

UNDERGRADUATE CURRICULUM (2021)

**effective for students who start their first year in October 2021.

First Semester					Second Semester				
Course Code	Course Name	Credit	ECTS		Course Code	Course Name	Credit	ECTS	
CHEM 101	General Chemistry I	4-0	4	5	CHEM 102	General Chemistry II	4-0	4	5
CHEM 131	General Chemistry Lab I	0-4	2	2	CHEM 132	General Chemistry Lab II	0-4	2	2
ENG 101	Development of Reading and Writing Skills I	3-0	3	3	ENG 102	Development of Reading and Writing Skills II	3-0	3	3
MATH 145	Calculus For Engineering and Science I	4-2	5	7	MATH 146	Calculus For Engineering and Science II	4-2	5	8
MSE 100	Introduction to Materials Science and Engineering	1-0	1	1	MSE 120	Introduction to Computer Programming	2-2	3	4
MSE 113	Computer Aided Engineering Graphics	2-2	3	4	PHYS 102	General Physics II	2-2	3	6
PHYS 101	General Physics I	2-2	3	6	PHYS 112	General Physics Lab II	0-2	1	2
PHYS 111	General Physics Lab I	0-2	1	2					
				22					30
									21
									30

Third Semester					Fourth Semester				
Course Code	Course Name	Credit	ECTS		Course Code	Course Name	Credit	ECTS	
ECON 205	Principles of Economics	3-0	3	4	HIST 202	Principles of Ataturk II	2-0	0	2
HIST 201	Principles of Ataturk I	2-0	0	2	MSE 202	Materials Science II	4-0	4	6
MATH 255	Differential Equations	4-0	4	6	MSE 204	Materials Chemistry	3-0	3	5
MSE 201	Materials Science I	4-0	4	6	MSE 212	Materials Lab I	2-2	3	5
MSE 205	Materials Thermodynamics	3-0	3	5	MSE 222	Applied Mathematics for MSE	4-0	4	7
MSE 215	Materials Physics	3-0	3	5	TURK 202	Turkish Language II	2-0	0	2
TURK 201	Turkish Language I	2-0	0	2	NTE I	Nontechnical elective	3-0	3	3
				17					30
									17
									30

Fifth Semester					Sixth Semester				
Course Code	Course Name	Credit	ECTS		Course Code	Course Name	Credit	ECTS	
MSE 307	Physical Metallurgy	3-0	3	5	ENG 302	Technical Writing and Communication	3-0	3	3
MSE 309	Mechanical Behavior of Materials	3-0	3	5	MSE 310	Materials Characterization	3-0	3	4
MSE 313	Introduction to Solid State Physics	3-0	3	5	MSE 312	Numerical Methods and Modeling	2-2	3	5
MSE 300	Summer Practice I	0-0	0	5	MSE 314	Introduction to Nanoscience and Nanotechnology	3-0	3	5
MSE 305	Transport Phenomena	3-0	3	5	MSE 316	Materials Lab II	2-2	3	5
MSE 315	Mineral Processing and Extractive Metallurgy	3-0	3	5	TE I	Technical elective	3-0	3	5
					NTE II	Nontechnical elective	3-0	3	3
				15					21
				30					30

Seventh Semester					Eigth Semester				
Course Code	Course Name	Credit	ECTS		Course Code	Course Name	Credit	ECTS	
MSE 400	Summer Practice II	0-0	0	7	MSE 448	Introduction to Polymer Science	3-0	3	5
MSE 451	Materials Design	3-0	3	7	MSE 452	Graduation Project(pre MSE 451)	0-6	3	12
MSE 479	Ceramic and Glass Materials	3-0	3	5	TE III	Technical Elective	3-0	3	5
MAN 211	Corporate Communication and Management Skills for Engineers	3-0	0	3	TE IV	Technical Elective	3-0	3	5
TE II	Technical Elective	3-0	3	5	NTE IV	Nontechnical elective	3-0	3	3
NTE III	Nontechnical elective	3-0	3	3					
				12					15
				30					30

Total: 140 240

Technical Elective Courses

Course Code	Course Name	Credit		ECTS
MSE 105	Materials in Design	3-0	3	5
MSE 211	Materials Science and Engineering	3-0	3	5
MSE 461	Composite Materials	3-0	3	5
MSE 462	Soft Materials	3-0	3	5
MSE 463	Mineral Processing	3-0	3	5
MSE 464	Extractive Metallurgy	3-0	3	5
MSE 471	Spectroscopic Characterization of Materials	3-0	3	5
MSE 472	Materials in Bioscience	3-0	3	5
MSE 476	Electroceramic Materials and Electrochemical Devices	3-0	3	5
MSE 477	Iron and Steel Making	3-0	3	5
MSE 481	Smart Materials and Structures	3-0	3	5
MSE 484	Powder Metallurgy	3-0	3	5
MSE 499	Cooperative Education Course	0-6	3	10