

## Materials Science and Nanotechnology Engineering Undergraduate Curriculum

Course Code	Course Name	T	U	L	Y	E	
<b>1. Semester</b>							
AFE 157	English for Engineering and Architecture-I	2	2	0	3	4	
CHEM 111	General Chemistry-I	3	1	0	4	6	
PHYS 101	Physics-I	3	1	2	4	6	
MATH 151	Calculus-I	3	2	0	4	6	
MSN 101	Introduction to Materials Science and Nanotechnology Engineering	2	0	0	2	5	
HUM 101	History of Civilization	3	0	0	3	3	
<b>Total</b>						<b>20</b>	<b>30</b>
<b>2. Semester</b>							
AFE 158	English for Engineering and Architecture-II	2	0	2	3	4	
CHEM 112	General Chemistry-II	3	1	0	4	6	
CHEM 113	General Chemistry-II Lab.	1	0	2	2	3	
PHYS 102	Physics-II	3	1	2	4	6	
MATH 152	Calculus-II	3	2	0	4	6	
ME 182	Modelling and Drawings in Solids	2	0	2	3	5	
<b>Total</b>						<b>20</b>	<b>30</b>
<b>3. Semester</b>							
MATH 241	Differential Equations	3	2	0	4	6	
TKL 201	Turkish-I	2	0	0	2	2	
MATH 281	Probability	2	2	0	3	5	
ECON 294	Economy for Engineers	3	0	0	3	4	
MSN 201	Materials Science-I	2	0	0	2	5	
MSN 213	Materials Thermodynamics	2	2	0	3	4	
MSN 215	Static and Dynamics of Materials	3	0	0	3	4	
<b>Total</b>						<b>20</b>	<b>30</b>
<b>4. Semester</b>							
FE xx1	Free Elective-I	3	0	0	3	3	
TKL 202	Turkish-II	2	0	0	2	2	
MSE 202	Materials Science-II	2	0	0	2	5	
MSE 220	Materials Characterization-I	2	0	2	3	6	
MSE 230	Transport Phenomena	3	0	0	3	4	
MSE 240	Phase Diagrams	3	0	0	3	5	
MSE 260	Mechanical Behaviours of Materials	1	0	2	2	5	
<b>Total</b>						<b>18</b>	<b>30</b>
<b>T:</b> Theoretical Course <b>U:</b> Applications <b>L:</b> Laboratories <b>Y:</b> No of Credits <b>E:</b> ECTS (European Credit Transfer System) Credits							

<b>5. Semester</b>						
HTR 301	Principles of Atatürk and History of Revolution-I	2	0	0	2	2
FE xx2	Free Elective-II	3	0	0	3	3
MSE 300	Summer Practice-I	0	2	0	0	1
MSE 221	Materials Characterization-II	2	0	2	3	8
MSE 301	Materials Production Processes-I	3	0	0	3	8
MSE 315	Materials Laboratory	2	0	2	3	8
<b>Total</b>					<b>14</b>	<b>30</b>
<b>6. Semester</b>						
ES 301	Engineering Management	3	0	0	3	4
HTR 302	Principles of Atatürk and History of Revolution-II	2	0	0	2	2
MSE 302	Materials Production Processes-II	3	0	0	3	6
MSE 320	Bio-Materials	3	0	0	3	6
MSE 340	Ceramic Science and Technology	3	0	0	3	6
MSE 360	Polymer Science and Technology	3	0	0	3	6
<b>Total</b>					<b>17</b>	<b>30</b>
<b>7. Semester</b>						
MSE 400	Summer Practice-II	0	2	0	0	1
MSE 4XXE	Technical Elective-I	3	0	0	3	6
MSE 4XXE	Technical Elective-II	3	0	0	3	6
MSE 401	Composite Materials	3	0	0	3	6
MSE 403	Design Principles and Materials Selection in Engineering Applications	3	0	0	3	5
MSE 405	Nanomaterials and Nanotechnology	4	0	0	4	6
<b>Total</b>					<b>16</b>	<b>30</b>
<b>8. Semester</b>						
MSE 4XXE	Technical Elective-III	3	0	0	3	6
MSE 4XXE	Technical Elective-I	3	0	0	3	6
MSE 4XXE	Technical Elective-V	3	0	0	3	6
MSE 450	Special Topics in Materials Science and Nanotechnology Engineering	2	0	0	2	4
MSE 492	Engineering Project (BSc Thesis)	1	0	4	3	8
<b>Total</b>					<b>14</b>	<b>30</b>
<b>TOTAL CREDITS</b>					<b>139</b>	<b>240</b>
<b>T:</b> Theoretical Course <b>U:</b> Applications <b>L:</b> Laboratories <b>Y:</b> No of Credits <b>E:</b> ECTS (European Credit Transfer System) Credits						