

MARCH-2014

**FIRAT UNIVERSITY FACULTY OF ENGINEERING
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING
COURSE LIST IMPLEMENTED SINCE THE 2012-2013 ACADEMIC YEAR**

1st YEAR FALL SEMESTER

Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
1501	EEM-101	Introduction to Electrical Eng.	1	0	0	1	2	
1503	EEM-103	Fundamentals of Electrical Eng.-1	2	0	0	2	4	
1505	MAT-161	Mathematics-1	4	0	0	4	6	
1507	FIZ-111	Physics-1	4	0	0	4	6	
1509	FIZ-105	Physics Lab.-1	0	0	2	1	3	
1517	BMU-117	Algorithm and Programming	2	0	2	3	7	
1893	YDI-109	Advanced English-1	2	0	0	2	2	
			15	0	4	17	30	

T = Theoretical hours per week

P = Practical hours per week

L = Laboratory hours per week

1st YEAR SPRING SEMESTER

Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
1002	EEM-102	Fundamentals of Electrical Eng.-2	2	0	0	2	5	
1006	MAT-162	Mathematics-2	4	0	0	4	6	
1008	MAT-104	Linear Algebra	2	0	0	2	4	
1012	FIZ-112	Physics-2	3	0	0	3	5	
1014	FIZ-106	Physics Lab.-2	0	0	2	1	2	
1022	KIM-106	Chemistry	4	0	0	4	4	
1024	KIM-110	Chemistry Lab.	0	0	2	1	2	
1493	YDI-110	Advanced English-2	2	0	0	2	2	
			17	0	4	19	30	

2nd YEAR FALL SEMESTER

Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
2501	MAT-271	Differential Equations	4	0	0	4	5	1505 (DGZ)
2503	MMU-203	Computer-Aided Technical Drawing	2	2	0	3	5	
2505	EEM-205	Electrical Circuits Lab.	0	0	2	1	2	
2507	TRD-209	Turkish Language-1	2	0	0	0	2	
2511	AIT-201	Atatürk's Principles and History of Reforms-1	2	0	0	0	2	
2932	EEM-255	Electromagnetic Fields-1	2	0	0	2	5	
2570	EEM-257	Circuit Theory	3	0	0	3	5	
2523	EEM-223	Measurement	2	0	0	2	2	
		Social Elective Course-1	2	0	0	2	2	
			19	2	2	17	30	

Note: DGZ = Must Pass the Course

Options for Social Elective Course-1								
Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
2513	CEK-207	Industrial Sociology	2	0	0	2	2	
2515	EGT-203	Development and Learning	2	0	0	2	2	
2517	TEB-291	Oral Expression	2	0	0	2	2	
2519	ISL-251	Business Management	2	0	0	2	2	
2521	KAM-253	Political History	2	0	0	2	2	
	ISL-451	Entrepreneurship-1						

2nd YEAR SPRING SEMESTER

Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
2302	TRD-210	Turkish Language-2	2	0	0	0	2	-
2304	AİT-202	Principles of Atatürk and History of Revolution-2	2	0	0	0	2	-
2320	EEM-232	Technical English	3	0	0	3	3	1893(DGZ), 1493(DGZ)
2340	İST-234	Probability and Statistics	3	0	0	3	4	-
2328	EEM-228	Measurement Lab	0	0	2	1	2	-
2326	EEM-226	Electromagnetic Fields 2	2	0	0	2	3	-
2360	EEM-236	Circuit Analysis	3	0	0	3	4	-
2402	EEM-242	Analog Electronics-1	3	0	0	3	4	-
2400	EEM-240	Electromechanical Energy Conversion	3	0	0	3	4	-
		Social Elective Course-2	2	0	0	2	2	
			23	0	2	20	30	
Options for Social Elective Course-2								
Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
2314	İKT-252	Economics	2	0	0	2	2	-
2316	ÇEK-252	Occupational Health and Safety	2	0	0	2	2	-
2318	İŞL-256	Intellectual and Industrial Property	2	0	0	2	2	-
2322	KAM-252	Total Quality Management	2	0	0	2	2	-
2324	ÇEK-256	Management Sociology	2	0	0	2	2	-
	İŞL-451	Entrepreneurship-2						-

3rd YEAR FALL SEMESTER								
1st Branch (Energy)								
Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
3503	EEM-303	Electrical Machines-1	3	0	0	3	5	2400 (DAZ)
3505	EEM-305	Power Systems-1	3	0	0	3	4	-
3509	EEM-309	Professional Practice-1	0	2	0	1	2	-
3515	EEM-315	Analog Electronics-2	3	0	0	3	5	-
3533	EEM-333	Automatic Control-1	3	0	0	3	4	-
3535	EEM-335	Logic Circuits	3	0	0	3	5	-
3543	EEM-343	Electronics Lab.-1	0	0	2	1	2	2402 (DGZ)
-	-	Technical Elective Course-1	2	0	0	2	3	-
			17	2	2	19	30	
DAZ = Must Continue								
2nd Branch (Electronics)								
Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
3509	EEM-309	Professional Practice-1	0	2	0	1	2	-
3513	EEM-313	Signals and Systems	3	0	0	3	4	-
3515	EEM-315	Analog Electronics-2	3	0	0	3	5	-
3533	EEM-333	Automatic Control-1	3	0	0	3	4	-
3535	EEM-335	Logic Circuits	3	0	0	3	5	-
3537	EEM-337	Electrical Machines	3	0	0	3	5	2400 (DAZ)
3543	EEM-343	Electronics Lab.-1	0	0	2	1	2	2402 (DGZ)
-	-	Technical Elective Course-1	2	0	0	2	3	-
			17	2	2	19	30	
3rd Branch (Communication)								
Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
3509	EEM-309	Professional Practice-1	0	2	0	1	2	-
3513	EEM-313	Signals and Systems	3	0	0	3	4	-

3515	EEM-315	Analog Electronics-2	3	0	0	3	5	-
3533	EEM-333	Automatic Control-1	3	0	0	3	4	-
3535	EEM-335	Logic Circuits	3	0	0	3	5	-
3537	EEM-337	Electrical Machines	3	0	0	3	5	2400 (DAZ)
3543	EEM-343	Electronics Lab.-1	0	0	2	1	2	2402 (DGZ)
-	-	Technical Elective Course-1	2	0	0	2	3	-
			17	2	2	19	30	
Technical Elective Course-1								
Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
3523	MEM-323	Material Science	2	0	0	2	3	-
3527	MMÜ-327	Engineering Mechanics	2	0	0	2	3	-
3541	BMÜ-341	Artificial Intelligence	2	0	0	2	3	-
3531	ÇMÜ-331	Hydrology	2	0	0	2	3	-

3rd YEAR SPRING SEMESTER								
1st Branch (Energy)								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
3004	EEM-304	Electrical Machines-2	3	0	0	3	4	
3006	EEM-306	Power Systems-2	3	0	0	3	4	
3008	EEM-308	Power Electronics	3	0	0	3	5	
3044	EEM-344	Data Analysis in EEE	2	0	2	3	6	
3064	EEM-364	Electrical Machines Lab.-1	0	0	2	1	2	3503 (DGZ)
3058	EEM-358	Microprocessors	2	0	2	3	6	
		Technical Elective Course-2	2	0	0	2	3	
			15	0	6	18	30	

2nd Branch (Electronics)								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
3008	EEM-308	Power Electronics	3	0	0	3	5	
3014	EEM-314	Analog Communication	3	0	0	3	4	
3044	EEM-344	Data Analysis in EEE	2	0	2	3	6	
3046	EEM-346	Electronics Lab.-2	0	0	2	1	2	3515 (DGZ)
3048	EEM-348	Electrical Installations	3	0	0	3	4	
3058	EEM-358	Microprocessors	2	0	2	3	6	
		Technical Elective Course-2	2	0	0	2	3	
			15	0	6	18	30	
3rd Branch (Communication)								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
3012	EEM-312	Electromagnetic Waves	3	0	0	3	5	
3014	EEM-314	Analog Communication	3	0	0	3	4	
3044	EEM-344	Data Analysis in EEE	2	0	2	3	6	
3046	EEM-346	Electronics Lab.-2	0	0	2	1	2	3515 (DGZ)
3048	EEM-348	Electrical Installations	3	0	0	3	4	
3058	EEM-358	Microprocessors	2	0	2	3	6	
		Technical Elective Course-2	2	0	0	2	3	
			15	0	6	18	30	
Technical Elective Course-2								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
3062	EEM-362	Automatic Control-2	2	0	0	2	3	
3052	EEM-352	Filter Design Methods	2	0	0	2	3	
3054	EEM-354	Electrical Energy Generation Systems	2	0	0	2	3	
3056	EEM-356	Control Circuits	2	0	0	2	3	

4TH YEAR FALL SEMESTER								
1st Branch (Energy)								
Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
4501	EEM-401	Design in EEM	1	1	0	2	8	-
4505	EEM-405	Professional Practice-2	0	2	0	1	2	-
4585	EEM-485	Electrical Machines Lab.-2	0	0	2	1	2	2400 or 3004 (DGZ)
4553	EEM-453	Industrial Measurement	2	0	0	2	3	-
-	-	Technical Elective Course-3	2	0	0	2	3	-
-	-	Technical Elective Course-4	2	0	0	2	3	-
-	-	Technical Elective Course-5	2	2	0	3	7	-
-	-	Technical Elective Course-6	0	0	2	1	2	-
			9	5	4	14	30	
Energy Branch Technical Elective Course Options for the Fall Semester								
Optic Code	Course Code	Course Name	T	P	L	Credit	ECTS	
4555	EEM-455	Protection in Power Systems	2	0	0	2	3	Technical Elective Course-3
4571	EEM-471	Process Control	2	0	0	2	3	-
4579	EEM-479	Antennas and Propagation	2	0	0	2	3	-
4557	EEM-457	Dynamics of Electrical Machines	2	0	0	2	3	Technical Elective Course-4
4559	EEM-459	Communication Systems	2	0	0	2	3	-
4535	EEM-435	Power Electronics Systems	2	0	0	2	3	-
4561	EEM-461	Lighting Technology and Interior Installation Projects	2	2	0	3	7	Technical Elective Course-5
4563	EEM-463	Industrial Automation	2	2	0	3	7	
4565	EEM-465	Digital Signal Processing	3	0	0	3	7	
4567	EEM-467	Logic Circuits Lab.	0	0	2	1	2	Technical Elective Course-6
4569	EEM-469	Control Lab.	0	0	2	1	2	

4TH YEAR SPRING SEMESTER								
1st Branch (Energy)								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
4000	EEM-400	High Voltage Technique	3	0	0	3	4	
4002	EEM-402	Labor Law	2	0	0	2	2	
4004	EEM-404	Graduation Project	0	2	0	1	12	
4006	EEM-406	Electrical Facilities Lab	0	0	2	1	2	3505 or 3006 ((DGZ))
		Technical Elective-7	0	0	2	1	2	
		Technical Elective-8	2	2	0	3	4	
		Technical Elective-9	3	0	0	3	4	
			10	4	4	14	30	
Spring Semester Technical Elective Course Options for Energy								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	
4038	EEM-438	Power Electronics Lab	0	0	2	1	2	Technical Elective-7
4058	EEM-458	Process Control Lab	0	0	2	1	2	
4068	EEM-468	Communication Systems Lab	0	0	2	1	2	
4048	EEM-448	Energy Distribution and Project	2	2	0	3	4	Technical Elective-8
4062	EEM-462	Programmable Logic Controllers and Applications	2	2	0	3	4	
4050	EEM-450	Special Electric Machines	3	0	0	3	4	Technical Elective-9
4052	EEM-452	Industrial Electricity	3	0	0	3	4	
4054	EEM-454	Energy Lines Engineering	3	0	0	3	4	
4056	EEM-456	Modern Control Methods of Electrical Machines	3	0	0	3	4	

4th Year Fall Semester								
2nd Branch (Electronics)								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
4501	EEM-401	Design in Electrical and Electronics Engineering	1	1	0	2	8	
4505	EEM-405	Professional Practice-2	0	2	0	1	2	
4509	EEM-409	Electrical Machines Lab	0	0	2	1	2	3048 or 3537 ((DGZ))
4553	EEM-453	Industrial Measurement	2	0	0	2	3	
		Technical Elective-3	2	0	0	2	3	
		Technical Elective-4	2	0	0	2	3	
		Technical Elective-5	2	2	0	3	7	
		Technical Elective-6	0	0	2	1	2	
			9	5	4	14	30	
Fall Semester Technical Elective Course Options for Electronics:								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	
4555	EEM-455	Protection in Power Systems	2	0	0	2	3	Technical Elective-3
4571	EEM-471	Process Control	2	0	0	2	3	
4579	EEM-479	Antennas and Propagation	2	0	0	2	3	
4573	EEM-473	Communication Electronics	2	0	0	2	3	Technical Elective-4
4575	EEM-475	Industrial Electronics	2	0	0	2	3	
4529	EEM-429	Imaging Systems	2	0	0	2	3	
4561	EEM-461	Lighting Technology and Indoor Installation Project	2	2	0	3	7	Technical Elective-5
4577	EEM-477	Microcontrollers and Applications	2	2	0	3	7	
4581	EEM-481	Optoelectronics	3	0	0	3	7	
4567	EEM-467	Logic Circuits Lab	0	0	2	1	2	Technical Elective-6
4569	EEM-469	Control Lab	0	0	2	1	2	

4th Year Spring Semester								
2nd Branch (Electronics)								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
4002	EEM-402	Labor Law	2	0	0	2	2	
4004	EEM-404	Graduation Project	0	2	0	1	12	
4012	EEM-412	Communication Lab	0	0	2	1	2	3014 or 3513 ((DGZ))
4044	EEM-444	Digital Control	3	0	0	3	4	
		Technical Elective-7	0	0	2	1	2	
		Technical Elective-8	2	2	0	3	4	
		Technical Elective-9	3	0	0	3	4	
			10	4	4	14	30	
Spring Semester Technical Elective Course Options for Electronics								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	
4038	EEM-438	Power Electronics Lab	0	0	2	1	2	Technical Elective-7
4058	EEM-458	Process Control Lab	0	0	2	1	2	
4068	EEM-468	Communication Systems Lab	0	0	2	1	2	
4000	EEM-400	High Voltage Technology	3	0	0	3	4	Technical Elective-8
4048	EEM-448	Energy Distribution and Project	2	2	0	3	4	
4062	EEM-462	Programmable Logic Controllers and Applications	2	2	0	3	4	
4060	EEM-460	Modern Projecting Systems	2	2	0	3	4	Technical Elective-9
4064	EEM-464	Medical Electronics	3	0	0	3	4	
4074	EEM-474	Computer Communication	3	0	0	3	4	
4066	MMÜ-466	Robotic Systems	3	0	0	3	4	

4th Year Fall Semester								
3rd Branch (Communication))								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
4501	EEM-401	Design in Electrical Engineering	1	1	0	2	8	
4505	EEM-405	Professional Practice-2	0	2	0	1	2	
4509	EEM-409	Electrical Machines Lab	0	0	2	1	2	3048 or 3537 ((DGZ))
4553	EEM-453	Industrial Measurement	2	0	0	2	3	
		Technical Elective-3	2	0	0	2	3	
		Technical Elective-4	2	0	0	2	3	
		Technical Elective-5	2	2	0	3	7	
		Technical Elective-6	0	0	2	1	2	
			9	5	4	14	30	
Fall Semester Technical Elective Course Options for Communication								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	
4555	EEM-455	Protection in Power Systems	2	0	0	2	3	Technical Elective-3
4571	EEM-471	Process Control	2	0	0	2	3	
4579	EEM-479	Antennas and Propagation	2	0	0	2	3	
4573	EEM-473	Communication Electronics	2	0	0	2	3	Technical Elective-4
4583	EEM-483	Satellite Communication	2	0	0	2	3	
4529	EEM-429	Imaging Systems	2	0	0	2	3	
4561	EEM-461	Lighting Technology and Indoor Wiring Project	2	2	0	3	7	Technical Elective-5
4577	EEM-477	Microcontrollers and Applications	2	2	0	3	7	
4565	EEM-465	Digital Signal Processing	3	0	0	3	7	
4567	EEM-467	Logic Circuits Lab	0	0	2	1	2	Technical Elective-6
4569	EEM-469	Control Lab	0	0	2	1	2	

4th Year Spring Semester								
3rd Branch (Communication))								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	Prerequisite
4002	EEM-402	Labor Law	2	0	0	2	2	
4004	EEM-404	Graduation Project	0	2	0	1	12	
4012	EEM-412	Communication Lab	0	0	2	1	2	3014 or 3513 ((DGZ))
4046	EEM-446	Digital Communication	3	0	0	3	4	
		Technical Elective-7	0	0	2	1	2	
		Technical Elective-8	2	2	0	3	4	
		Technical Elective-9	3	0	0	3	4	
			10	4	4	14	30	
Spring Semester Technical Elective Course Options for Communication:								
Optical Code	Course Code	Course Name	T	P	L	Credit	ECTS	
4038	EEM-438	Power Electronics Lab	0	0	2	1	2	Technical Elective-7
4058	EEM-458	Process Control Lab	0	0	2	1	2	
4068	EEM-468	Communication Systems Lab	0	0	2	1	2	
4000	EEM-400	High Voltage Engineering	3	0	0	3	4	Technical Elective-8
4048	EEM-448	Energy Distribution and Project	2	2	0	3	4	
4062	EEM-462	Programmable Logic Controllers and Applications	2	2	0	3	4	
4072	EEM-472	Fiber Optic Communication	3	0	0	3	4	Technical Elective-9
4074	EEM-474	Computer Communication	3	0	0	3	4	
4070	EEM-470	Microwave Technology	3	0	0	3	4	
4076	EEM-476	Wireless Communication	3	0	0	3	4	