

CURRICULUM

Year	1				
Semester	Fall				
#	Course Code	Course Title	T	L/A	ECTS
1	MATH 101	Calculus-I	4	0	6
2	PHYS 101	Physics-I	3	0	4
3	CHEM 101	General Chemistry	3	0	5
4	ESE 101	Introduction to Energy Systems Engineering	2	0	2
5	ESE 103	Computer Aided Technical Drawing	2	2	5
6	ENG 101	Academic English-I	3	0	4
7	TDL 101	Turkish language-I	2	0	1
8	TIT 101	History of the Turkish Revolution-I	2	0	1
9	PHYS 103	Physics Laboratory I	0	2	2
		Total	21	4	30
		Year Total			
		Cumulative Total	21	4	30

Year	2				
Semester	Fall				
#	Course Code	Course Title	T	L/A	ECTS
1	ENGR 201	Engineering Mathematics-I	4	0	6
2	ESE 201	Materials Science	2	1	4
3	ESE 203	Thermodynamics-I	3	0	5
4	ESE 205	Principle of Electrical and Electronics Engineering	2	0	2
5	ESE 207	Manufacturing Technologies	2	0	3
6	ENG 201	Technical English	3	0	4
7	ENGR 265	Principles of Occupational Health & Safety	2	0	3
		Total	18	1	27
		Year Total			
		Cumulative Total	62	9	87

Year	3				
Semester	Fall				
#	Course Code	Course Title	T	L/A	ECTS
1	ESE 301	Fluid Mechanics	3	0	5
2	ESE 303	Energy Systems-I	3	0	5
3	ESE 305	Heat Transfer	4	0	5
4	ESE 307	Control Systems	3	0	5
5	ESE 309	Energy Economy	2	0	3
6	ESE 300	Industrial Practice-I	0	2	4
		Total	15	2	27
		Year Total			
		Cumulative Total	97	12	144

Year	4				
Semester	Fall				
#	Course Code	Course Title	T	L/A	ECTS
1	ESE 401	Graduation Project-I	3	3	6
2	ESE 403	Energy Systems Laboratory-I	1	2	5
3	ESE 400	Industrial Practice-II	0	2	4
4		Department Elective (DE4)	3	0	5
5		Department Elective (DE4)	3	0	5
6		Department Elective (DE4)	3	0	5
		Total	13	7	30
		Year Total			
		Cumulative Total	128	19	204

Year	1				
Semester	Spring				
#	Course Code	Course Title	T	L/A	ECTS
1	MATH 102	Calculus-II	4	0	6
2	PHYS 102	Physics-II	3	0	4
3	ESE 102	Statics	4	0	5
4	MATH 106	Probability and Statistics	3	0	3
5	ESE 106	Computer Programming	2	2	4
6	ENG 102	Academic English II	3	0	4
7	TDL 102	Turkish language II	2	0	1
8	PHYS 104	Physics Laboratory 2	0	2	2
9	TIT 102	History of the Turkish Revolution-II	2	0	1
		Total	23	4	30
		Year Total	44	8	60
		Cumulative Total	44	8	60

Year	2				
Semester	Spring				
#	Course Code	Course Title	T	L/A	ECTS
1	ENGR 202	Engineering Mathematics-II	4	0	6
3	ESE 204	Thermodynamics-II	3	0	5
4	ESE 206	Basics of Renewable Energy	2	1	4
5	ESE 208	Electronic	3	0	4
6	ESE 210	Electromechanical Energy Transformation	3	0	4
7	ESE 212	Energy and Environment	3	0	4
8	ENGR266	Principles of Occupational Health & Safety-II	2	0	3
		Total	20	1	30
		Year Total	38	2	57
		Cumulative Total	82	10	117

Year	3				
Semester	Spring				
#	Course Code	Course Title	T	L/A	ECTS
1	ESE 302	Measurement and Data Evaluation	3	0	5
2	ESE 304	Energy Systems-II	3	0	5
3	ESE 306	Numerical Methods for Engineers	3	0	5
4		Department Elective (DE3)	3	0	5
5		Department Elective (DE3)	3	0	5
6		Department Elective (DE3)	3	0	5
		Total	18	0	30
		Year Total	33	2	57
		Cumulative Total	115	12	174

Year	4				
Semester	Spring				
#	Course Code	Course Title	T	L/A	ECTS
1	ESE 402	Graduation Project-II	3	3	6
2	ESE 406	Energy Managment	3	0	4
3	ESE 404	Energy Systems Laboratory-II	1	2	5
4		Department Elective (DE4)	3	0	5
5		Department Elective (DE4)	3	0	5
6		Department Elective (DE4)	3	0	5
		Total	16	5	30
		Year Total	29	12	60
		Cumulative Total	144	24	234

Students may choose any elective course offered by the faculty, or rectorate, provided that it is taught entirely in English, to complete the required 240 credits.

ELECTIVE COURSES									
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2rd Year Elective Courses		2				
Semester	Fall					
#	Course Code	Course Title	T	L/A	ECTS	
1	ENGR206	SCIENCE, TECHNOLOGY AND SOCIETY	2		3	
2	ENGR213	COMPUTER NETWORKS	3		3	
3	ENGR251	ENGINEERING ETHICS	2		3	
4	ENGR322	LABOR LAW	3		3	
		Total			12	

2rd Year Elective Courses		2				
Semester	Spring					
#	Course Code	Course Title	T	L/A	ECTS	
1	ENGR206	SCIENCE, TECHNOLOGY AND SOCIETY	2		3	
2	ENGR213	COMPUTER NETWORKS	3		3	
3	ENGR227	BASIC PHOTOGRAPHY	2		3	
4	ENGR251	ENGINEERING ETHICS	2		3	
4	ENGR322	LABOR LAW	3		3	
		Total			15	

3rd Year Elective Courses		3				
Semester	Spring					
#	Course Code	Course Title	T	L/A	ECTS	
1	ESE 310	Solar Energy Systems and Design	3	0	5	
2	ESE 312	Design of Power Plants	3	0	5	
3	ESE 316	Fuels and Combustion	3	0	5	
4	ESE 318	Mass Transferr	3	0	5	
4	ESE 320	Energy Storage Systems	3	0	5	
6	ESE 322	Electromagnetic Theory	3	0	5	
7						
		Total			30	
		Year Total				
		Cumulative Total				

4th Year Elective Courses		4				
Semester	Fall					
#	Course Code	Course Title	T	L/A	ECTS	
1	ESE 411	Biomass	3	0	5	
2	ESE 413	Energy Efficiency	3	0	5	
3	ESE 417	Geothermal Energy	3	0	5	
4	ESE 419	Fossil Energy Resources	3	0	5	
5	ESE 421	Semiconductor Physics	3	0	5	
6	ESE 423	Power Systems	3	0	5	
8	ESE425	Principles of Project Management	3	0	5	
9	ESE427	Electrochemical Energy Systems	3	0	5	
		Total			40	
		Year Total				
		Cumulative Total				

4th Year Elective Courses		4				
Semester	Spring					
#	Course Code	Course Title	T	L/A	ECTS	
1	ESE 410	Energy Law/Politics	3	0	5	
2	ESE 412	Hydrogen Energy Systems	3	0	5	
3	ESE 414	Design of Nuclear Reactors	3	0	5	
4	ESE 416	Modelling and Simulation	3	0	5	
5	ESE 418	Modern Physics	3	0	5	
6	ESE 420	Fuel Cells	3	0	5	
9	ESE 422	Principles of Wind Energy Systems	3	0	5	
		Total			35	
		Year Total				
		Cumulative Total				

UE: University Elective (Any course with minimum 3 ECTS, given by the University)
FE: Faculty Elective (Any course with minimum 3 ECTS, given by the Faculty)

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