Curriculum Framework for Mechanical Engineering Technology

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
9.1		**General Education**	**50**								
9.1.1		**Social Sciences and Humanities**	**19**								
9.1.1.1		***Compulsory***	**15**								
1.	LP6024	Marxist-Leninist Philosophy	3	3	0	0	0	0	1		
2.	LP6025	Marxist-Leninist Political Economy	2	2	0	0	0	0	2	LP6024	
3.	LP6026	Scientific Socialism	2	2	0	0	0	0	3	LP6024	
4.	LP6027	History of the Communist Party of Vietnam	2	2	0	0	0	0	4	LP6012	
5.	LP6022	Ho Chi Minh Thought	2	2	0	0	0	0	3	LP6011	
6.	LP6021	Introduction to Law	2	2	0	0	0	0	4	LP6012	
7.	BS6046	Intercultural Communication	2	2	0	0	0	0	1		
9.1.1.2		Electives (select one course from Group 1 and one from Group 2)	4								

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
Tc1		Group 1									
8.	BS6049	Humans and the Environment	2	2	0	0	0	0	3		
9.	BS6047	Introduction to Scientific Research	2	2	0	0	0	0	3		
10.	BS6048	Labor Relations and Employment	2	2	0	0	0	0	3		
11.	SE6257	Project Management	2	2	0	0	0	0	3		
12.	SE6218	Introduction to Economics	2	2	0	0	0	0	3		
13.	SM6186	Professional Work Practices	2	2	0	0	0	0	3		
Tc2		Group 2									
14.	BS6050	Introduction to Music	2	2	0	0	0	0	4		
15.	BS6052	Introduction to Fine Arts	2	2	0	0	0	0	4		
16.	BS6051	Introduction to Art Studies	2	2	0	0	0	0	4		
9.1.2	Select one of four foreign language programs		10	10	0	0	0	0			

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
		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									
	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	0	0	0	0	4		
	SL6350	Japanese 2	5	5	0	0	0	0	5		
		English Language Program									
	SL6325	English for Mechanical and Automotive Engineering 1	5	5	0	0	0	0	4		
	SL6326	English for Mechanical and Automotive Engineering 2	5	5	0	0	0	0	5		

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
9.1.3		Natural Sciences	21								
9.1.3.1		Compulsory	15								
	SC6201	Digital Competency Development1	3	2	1	0	0	0	6		
	BS6002	Calculus	3	3	0	0	0	0	1		
	BS6040	Engineering Mathematics	3	3	0	0	0	0	3		BS6002
	BS6042	Probability and Statistics	3	3	0	0	0	0	4	BS6004	
	BS6027	General Physics	3	2	1	0	0	0	1		
9.1.3.2		***Elective***	***6***								
	BS6039	Numerical Methods	3	0	0	0	0	0	2		
	SC6221	Numerical Methods in Programming	3	0	0	0	0	0	2		
	SC6223	Discrete Mathematics	3	0	0	0	0	0	2		
	BS6041	Physics II	3	0	0	0	0	0	2	BS6027	
	CT6279	General Chemistry	3	0	0	0	0	0	2		
9.1.4		**National Defense**	**0**						1/2		

[1] Credits: 3 compulsory credits; an additional course covers digital transformation.

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
		and Security Education[2]									
		In accordance with Circular No. 05/2020/TT-BGDDT dated March 18, 2020							1		
9.1.5		**Physical Education[3]**	**0**						1,2		
		In accordance with the current regulations of Hanoi University of Industry									
9.2		**Professional Education**									
9.2.1		**Broad Discipline Foundations**									
9.2.1.1		**Compulsory**	**24**								
	SM6050	Engineering	3	3	0	0	0	0	1		

[2] Credits: 8.5 credits excluded from cumulative GPA calculation (4 courses).

[3] Credits: 3 credits excluded from cumulative GPA calculation (3 courses).

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
		Drawing									
	SC6208	Programming Techniques	3	2	1	0	0	0	5		
	SM6176	Industrial Safety and Environment	2	2	0	0	0	0	3		
	SEE6164	Electrical and Electronic Engineering	3	3	0	0	0	0	3		
	SM6140	Materials Science	2	2	0	0	0	0	2		
	SM6178	Engineering Mechanics	3	3	0	0	0	0	2		BS6027
	SM6055	Strength of Materials	2	2	0	0	0	0	3		SM6178
	SM6054	Theory of Mechanisms	2	2	0	0	0	0	3	SM6178	
	SM6056	Machine Elements	2	2	0	0	0	0	4	SM6054 SM6055	
	SM6048	Introduction to Engineering	2	2	0	0	0	0	1		
9.2.1.2		**Elective**									
9.2.2		**Discipline Foundations**	**19**								

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
9.2.2.1		**Compulsory**	**17**								
	SM6138	Basic Mechanical Engineering Practice	2	0	2	0	0	0	2		
	SM6059	Tolerances and Measurement Techniques	2	2	0	0	0	0	4		
	SM6057	Fundamentals of Mechanical Design Laboratory	1	0	1	0	0	0	4	SM6054 SM6055	SM6140
	SM6153	Tolerances and Measurement Practice	1	0	1	0	0	0	4		
	SM6049	Introduction to Engineering Project	1	0	1	0	0	0	2		SM6048
	SM6195	Computer-Aided Design (CAD)	2	0	2	0	0	0	3		SM6050
	SM6190	Engineering Thermodynamics	2	2	0	0	0	0	5		
	SM6180	Machine Elements Course Project	2	0	0	0	2	0	5		SM6056
	SM6183	Specialized Engineering	2	2	0	0	0	0	2	SM6050	

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
		Drawing									
	SM6061	Fundamentals of Hydraulics	2	2	0	0	0	0	5		
9.2.2.2		**Elective**	**2**								
	SM6062	Blank Manufacturing Technology	2	2	0	0	0	0	5		
	SM6086	Product Design and Development	2	2	0	0	0	0	5		
	SM6063	Computer-Aided Engineering (CAE) Applications in Design Practice	2	0	2	0	0	0	5		
	SM6122	Robotics Engineering	2	2	0	0	0	0	5		
9.2.3		**Specialization**	**25**								
9.2.3.1		***Compulsory***	**23**								
	SM6065	Machine Manufacturing Technology	3	3	0	0	0	0	6	SM6064	
	SM6066	Production Process Automation	2	2	0	0	0	0	7		

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
	SM6067	Production Process Automation Practice	1	0	1	0	0	0	7		
	SM6064	Machine Tools	3	3	0	0	0	0	5	SM6138	SM6054
	SM6120	Hydraulic and Pneumatic Systems Practice	1	0	1	0	0	0	6	SM6061	
	SM6141	Advanced Machining Practice	2	0	2	0	0	0	6		SM6138
	SM6197	CAD/CAM	2	0	2	0	0	0	6		
	SM6196	CNC Practice	2	0	2	0	0	0	7		SM6197
	SM6191	Fixture Design	2	1	0	1	0	0	6		
	SM6179	Machine Manufacturing Technology Course Project	2	0	0	0	2	0	7		SM6065
	SM6068	Machine Manufacturing Technology Laboratory	1	0	1	0	0	0	6	SM6064	
	SM6177	CNC Technology	2	2	0	0	0	0	6	SM6064	
9.2.3.2		***Elective***	**2**								
		Electives (select one									

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
		course from the group)									
	SM6004	Smart Manufacturing Systems	2	2	0	0	0	0	7		
	SM6069	Stamping Die Design	2	2	0	0	0	0	7		
	SM6013	Product Quality Management	2	2	0	0	0	0	7		
	SM6070	Reverse Engineering and Rapid Prototyping Practice	2	0	2	0	0	0	7		
	SM6181	Electrical Discharge Machining Practice	2	0	2	0	0	0	7		
	SM6182	Robotics Practice	2	0	2	0	0	0	7		
	SM6187	Mechatronics Practice	2	0	2	0	0	0	7		
9.3		**Free Electives**	**2**	**2**	**0**	**0**	**0**	**0**			
9.3.1		***Compulsory***	2	2	0	0	0	0			
		Additional courses developing students' soft skills may be									

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
		included according to the field of study.									
	SE6209	Innovation and Entrepreneurial Thinking	2	2	0	0	0	0	7		
9.3.2		**Electives (select one of four foreign language program groups)**	0	0							
		Chinese Language Program									
	FL6560	*Basic Chinese 1*[4]	0						1		
	FL6561	*Basic Chinese 2*	0						2		
		Korean Language Program									
	FL6564	*Basic Korean 1*	0						1		
	FL6565	*Basic Korean 2*	0						2		
		Japanese Language Program									
	FL6562	*Basic Japanese 1*	0						1		

[4] Supplementary foreign language courses are excluded from cumulative GPA calculation: two basic courses (5 credits per course).

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
	FL6563	*Basic Japanese 2*	0						2		
		English Language Program									
	SL6325	*English for Mechanical and Automotive Engineering 1*	0						1		
	SL6326	*English for Mechanical and Automotive Engineering 2*	0						2		
9.4		**Industry Internship and Graduation Project/Thesis**	**15**	**0**	**0**	**0**	**8**	**7**			
	SM6071	Industry Internship	7	0	0	0	0	7	8		
	SM6072	Graduation Project/Thesis	8	0	0	0	8	0	8	SM6071	