

## Undergraduate Program Curriculum

No.	Curriculum	Bachelor	Engineer	Note
<b>I</b>	<b>General Education, Math and Basic Science</b>	<b>50</b>	<b>50</b>	
1.1	Math and Basic Science	32	32	
1.2	Political theory	10	10	Following the general regulations of the Ministry of Education and Training: The credits of Physical Education and National Defense Education courses are not included in.
1.3	General law	2	2	
1.4	Physical Education	(5)	(5)	
1.5	National Defense Education	(10)	(10)	
1.6	Foreign language (English)	6	6	
<b>II</b>	<b>Major core courses</b>	<b>47</b>	<b>47</b>	Bachelor and Engineer
<b>III</b>	<b>Engineering Practicum</b>	<b>2</b>	<b>2</b>	Bachelor and Engineer
<b>IV</b>	<b>Free electives</b>	<b>8</b>	<b>8</b>	<b>General requirements</b> (At least 3 credits are selected from the list approved by the School)
<b>V</b>	<b>Areas of concentration</b>	<b>26</b>	<b>57</b>	<b>Choose 1 of three engineer majors:</b> Chemistry of materials and manufacturing technology; Physics of materials and processing technology; Mechanics of materials and forming technology
5.1	Specialization	20	20	Bachelor and Engineer
5.2	Additional courses for Engineer degree	-	17	Requirements for Engineer program are different from Bachelor program starting from 8th semester. Graduation Practicum courses depend on the majors.
5.3	Required electives	-	8	
5.4	Graduation Practicum	-	2	
5.5	Graduation Project	6	10	
	<b>Total Credits</b>	<b>133</b>	<b>164</b>	

## List of courses – Bachelor

No	CODE	COURSES	CREDITS	SEMESTER									
				1	2	3	4	5	6	7	8		
		<b>Math and Basic Science</b>	<b>6</b>										
1	CH1010	General chemistry	3(2-1-1-6)			3							
2	ME2015	Basic Engineering Graphics	3(3-1-0-6)			3							
		<b>Major core courses</b>	<b>47</b>										
3	EE2016	Fundamentals of Electrical and Electronic Engineering	3(3-1-0-6)			3							
4	MSE2011	Introduction to Engineering Materials	3(2-2-0-6)			3							
5	MSE2031	Structure of Materials	3(2-2-0-6)				3						
6	MSE2021	Thermodynamics	3(2-2-0-6)				3						
7	MSE2022	Solid Chemistry	3(3-0-0-6)				3						
8	MSE2042	Processing of Metallic Materials	3(3-0-0-6)				3						
9	MSE2051	Mechanics of materials	3(2-2-0-4)				3						
10	MSE3012	Transport Phenomena	3(2-2-0-4)					3					
11	PH3380	Electronic, optical and magnetic properties of materials	3(3-0-0-6)					3					
12	MSE3401	Thermal and Mechanical behavior of materials	3(2-2-0-6)					3					
13	MSE3022	Phase transformation	3(3-0-0-6)					3					
14	MSE3014	Project 1	2(2-1-0-4)					2					
15	MSE3015	Lab 1	2(0-0-4-4)					2					
16	MSE3017	Ceramic materials	3(3-0-0-6)						3				
17	CH3500	Polymer Materials	3(3-0-0-6)						3				
18	MSE3018	Project 2	2(1-2-0-4)							2			
19	MSE3019	Lab 2	2(0-0-4-4)							2			
<b>SPECIALIZATION</b>													
		<b>Metals required courses</b>	<b>20</b>										
20	MSE4016	Metallic Materials Lab	2(0-0-4-4)									2	
21	MSE3111	Fundamentals of modeling and simulation	3(2-2-0-6)							3			
22	MSE3112	Solidification processing	3(3-0-0-6)							3			



No	CODE	COURSES	CREDITS	SEMESTER								
				1	2	3	4	5	6	7	8	
45	CH4215	Processing Equipment in Silicate Industry 2	3(3-1-0-6)								3	
46	CH4217	Technology of Silicate Materials 1	3(3-1-0-6)								3	
47	CH4219	Technology of Silicate Materials 2	3(3-1-0-6)								3	
48		<b>Free electives</b>	<b>8</b>								3	5
49	MSE4416	Graduation Practicum	<b>2</b>							2		
50	MSE4417	Graduation Project	<b>6</b>									6
<b>Total</b>			<b>89</b>	<b>0</b>	<b>0</b>	<b>12</b>	<b>15</b>	<b>16</b>	<b>18</b>	<b>17</b>	<b>11</b>	







No/ID	COURSES	CREDITS	SEMESTER											
			1	2	3	4	5	6	7	8	9	10		
<b>MSE5810</b>	Technology and equipment for Powder metal	3(3-0-0-6)											3	
<b>MSE5820</b>	Course Project	2(1-2-0-4)											2	
<b>MSE5830</b>	Graduation Practicum	2(0-0-4-4)												2
<b>MSE5840</b>	Graduation Project (thesis)	10(0-0-20-20)												10
	<b>Choose 8 credits in the following courses</b>	<b>8</b>											<b>2</b>	<b>6</b>
<b>MSE5811</b>	Fundamentals of Rolling Workshop Design	2(2-0-0-4)												
<b>MSE5812</b>	Technology and Equipment for Plastic Deformation and Drawing	2(2-0-0-4)												
<b>MSE5813</b>	Technology and Equipment for Tube and Flat Rolling	2(2-0-0-4)												
<b>MSE5814</b>	Numbering Simulation of Rolling Process	2(1-1-1-4)												
<b>MSE5815</b>	Technology and forging equipment	2(2-0-0-4)												
<b>MSE5816</b>	Automation of Rolling Process	2(2-0-0-4)												
	<b>Total</b>	<b>164</b>	<b>18</b>	<b>17</b>	<b>18</b>	<b>18</b>	<b>16</b>	<b>18</b>	<b>17</b>	<b>16</b>	<b>14</b>	<b>12</b>		