



ANKARA YILDIRIM BEYAZIT UNIVERSITY
FACULTY OF ENGINEERING AND NATURAL SCIENCES
METALLURGICAL AND MATERIALS ENGINEERING
METALURJİ VE MALZEME MÜHENDİSLİĞİ(İNG)

1.Semester Course Plan				
Course Code	Course Name	T+A+L	Compulsory/Elective	ECTS
CHEM101	GENERAL CHEMISTRY	3+0+0	Compulsory	5
ENG103	ACADEMIC ENGLISH I	2+0+0	Compulsory	2
MATH101	CALCULUS I	4+0+0	Compulsory	6
MSE101	INTRODUCTION TO MATERIALS ENGINEERING	2+0+0	Compulsory	2
MSE103	COMPUTER AIDED ENGINEERING DRAWING	3+0+0	Compulsory	5
PHYS101	PHYSICS I	3+0+0	Compulsory	4
PHYS103	PHYSICS LABORATORY I	0+2+0	Compulsory	2
TDL101	TURKISH LANGUAGE I	2+0+0	Compulsory	2
TİT101	HISTORY OF THE TURKISH REVOLUTION I	2+0+0	Compulsory	2
Total ECTS				30

2.Semester Course Plan				
Course Code	Course Name	T+A+L	Compulsory/Elective	ECTS
CHEM102	ANALYTICAL CHEMISTRY	2+0+0	Compulsory	3
ENG104	ACADEMIC ENGLISH II	2+0+0	Compulsory	2
MATH102	CALCULUS II	4+0+0	Compulsory	6
MSE102	COMPUTER PROGRAMMING	2+2+0	Compulsory	6
MSE106	STATICS AND STRENGTH OF MATERIALS	2+0+0	Compulsory	3
PHYS102	PHYSICS II	3+0+0	Compulsory	4
PHYS104	PHYSICS LABORATORY II	0+2+0	Compulsory	2
TDL102	TURKISH LANGUAGE II	2+0+0	Compulsory	2
TİT102	HISTORY OF THE TURKISH REVOLUTION II	2+0+0	Compulsory	2
Total ECTS				30

3.Semester Course Plan				
Course Code	Course Name	T+A+L	Compulsory/Elective	ECTS
ENGR265	PRINCIPLES OF OCCUPATIONAL HEALTH AND SAFETY I	2+0+0	Compulsory	3
ENG201	TECHNICAL ENGLISH I	3+0+0	Compulsory	4
MATH201	DIFFERENTIAL EQUATIONS	4+0+0	Compulsory	6
MSE201	MATERIALS SCIENCE I	3+1+0	Compulsory	6
MSE203	THERMODYNAMICS OF MATERIALS I	3+0+0	Compulsory	6
ENGR207	SOCIAL ACTIVITIES I	0+2+0	Elective	3
ENGR251	ENGINEERING ETHICS	3+0+0	Elective	3
MSE211	PHYSICAL MEASUREMENT LABORATORY	3+0+0	Elective	4
MSE233	COMPUTATIONAL TECHNIQUES IN ENGINEERING	2+1+0	Elective	3
MSE235	METALLIC AND CERAMIC BIOMATERIALS	2+1+0	Elective	3
Total ECTS				41

4.Semester Course Plan				
Course Code	Course Name	T+A+L	Compulsory/Elective	ECTS
ENGR266	PRINCIPLES OF OCCUPATIONAL HEALTH AND SAFETY II	2+0+0	Compulsory	3
ENG202	TECHNICAL ENGLISH II	3+0+0	Compulsory	4
MATH204	NUMERICAL METHODS	3+0+0	Compulsory	5
MSE202	MATERIALS SCIENCE II	3+1+0	Compulsory	6
MSE204	THERMODYNAMICS OF MATERIALS II	3+0+0	Compulsory	6
MSE208	PHYSICS OF SOLIDS	3+0+0	Compulsory	5
ENGR206	SCIENCE, TECHNOLOGY AND SOCIETY	2+0+0	Elective	3
ENGR210	SOCIAL ACTIVITIES II	0+2+0	Elective	3
MSE238	MICROSTRUCTURAL EVOLUTION IN MATERIALS	2+1+0	Elective	3
Total ECTS				38

5.Semester Course Plan				
Course Code	Course Name	T+A+L	Compulsory/Elective	ECTS
MSE300	INDUSTRIAL PRACTICES I	0+2+0	Compulsory	4
MSE301	MATERIALS PROCESSING LAB.I	0+0+3	Compulsory	5
MSE303	PROCESSING OF MATERIALS I	3+0+0	Compulsory	5
MSE309	MECHANICAL BEHAVIOUR OF MATERIALS	3+0+0	Compulsory	5
MSE311	MATERIALS CHARACTERIZATION TECHNIQUES	3+1+0	Compulsory	5
MSE317	INTRODUCTION TO POLYMERS	3+0+0	Compulsory	5

SEC301	ELECTIVE COURSES	0+0+0	Elective	0
			Total ECTS	29
<i>Course Groups</i>				
ERS300	ERASMUS INDUSTRIAL PRACTICE I	0+0+0	Elective	4
MSE315	STRUCTURAL CERAMICS	3+0+0	Elective	4
MSE337	MATHEMATICAL METHODS FOR MATERIALS SCIENTISTS	3+0+0	Elective	4
MSE355	CHEMICAL METALURGY	3+0+0	Elective	4
MSE357	DEFECTS IN MATERIALS	3+0+0	Elective	4
MSE361	NUCLEATION AND SOLIDIFICATION	3+0+0	Elective	4

6.Semester Course Plan				
Course Code	Course Name	T+A+L	Compulsory/Elective	ECTS
MSE302	MATERIALS PROCESSING LAB. II	0+0+3	Compulsory	5
MSE304	PROCESSING OF MATERIALS II	3+0+0	Compulsory	5
MSE306	PHASE RELATIONS AND DIAGRAMS	3+0+0	Compulsory	5
MSE312	KINETICS OF MATERIALS PROCESSES	3+0+0	Compulsory	5
SEC302	ELECTIVE COURSES	0+0+0	Elective	0
			Total ECTS	20

<i>Course Groups</i>				
MSE316	PHYSICAL METALLURGY	3+0+0	Elective	4
MSE334	STEEL AND HEAT TREATMENT	3+0+0	Elective	4
MSE336	INTRODUCTION TO COMPOSITE MATERIALS	3+0+0	Elective	4
MSE338	MICROSTRUCTURAL EVOLUTION IN MATERIALS	2+1+0	Elective	4
MSE340	MODELING OF THE FLOW IN POLYMER PROCESSING	3+0+0	Elective	4
MSE356	MATERIALS FOR SENSORIAL APPLICATIONS	3+0+0	Elective	4
MSE370	INTRODUCTION TO BIOMATERIALS	3+0+0	Elective	4

7.Semester Course Plan				
Course Code	Course Name	T+A+L	Compulsory/Elective	ECTS
MSE400	INDUSTRIAL PRACTICES II	0+2+0	Compulsory	4
MSE403	SELECTION AND PERFORMANCE OF MATERIALS	2+1+0	Compulsory	5
MSE411	GRADUATION PROJECT I	0+2+0	Compulsory	4
SEC401	ELECTIVE COURSES	0+0+0	Elective	0
			Total ECTS	13

<i>Course Groups</i>				
ENGR450	ENGINEERING APPLICATION ON SITE	5+0+0	Elective	15
ERS400	ERASMUS INDUSTRIAL PRACTICE II	0+0+0	Elective	5
MSE401	NANOTECHNOLOGY AND NANOMATERIALS	3+0+0	Elective	5
MSE407	DEFORMATION PROCESSES	3+1+0	Elective	4
MSE409	SPECIAL SUBJECT IN MATERIALS SCIENCE AND ENGINEERING	3+0+0	Elective	4
MSE413	THIN FILMS FABRICATION AND CHARACTERIZATION	3+0+0	Elective	4
MSE415	GLASS TECHNOLOGY	3+0+0	Elective	4
MSE417	POWDER BASED PRODUCTION METHODS	3+0+0	Elective	4
MSE431	NOVEL MATERIALS FOR ENERGY APPLICATION	3+0+0	Elective	4
MSE433	INTRODUCTION TO MODELING AND SIMULATION	3+0+0	Elective	4
MSE435	WASTE MANAGEMENT	3+0+0	Elective	4
MSE437	METAL FATIGUE AND CREEP	3+0+0	Elective	4

8.Semester Course Plan				
Course Code	Course Name	T+A+L	Compulsory/Elective	ECTS
MSE402	ELECTRICAL,MAGNETIC AND OPTICAL PROPERTIES OF MATERIALS	3+0+0	Compulsory	5
MSE412	GRADUATION PROJECT II	0+2+0	Compulsory	4
SEC402	ELECTIVE COURSES	0+0+0	Elective	0
			Total ECTS	9

<i>Course Groups</i>				
ENGR374	INTRODUCTION TO STANDARDIZATION AND PATENTING	3+0+0	Elective	5
MSE404	DIFFRACTION AND STRUCTURE	3+0+0	Elective	5
MSE432	DESIGN OF MEDICAL DEVICES AND IMPLANTS	3+0+0	Elective	4
MSE434	BORON CONTAINING MATERIALS	3+0+0	Elective	4
MSE436	FORENSIC MATERIALS	3+0+0	Elective	4
MSE438	PROCESSING AND CHARACTERIZATION OF POLYMERS	3+0+0	Elective	4
MSE442	CORROSION AND SURFACE PROTECTION	3+0+0	Elective	4
MSE446	SEMICONDUCTORS	3+0+0	Elective	4
MSE448	BIOSENSORS FUNDAMENTALS AND APPLICATIONS	3+0+0	Elective	4
MSE450	ADVANCED TECHNOLOGY CERAMICS	3+0+0	Elective	4
MSE452	WELDING TECHNOLOGY	3+0+0	Elective	4
MSE462	SELECTED TOPICS IN MATERIALS SCIENCE	2+0+0	Elective	3