,0	1	
4	CT6255	Organic Chemistry	3,0	2,0	1,0	0,0	0,0	0,0	3	CT6279
5	CT6256	Analytical Chemistry	3,0	2,0	1,0	0,0	0,0	0,0	3	CT6279
6	CT6257	Physical Chemistry	3,0	3,0	0,0	0,0	0,0	0,0	2	CT6279
7	CT6386	Physical Chemistry Laboratory	1,0	0,0	1,0	0,0	0,0	0,0	2	CT6279
9.2.2		**Foundation Knowledge of the Discipline**	19	13	3	0	1	2		
9.2.2.1		**Compulsory**	15	9	3	0	1	2		
	CT6471	Biotechnology Processes and Equipment	3	2	1	0	0	0	3	
	CT6472	Microbiology	3	2	1	0	0	0	4	
	CT6473	Biochemistry	4	3	1	0	0	0	4	
	CT6474	Cell Biology	2	2	0	0	0	0	5	
	CT6475	Industrial Observation Internship	1	0	0	0	0	1	3	
	CT6476	Introduction to Biotechnology	2	2	0	0	0	0	4	
9.2.2.2	TC4	Elective	4	4	0	0	0	0		
	CT6477	Plant Physiology	2	2	0	0	0	0	4	
	CT6478	Genetics	2	2	0	0	0	0	4	
	CT6479	Biosafety	2	2	0	0	0	0	4	
	CT6480	Ecology	2	2	0	0	0	0	4	
9.2.3		**Specialization**	31	23	6	0	2	0		
9.2.3.1		**Compulsory**	21	13	6	0	2	0		
1	CT6504	Molecular Biology and Genetic Engineering	3	3	0	0	0	0	5	
2	CT6482	Cell Technology	3	2	1	0	0	0	6	
3	CT6481	Protein and Enzyme Technology	2	2	0	0	0	0	5	
4	CT6483	Microbial Biotechnology	2	2	0	0	0	0	5	
5	CT6487	Biotechnology Laboratory Practice 1	2	0	2	0	0	0	5	
6	CT6488	Biotechnology Laboratory Practice 2	2	0	2	0	0	0	6	
7	CT6489	Quality Management in Biotechnology	2	2	0	0	0	0	5	
8	CT6485	Analytical Methods in Biotechnology	3	2	1	0	0	0	7	
9	CT6490	Biotechnology Course Project	2	0	0	0	2	0	7	
9.2.3.2		***Elective (Minimum 10 Credits)***	10	10	0,0	0,0	0,0	0,0		

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1	CT6505	Vaccine Production Technology	2	2	0	0	0	0	7	
2	CT6492	Gene Technology	2	2	0	0	0	0	6	
3	CT6493	Plant Biotechnology	2	2	0	0	0	0	5	
4	CT6494	Animal Cell Technology	2	2	0	0	0	0	5	
5	CT6506	Industrial Fermentation Technology	2	2	0	0	0	0	7	
6	CT6496	Food Biotechnology	2	2	0	0	0	0	7	
7	CT6497	Chemistry of Bioactive Compounds	2	2	0	0	0	0	6	
8	CT6499	Bioprocess Engineering	2	2	0	0	0	0	6	
9	CT6507	Bioinformatics and Biological Data Analysis	2	2	0	0	0	0	6	
10	CT6501	Immunology	2	2	0	0	0	0	6	
9.3		**FREE SUPPLEMENTARY COURSES**	2	2	0	0	0	0		
9.3.1		**Compulsory**	2	2	0	0	0	0		
	SE6209	Innovation and Entrepreneurial Thinking	2	2	0	0	0	0	7	
9.3.2		***Elective (Choose One of Five Foreign Language Programs)***	10	10	0	0	0	0		
		Chinese Language Program								
	FL6560	Basic Chinese 1	5	5	0	0	0	0	1	
	FL6561	Basic Chinese 2	5	5	0	0	0	0	2	
		Korean Language Program								
	FL6564	Basic Korean 1	5	5	0	0	0	0	1	
	FL6565	Basic Korean 2	5	5	0	0	0	0	2	
		Japanese Language Program								
	FL6562	Basic Japanese 1	5	5	0	0	0	0	1	
	FL6563	Basic Japanese 2	5	5	0	0	0	0	2	
		English Language Program								
	FL6578	Basic English for Chemistry 1	5	5	0	0	0	0	1	
	FL6579	Basic English for Chemistry 2	5	5	0	0	0	0	2	
		German Language Program								
	FL6580	Basic German 1	5	5	0	0	0	0	1	
	FL6581	Basic German 2	5	5	0	0	0	0	2	
9.4		**Industrial Internship and Graduation Project**	15	0	0	0	8	7		

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	CT6502	Industrial Internship	7	0	0	0	0	7	8	CT6490
	CT6503	Graduation Project	8	0	0	0	8	0	8	CT6502
		TOTAL PROGRAM CREDITS	135	102,5	17	1,5	12	9		