Curriculum Framework for Mechanical and Industrial Design

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	48	2	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			
1.	LP6021	Introduction to Law	2	2	0	0	0	0	4		
2.	LP6022	Ho Chi Minh Thought	2	2	0	0	0	0	3	LP6026	
3.	LP6024	Marxist-Leninist Philosophy	3	3	0	0	0	0	1		
4.	LP6025	Marxist-Leninist Political Economy	2	2	0	0	0	0	2	LP6024	
5.	LP6026	Scientific Socialism	2	2	0	0	0	0	3	LP6024	
6.	LP6027	History of the Communist Party of Vietnam	2	2	0	0	0	0	4	LP6022	
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***								
Tc1		**Group 1**									
8.	SE6218	Introduction to Economics	2	2	0	0	0	0	*3*		
9.	SM6186	Professional Work Practices	2	2	0	0	0	0	*3*		
10.	BS6047	Introduction to Scientific Research	2	2	0	0	0	0	*3*		
11.	BS6048	Labor Relations and Employment	2	2	0	0	0	0	*3*		
12.	BS6049	Humans and the Environment	2	2	0	0	0	0	*3*		
13.	SE6257	Project Management	2	2	0	0	0	0	*3*		
Tc2		**Group 2**									
14.	BS6050	Introduction to Music	2	2	0	0	0	0	*4*		

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
15.	BS6051	Introduction to Art Studies	2	2	0	0	0	0	*4*		
16.	BS6052	Introduction to Fine Arts	2	2	0	0	0	0	*4*		
9.1.2	**Select one of four foreign language programs**		**10**	**10**	0	0	0	0			
		Chinese Language Program									
17	SL6347	*Chinese 1*	5	5	0	0	0	0	1		
18	SL6348	*Chinese 2*	5	5	0	0	0	0	2		
		Korean Language Program									
19	SL6351	*Korean 1*	5	5	0	0	0	0	1		
20	SL6352	*Korean 2*	5	5	0	0	0	0	2		
		Japanese Language Program									
21	SL6349	*Japanese 1*	5	5	0	0	0	0	1		
22	SL6350	*Japanese 2*	5	5	0	0	0	0	2		
		English Language Program									
25	SL6325	English for Mechanical and Automotive Engineering 1	5	5	0	0	0	0	4		
26	SL6326	English for Mechanical and Automotive Engineering 2	5	5	0	0	0	0	5		
9.1.3		**Natural Sciences**	**21**	19	2	0	0	0			
9.1.3.1		***Compulsory***	***15***	13	2	0	0	0			
27	SC6201	Digital Competency Development[1]	3	2	1	0	0	0	6		
28	BS6038	Calculus	3	3	0	0	0	0	1		

[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.			
29	BS6040	Engineering Mathematics	3	3	0	0	0	0	3		BS6038
30	BS6042	Probability and Statistics	3	3	0	0	0	0	4	BS6040	
31	BS6054	General Physics	3	2	1	0	0	0	1		
9.1.3.2		***Elective***	***6***	0	0	0	0	0			
32	CT6279	General Chemistry	3	0	0	0	0	0	2		
33	SC6221	Numerical Methods in Programming	3	0	0	0	0	0	2		
34	SC6223	Discrete Mathematics	3	0	0	0	0	0	2		
35	BS6039	Numerical Methods	3	0	0	0	0	0	2		
36	BS6041	Physics II	3	0	0	0	0	0	2	BS6054	
9.1.4		**National Defense and Security Education**[2]	**0**						1/2		
		In accordance with Circular No. 05/2020/TT-BGDDT dated March 18, 2020									
9.1.5		**Physical Education**[3]	**0**						1,2		
		In accordance with the current regulations of Hanoi University of Industry									
9.2		**Professional Education**	68	47.5	15	0.5	5	0			
9.2.1		**Broad Discipline Foundations**	**32**	24	7	0	1	0			
9.2.1.1		**Compulsory**	**32**	24	7	0	1	0			
37	SM6176	Industrial Safety and Environment	2	2	0	0	0	0	2		
38	SC6208	Programming Techniques	3	2	1	0	0	0	6		

[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.			
39	SEE6164	Electrical and Electronic Engineering	3	2	1	0	0	0	4		
40	SM6050	Engineering Drawing	3	3	0	0	0	0	1		
41	SM6178	Engineering Mechanics	3	3	0	0	0	0	2		BS6054
42	SM6195	Computer-Aided Design (CAD)	2	0	2	0	0	0	3		SM6050
43	SM6048	Introduction to Engineering	2	2	0	0	0	0	1		
44	SM6049	Introduction to Engineering Project	1	0	0	0	1	0	2		SM6048
45	SM6054	Theory of Mechanisms	2	2	0	0	0	0	3	SM6178	
46	SM6055	Strength of Materials	2	2	0	0	0	0	3		SM6178
47	SM6056	Machine Elements	2	2	0	0	0	0	4	SM6054 SM6055	
48	SM6059	Tolerances and Measurement Techniques	2	2	0	0	0	0	4		
59	SM6153	Tolerances and Measurement Practice	1	0	1	0	0	0	4		
50	SM6138	Basic Mechanical Engineering Practice	2	0	2	0	0	0	2		
51	SM6140	Materials Science	2	2	0	0	0	0	2		
9.2.1.2		**Elective**									
9.2.2		**Discipline Foundations**	**17**	14	1	0	2	0			
9.2.2.1		**Compulsory**	**15**	12	1	0	2	0			
52	SM6180	Machine Elements Course Project	2	0	0	0	2	0	5		SM6056
53	SM6183	Specialized Engineering Drawing	2	2	0	0	0	0	2	SM6050	
54	GF6198	Anthropometry and Ergonomics	2	2	0	0	0	0	5		
55	GF6215	Form Drawing	2	2	0	0	0	0	3		
56	SM6190	Engineering Thermodynamics	2	2	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.			
57	SM6057	Fundamentals of Mechanical Design Laboratory	1	0	1	0	0	0	4	SM6054 SM6055	SM6140
58	SM6061	Fundamentals of Hydraulics	2	2	0	0	0	0	5		
59	SM6087	Fundamentals of Engineering Design	2	2	0	0	0	0	3		
9.2.2.2		**Elective**	**2**								
60	SM6062	Blank Manufacturing Technology	2	2	0	0	0	0	5		
61	SM6091	Motifs and Colors in Industrial Design	2	2	0	0	0	0	5		
62	SM6122	Robotics Engineering	2	2	0	0	0	0	5		
9.2.3		**Specialization**	**19**	9	7	1	2	0			
9.2.3.1		***Compulsory***	**17**	8	7	0	2	0			
63	SM6203	Mechanical Design Course Project	2	0	0	0	2	0	7		SM6085
64	SM6204	Industrial Design	2	2	0	0	0	0	6	GF6215	
65	SM6063	Computer-Aided Engineering (CAE) Applications in Design Practice	2	0	2	0	0	0	7		
66	SM6070	Reverse Engineering and Rapid Prototyping Practice	2	0	2	0	0	0	7		
67	SM6079	Prototyping Technology	2	0	2	0	0	0	6		
68	SM6085	Mechanical Design	2	2	0	0	0	0	6	SM6087	
69	SM6086	Product Design and Development	2	1	0	1	0	0	7		
70	SM6115	Industrial Design Practice	1	0	1	0	0	0	7	SM6204	
71	GF6188	Principles of Visual Design	2	2	0	0	0	0	5		
9.2.3.2		***Elective***	**2**	2	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.			
		Electives (select one course from the group)									
72	SM6013	Product Quality Management	2	2	0	0	0	0	7		
73	SM6069	Stamping Die Design	2	1	0	1	0	0	7		
74	SM6078	Casting Mold Design	2	1	0	1	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 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)**									
		Chinese Language Program									
75	FL6282	Basic Chinese 1	5	0	0	0	0	0	1		
76	FL6283	Basic Chinese 2	5	5	0	0	0	0	2		
		Korean Language Program									
77	FL6288	Basic Korean 2	5	5	0	0	0	0	2		
78	FL6287	Basic Korean 1	5	5	0	0	0	0	1		
		Japanese Language Program									
79	FL6293	Basic Japanese 2	5	5	0	0	0	0	2		
80	FL6292	Basic Japanese 1	5	5	0	0	0	0	1		
		English Language Program									

No.	Course Code	Area / Course Title	Total Cr.	Credit Components					Sem.	Prior Code	Prereq. Code
				Lec.	Prac./ Lab	Disc./Assign.	Proj.	Intern.			
81	SL6325	Basic English for Mechanical and Automotive Engineering 1	5	5	0	0	0	0	1		
82	SL6326	Basic English for Mechanical and Automotive Engineering 2	5	5	0	0	0	0	2		
9.4		**Industry Internship and Graduation Project/Thesis**	**15**	**0**	**0**	**0**	**8**	**7**			
83	SM6089	Industry Internship (Mechanical Design)	7	0	0	7	7	0	8		
84	SM6090	Graduation Project (Mechanical Design)	8	0	0	8	8	0	8	SM0089	