

FACULTY OF ENGINEERING, DEPARTMENT OF METALLURGICAL AND MATERIALS ENGINEERING

2018-2019 ACADEMIC CURRICULUM, (100% English)

PREPARATION CLASS											
Prep Class 1st Semester					Prep Class 2nd Semester						
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
MSE000	Preparation	0	0	0	0	MSE000	Preparation	0	0	0	0

I. CLASS											
01. Semester Courses						02. Semester Courses					
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
CAL181	Mathematics I	4	0	4	5	CAL182	Mathematics II	4	0	4	5
PHY195	General Physics I	3	2	4	5	PHY196	General Physics II	3	2	4	5
CHE189	General Chemistry	3	2	4	4	CEC102	Computer Programming	1	2	2	4
CEC101	Information Technologies and Applications	1	2	2	3	CHE102	Physical Chemistry	3	2	4	5
CEC105	Technical Drawing	2	2	3	5	MSE104	Computer Aided Technical Drawing	2	2	3	5
TRK181	Turkish Language I	2	0	2	2	TRK182	Turkish Language II	2	0	2	2
FOL183	Foreign Language I	2	0	2	2	FOL184	Foreign Language II	2	0	2	2
MSE101	Introduction to Metallurgical and Materials Engineering	2	0	2	4	MSE106	Analytical Chemistry	2	0	2	2
Total		19	8	23	30	Total		19	8	23	30

II. CLASS											
03. Semester Courses						04. Semester Courses					
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
HST181	Atatürk's Principles and History of Revolutions I	2	0	2	2	HST182	Atatürk's Principles and History of Revolutions II	2	0	2	2
FOL281	Technical Foreign Language I	2	0	2	2	FOL282	Technical Foreign Language II	2	0	2	2
CAL289	Differential Equations	4	0	4	4	CEC206	Probability and Statistics	3	0	3	5
MSE201	Transport Phenomena	3	0	3	5	MSE202	Metallurgical Thermodynamics	3	0	3	5
MSE203	Materials Science I	3	0	3	5	MSE204	Materials Science II	3	0	3	5
MSE205	Extractive Metallurgy	3	0	3	6	MSE206	Phase Diagrams	3	0	3	5
MSE207	Statics and Strengths	3	0	3	6	MSE208	Heat Treatment and Laboratories	2	3	3	6
Total		20	0	20	30	Total		18	3	19	30

III. CLASS											
05. Semester Courses						06. Semester Courses					
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
MSE301	Industrial Practice I ¹	0	0	0	4	MSE302	Metallurgy Laboratory	2	3	3	5
MSE303	Materials Laboratory	2	3	3	5	MSE304	Casting Principles and Technologies	2	3	3	6
MSE305	Mechanical Metallurgy	3	0	3	4	CEC308	Engineering Economics	2	0	2	3
MSE307	Metallography	2	3	3	5	CEC306	Occupational Health and Safety II	2	0	2	2
CEC305	Occupational Health and Safety I	2	0	2	2	Technical Elective Courses²		3	0	3	6
	Technical Elective Courses²	3	0	3	4	Technical Elective Courses²		3	0	3	6
	Technical Elective Courses²	3	0	3	4	Social Elective Courses³		2	0	2	2
	Social Elective Courses³	2	0	2	2	Total		16	6	18	30
Total		17	6	19	30	Total		16	6	18	30

Technical Elective Courses					
MSE309	Iron-Steel Production	3	0	3	4
MSE311	Polymer Materials	3	0	3	4
MSE313	Semiconductor Materials	3	0	3	4
MSE315	Welding Technology	3	0	3	4
MSE317	Nonferrous Metal Production	3	0	3	4
MSE319	Metallurgical Thermodynamics I	3	0	3	4
MSE321	Casting Principles	3	0	3	4
MSE323	Phase Transformation of Materials	3	0	3	4

Technical Elective Courses					
MSE306	Composite Materials	3	0	3	6
MSE308	Ceramic Materials	3	0	3	6
MSE310	Biomaterials	3	0	3	6
MSE312	Special Casting Methods	3	0	3	6
MSE314	Structure of Materials	3	0	3	6
MSE316	Computer Aided Design	3	0	3	6
MSE318	Welding Metallurgy	3	0	3	6

Social Elective Courses					
ESC301	Labour Law	2	0	2	2
ESC303	Patent and Industrial Design	2	0	2	2
ESC305	Entrepreneurship	2	0	2	2

Social Elective Courses					
ESC302	Research and Presentation Skills	2	0	2	2
ESC304	Human Resources Management	2	0	2	2

¹"Industrial Practice I" will be done according to the training regulation.

²Two course will be selected in each semester from Technical Elective Courses

³One course will be selected in each semester from Social Elective Courses

IV.CLASS												
07. Semester Courses						08. Semester Courses						
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS	
MSE490	Workplace Training and Practice ⁽¹⁾	5	15	12	24	MSE490	Workplace Training and Practice ⁽¹⁾	5	15	12	24	
MSE401	Industrial Practice II ^{(1),(2)}	0	0	0	4	MSE404	Graduation Project II ^{(1),(2),(3)}	0	2	1	6	
MSE407	Graduation Project I ^{(1),(2)}	0	2	1	2	MSE403	Material Forming Methods ⁽²⁾	3	0	3	4	
MSE403	Material Forming Methods ⁽²⁾	3	0	3	4	MSE405	Material Characterization ⁽²⁾	3	0	3	6	
MSE405	Material Characterization ⁽²⁾	3	0	3	6	CEC401	Ethics in Engineering ⁽²⁾	2	0	2	2	
CEC401	Ethics in Engineering ⁽²⁾	2	0	2	2		Technical Elective Courses ^{(2),(3)}	3	0	3	6	
	Technical Elective Courses ⁽²⁾	3	0	3	6		Technical Elective Courses ^{(2),(3)}	3	0	3	6	
	Technical Elective Courses ⁽²⁾	3	0	3	6		Technical Elective Courses ⁽³⁾	3	0	3	6	
							Technical Elective Courses ⁽³⁾	3	0	3	6	
							Technical Elective Courses ⁽³⁾	3	0	3	6	
Total (if the courses affixed with ⁽¹⁾ are taken)		5	17	13	30	Total (if the courses affixed with ⁽¹⁾ are taken)		5	17	13	30	
Total (if the courses affixed with ⁽²⁾ are taken)		14	2	15	30	Total (if the courses affixed with ⁽²⁾ are taken)		14	2	15	30	
						Total (if the courses affixed with ⁽³⁾ are taken)		12	2	13	30	

Technical Elective Courses					
MSE409	Nanomaterials	3	0	3	6
MSE411	Alternative Iron-Steel Production Methods	3	0	3	6
MSE413	Cast Irons	3	0	3	6
MSE415	Glass Technology	3	0	3	6
MSE417	Runner and Feeder Design	3	0	3	6
MSE419	Carbon Materials	3	0	3	6
MSE421	Materials Selection and Design	3	0	3	6

Technical Elective Courses					
MSE406	Corrosion and Protection Methods	3	0	3	6
MSE408	Special Steels	3	0	3	6
MSE410	Powder Metallurgy	3	0	3	6
MSE412	Quality Control and Quality Systems	3	0	3	6
MSE414	Ore Dressing and Metallurgical Pretreatment	3	0	3	6
MSE416	Non Destructive Inspection Methods	3	0	3	6
MSE418	Physical Properties of Materials	3	0	3	6
MSE420	Dangerous Materials and Chemicals	3	0	3	6
MSE422	Failure Analysis	3	0	3	6
MSE424	X-Ray Applications	3	0	3	6
MSE426	Energy Storage Materials	3	0	3	6
MSE428	Nonferrous Metals and Welding	3	0	3	6
MSE430	Solidification	3	0	3	6

**"Industrial Practice II" will be done according to the training regulation.

For the 7th semester, students who take the courses of affixed with (1) will not take the courses of affixed with (2). Likewise, students who take the courses of affixed with (2) will not take the c

For the 7th semester, students who take the courses of affixed with (1) should take the courses of affixed with (2) at the 8th semester.

For the 7th semester, students who take the courses of affixed with (2) will take the courses affixed with (1) or (3) at the 8th semester related to their choice.

COURSE STATISTICS					
1	Total National Credits	150	6	Total Credits/ 128 Boundary Credits	%117,19
2	Total ECTS Credits	240	7	Total ECTS Credits / Total National Credits	%160,00
3	Total Credit of Elective Courses	34	8	Total Credit of Elective Courses / Total National Credits	%22,67
4	Total Time of Theoretical Courses	135	9	Total Time of Theoretical Courses / Total Time Courses	%79,41
5	Total Time of Practical Courses	35	10	Total Time of Practical Courses / Total Time Courses	%20,59