

UNDERGRADUATE CURRICULUM(2020)

**effective for students who start their first year in October 2020.

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 Laboratuvarı I	0-4	2 2	CHEM 132	General Chemistry Laboratuvarı 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				
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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 (pre MSE 201)	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(pre MSE 201)	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
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Fifth Semester				Sixth Semester			
Course Code	Course Name	Credit	ECTS	Course Code	Course Name	Credit	ECTS
MSE 307	Physical Metallurgy(pre MSE 201)	3-0	3 5	ENG 302	Technical Writing and Communication	3-0	3 3
MSE 309	Mechanical Behavior of Materials (pre MSE 202)	3-0	3 5	MSE 310	Materials Characterization (pre MSE 202)	3-0	3 5
MSE 313	Introduction to Solid State Physics (pre MSE 215)	3-0	3 5	MSE 312	Introduction to Modeling and Simulation in MSE	2-2	3 5
MSE 300	Summer Practice I	0-0	0 7	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
NTE II	Nontechnical elective	3-0	3 3	TE I	Technical elective	3-0	3 5
				NTE III	Nontechnical elective	3-0	3 3
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Seventh Semester				Eighth 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 5	MSE 452	Graduation Project	0-6	3 12
MSE 479	Ceramic and Glass Materials	3-0	3 5	TE IV	Technical Elective	3-0	3 5
TE II	Technical Elective	3-0	3 5	TE V	Technical Elective	3-0	3 5
TE III	Technical Elective	3-0	3 5	NTE V	Nontechnical elective	3-0	3 3
NTE IV	Nontechnical elective	3-0	3 3				
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Total: 143 241

Technical Elective Courses

Course Code	Course Name	Credit	ECTS
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