

FACULTY OF ENGINEERING, DEPARTMENT OF MECHANICAL ENGINEERING OF RAILWAY SYSTEMS ENGINEERING

2014-2015 ACADEMIC CURRICULUM, CODE OF PROGRAMME: 0231, (100% English), (I. EDUCATION), (Prep. Class-2013)

2014-2015 ACADEMIC CURRICULUM, CODE OF PROGRAMME: 0232, (100% English), (II. EDUCATION), (Prep. Class-2013)

PREPARATION CLASS

Prep Class 1st. Semester						Prep Class 2nd. Semester					
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
RSE000	Preparation	0	0	0	0	RSE000	Preparation	0	0	0	0

I. CLASS

1st. Semester Courses						2nd. Semester Courses					
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
CAL183	Mathematics I	4	0	4	4	CAL186	Mathematics II	4	0	4	4
PHY183	General Physics I	4	0	4	4	PHY186	General Physics II	4	0	4	4
CHE183	General Chemistry	3	0	3	3	CAL192	Lineer Algebra	3	0	3	3
CME183	Information Technologies and Applications	2	2	3	4	CME182	Computer Programming	2	2	3	4
RSE105	Computer Aided Technical Drawing I	2	2	3	6	RSE106	Computer Aided Technical Drawing II	2	2	3	3
RSE101	Fundamentals of Railway Sytems Engineering	2	0	2	3	MCE102	Statics	4	0	4	4
Total		17	4	19	30	MCE108	Measurement Techniques	2	0	2	2
						Total		21	4	23	30

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
TRK181	Turkish Language I	2	0	2	2	TRK182	Turkish Language II	2	0	2	2
FOL181	Foreign Language I	2	0	2	2	FOL182	Foreign Language II	2	0	2	2

II. CLASS

3rd. Semester Courses						4th. Semester Courses					
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
FOL281	Technical Foreign Language I	2	0	2	2	FOL282	Technical Foreign Language II	2	0	2	2
CAL283	Differantial Equations	3	0	3	4	RSE204	Dynaics of Railway Systems	3	0	3	5
MME261	Materials Science	3	0	3	4	MCE212	Mechanisms	3	0	3	4
MCE219	Manufacturing Processes I	3	1	3,5	5	MCE216	Manufacturing Processes II	3	1	3,5	5
MCE221	Thermodynamics I	3	0	3	4	MCE218	Thermodynamics II	3	0	3	4
MCE201	Strength of Materials I	3	0	3	4	MCE220	Strength of Materials II	3	0	3	4
MCE207	Dynamics	3	0	3	4	MCE202	Engineering Materials	3	0	3	4
RSE203	Electric-Electronic of Railway Systems	2	0	2	3	MCE260	Mechanical Vibrations	2	0	2	2
Total		22	1	22,5	30	Total		22	1	22,5	30

III. CLASS

5th. Semester Courses						6th. Semester Courses					
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
RSE399	Industrial Practice I	0	0	0	4	FOL382	Foreign Language for Business	2	0	2	2
FOL381	Speaking and Reading Tech. At Foreign Language	2	0	2	2	RSE302	Railway System Engineering Laboratory	1	1	1,5	2
RSE311	Design of Bogie and Suspension Systems	3	0	3	3	MCE304	Fluid Mechanics II	3	0	3	3
MCE301	Fluid Mechanics I	3	0	3	3	MCE330	Machine Elements II	3	0	3	3
MCE325	Machine Elements I	3	0	3	3	MCE316	Computer Aided Design I	3	0	3	3
RSE313	Mechanics of Rail Vehicle	2	0	2	2	RSE312	Design of Locomotive and Wagon	2	1	2,5	3
MCE307	Dynamics of Machinery	3	0	3	3	Branch Elective Course (A₁)		3	0	3	6
	Branch Elective Course (A₁)	3	0	3	4	Branch Elective Course (A₂)		3	0	3	6
	Branch Elective Course (A₂)	3	0	3	4	Social Elective Course (C)		2	0	2	2
	Social Elective Course (B)	2	0	2	2	Total		22	2	23	30
Total		24	0	24	30						

Branch Elective Course (A)

RSE305	Heat Transfer	3	0	3	4
RSE315	Hydraulics and Pneumatics	3	0	3	4
RSE317	Plumbing Systems and Design	3	0	3	4
RSE321	Automatic Transmission	3	0	3	4
RSE331	Vehicle Damage Analysis	3	0	3	4

Branch Elective Course (A)

RSE360	Heating Technology	3	0	3	6
RSE310	System Dynamics and Controls	3	0	3	6
RSE314	Cooling Technology	3	0	3	6
RSE308	Economy of Transportation Technology	3	0	3	6
RSE328	Cnc Machine Programming	3	0	3	6

Social Elective Course (B)					
ESC301	Labour Law	2	0	2	2
ESC303	Patent and Industrial Design	2	0	2	2
ESC305	Entrepreneurship	2	0	2	2
ESC307	Communication Skills	2	0	2	2
ESC309	International Communication	2	0	2	2
ESC311	Critical Analytic Thinking Techniques	2	0	2	2
SOC381	Education of Values	2	0	2	2

Social Elective Course (C)					
ESC302	Research and Presentation Skills	2	0	2	2
ESC304	Human Resources Management	2	0	2	2
ESC306	Management Systems	2	0	2	2
ESC308	Occupational Health and Safety	2	0	2	2
ESC310	Corporate Behavior	2	0	2	2
ESC312	Standardization	2	0	2	2

2 compulsory course will be selected in each semester depending on Branch from "A" group courses

1 compulsory course will be selected in each semester depending on Branch from "B" group courses

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

IV. CLASS											
7th. Semester						8th. Semester					
Code	Course Name	LT	LB	CR	ECTS	Code	Course Name	LT	LB	CR	ECTS
RSE499	Industrial Practice II	0	0	0	4	RSE400	Graduation Thesis	0	2	1	2
RSE403	Graduation Project I	2	0	2	2	ENG402	Engineering Ethics	2	0	2	2
RSE405	Signalization	2	0	2	2	RSE404	Graduation Project II	2	0	2	2
RSE435	Computer Aided Manufacturing	3	0	3	3	RSE436	Transport Techniques	3	0	3	3
RSE437	Welding Technology	3	0	3	3		Branch Elective Course (A₁)	2	0	2	7
	Branch Elective Course (A₁)	2	1	2,5	8		Branch Elective Course (A₂)	2	0	2	7
	Branch Elective Course (A₂)	2	1	2,5	8		Branch Elective Course (A₃)	2	0	2	7
	Total	14	2	15	30		Total	13	2	14	30

Branch Elective Course (A)					
RSE407	Design of Vehicle Body and Materials	2	1	2,5	8
RSE409	Highh Speed Railway Systems	2	1	2,5	8
RSE411	Railways Traffic Control	2	1	2,5	8
RSE413	Tribology	2	1	2,5	8
RSE415	Optimization Technique	2	1	2,5	8
RSE419	Urban Rail Transportation Systems	2	1	2,5	8
RSE421	Finite Element Method on Railway System	2	1	2,5	8
RSE423	Composite Materials of Railway Systems	2	1	2,5	8
RSE425	Computer Aided Design II	2	1	2,5	8
RSE427	Computer Applications in Construction	2	1	2,5	8
RSE429	Ergonomic Product Design	2	1	2,5	8
RSE431	Kinematic Synthesis	2	1	2,5	8
	Computational Methods in				
RSE433	Mechanical Engineering	2	1	2,5	8

Branch Elective Course (A)					
RSE406	Geographical Information Systems	2	0	2	7
RSE408	Design and Production and Welding of Rail	2	0	2	7
RSE410	Railway Communication	2	0	2	7
RSE412	Design of Railway Infrastructure	2	0	2	7
RSE414	SCADA Systems	2	0	2	7
RSE416	Total Quality Management	2	0	2	7
RSE418	Computer Aided Vehicle Design	2	0	2	7
RSE420	Division of Railway System	2	0	2	7
RSE422	Railway Planning	2	0	2	7
RSE424	Principlas of Train and Railway Maintenance	2	0	2	7
RSE426	Security Standart of Railway	2	0	2	7
RSE428	Programmable Control Systems (PLC)	2	0	2	7
RSE430	Design of HVAC on Railway Systems	2	0	2	7
RSE434	Aerodynamic of Railway Systems	2	0	2	7

2 compulsory course will be selected in 7th semester and 3 compulsory course will be selected in 8th semester depending on Branch from "A" group courses

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