



Study Plan

Degree : Bachelor Faculty : Jubail Industrial College Plan Hrs.: 129
 Semester : 451 Department : Mechanical Engineering Plan Type : Major
 Edition : 3 Gender : Both
 Major : 2-3-219 Mechanical Engineering

Council Session: Deanship Session : Faculty Session : Dept Session:
 Council Date: Deanship Date: Faculty Date: Dept Date :

Group Type : Compulsory 1

First							
code	course name	H	G	L	H	requisite	Yrl
CHEM 111	General Chemistry I	4				-	-
ENGL 119	Academic Writing	3				-	-
IAS 111	Arabic Language Foundation	2				-	-
MATH 111	Calculus I	4				-	-
MECH 111	Engineering Drawing and Graphics	1				-	-
PHYS 111	General Physics I	4				MATH 111 - / C	-
Total							18

Second							
code	course name	H	G	L	H	requisite	Yrl
CE 122	Statics	3				PHYS 111 - / P	-
IAS 121	Islamic Culture	2				-	-
MATH 121	Calculus II	4				MATH 111 - / P	-
MECH 123	Programming for Mechanical Engineers	2				-	-
MECH 124	Machine Drawing	2				MECH 111 - / P	-
PE 111	Physical Education I	1				-	-
PHYS 121	General Physics II	4				MATH 121 - / C PHYS 111 - / P	-
Total							18

Third							
code	course name	H	G	L	H	requisite	Yrl
ENGL 129	Professional Communication	3				ENGL 119 - / P	-
IAS 221	Arabic Communication Skills	2				IAS 111 - / P	-
MATH 211	Calculus III	3				MATH 121 - / P	-
MECH 211	Thermodynamics I	3				PHYS 121 - / P	-
MECH 212	Materials Science	3				CHEM 111 - / P PHYS 121 - / P	-
MECH 213	Mechanics of Materials	3				CE 122 - / P MATH 121 - / P	-
MECH 214	Materials Science & Testing Laboratory	1				MECH 212 - / C MECH 213 - / C	-

Group Type : Compulsory 1

Third							
Total							18

Fourth							
code	course name	H	G	L	H	requisite	Yrl
ENGL 213	Technical Writing	3				ENGL 129 - / P	-
IAS 212	Professional Ethics in Islam	2				IAS 121 - / P	-
MATH 222	Differential Equations and Linear Algebra	3				MATH 211 - / P	-
MECH 221	Dynamics	3				CE 122 - / P	-
MECH 222	Manufacturing Processes	3				MECH 124 - / P MECH 212 - / P MECH 214 - / P	-
MECH 223	Manufacturing Laboratory	1				MECH 222 - / C	-
MECH 315	Thermodynamics II	3				MECH 211 - / P	-
Total							18

Fifth							
code	course name	H	G	L	H	requisite	Yrl
EEN 226	EE Principles and Applications	2				MATH 121 - / P PHYS 121 - / P	-
EEN 227	EE Principles and Applications Lab	1				EEN 226 - / C	-
MATH 250	Probability and Statistics	3				MATH 121 - / P	-
MECH 311	Theory of Machines	3				MECH 221 - / P	-
MECH 312	Fluid Mechanics	3				MATH 211 - / P MECH 211 - / P MECH 221 - / P	-
MECH 313	Mechanical Engineering Design I	3				MECH 213 - / P	-
MECH 316	Computational Mechanics	2				MATH 222 - / P MECH 123 - / P	-
MECH 317	Computational Mechanics Laboratory	1				MECH 316 - / C	-
Total							18

Sixth							
code	course name	H	G	L	H	requisite	Yrl
BUS 482	Business Principles and Practices	3				-	-

P : Pre-requisite

G : GPA level

H : Requisite HRS

C: Co- requisite MC : Mandetory Co--requisi NC: None Co- requisite L : Pre-course Level



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Sixth						
code	course name	H	G	L	H	requisite
ICE 332	Introduction to Mechatronics	3				EEN 226 - / P MECH 123 - / P
MECH 321	Heat Transfer	3				MECH 312 - / P MECH 315 - / P
MECH 322	Thermo-Fluids Laboratory	1				MECH 321 - / C
MECH 323	Mechanical Engineering Design II	3				MECH 313 - / P
MECH 324	Mechanical Engineering Design II Laboratory	1				MECH 323 - / C
MECH 325	Capstone Design Project	1				MECH 321 - / C MECH 323 - / C
Total						15

Seventh						
code	course name	H	G	L	H	requisite
BUS 481	Engineering Economics	3				-
MECH 112	Health, Safety & Environment	1				-
MECH 422	Measurements and Control Laboratory	1				MECH 425 - / C
MECH 423	Capstone Design Project II	2				MECH 325 - / P
MECH 425	System Dynamics & Control	2				ICE 332 - / P MATH 222 - / P
Total						9

Eighth						
code	course name	H	G	L	H	requisite
MECH 491	Field Training	3				-
Total						3

Group Type : Elective 1 (6)

code	course name	H	G	L	H	requisite	Yrl
MECH 437	Finite Element Analysis	3				MECH 321 - / P MECH 323 - / P	-
MECH 438	Advanced Manufacturing Processes	3				MECH 222 - / P	-
MECH 439	Turbomachinery	3				MECH 312 - / P MECH 315 - / P	-
MECH 442	Pumping Machinery	3				MECH 312 - / P	-
MECH 444	Fluid Power Systems	3				MECH 312 - / P	-
MECH 451	Production Engineering	3				MECH 313 - / P	-
MECH 452	Mechanical Vibrations	3				MECH 311 - / P	-
MECH 453	Energy Efficient Buildings	3				MECH 321 - / P	-
MECH 454	Energy Systems Engineering	3				MECH 315 - / P	-
MECH 455	Building Energy Informatics	3				MECH 123 - / P MECH 315 - / P	-
MECH 456	Geothermal Energy Engineering	3				MECH 315 - / P MECH 321 - / P	-
MECH 457	Wind Energy Engineering	3				MECH 312 - / P	-
MECH 458	Design for Environment	3				MECH 315 - / P	-
Total						39	

code	course name	H	G	L	H	requisite	Yrl
MECH 459	Energy Efficient Manufacturing	3				MECH 222 - / P	-
MECH 461	Internal Combustion Engines	3				MECH 315 - / P	-
MECH 462	Compressible Fluid Flow	3				MECH 312 - / P	-
MECH 463	Heat Exchangers	3				MECH 321 - / P	-
MECH 464	Metallurgy	3				MECH 222 - / P	-
MECH 465	Corrosion Engineering	3				MECH 222 - / P	-
MECH 466	Computational Fluid Dynamics	3				MECH 321 - / P	-
MECH 467	Additive Manufacturing	3				MECH 123 - / P MECH 222 - / P	-
MECH 468	Air Conditioning and Refrigeration	3				MECH 315 - / P MECH 321 - / P	-
MECH 469	Introduction to Fuel Cells	3				MECH 321 - / P	-
MECH	Industrial Noise &	3				MECH 311 - / P	-



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Category : College Requirement

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Group Type : Elective 1 (6)

Group Type : Elective 2 (6)

code	course name	H	G	L	H	requisite	Yrl
471	Control						
MECH 472	Energy Conversion	3				MECH 311 - / P	-
Total							36

code	course name	H	G	L	H	requisite	Yrl
BUS 244	Legal Environment in Business	3				-	-
CHEM 432	Chemistry of Materials and Environment	3				CHEM 111 - / P	-
CHEM 433	Green Chemistry and Engineering	3				CHEM 111 - / P	-
CHEM 434	Chemistry of Petrochemical Processes	3				CHEM 111 - / P	-
CHEN 436	Water Treatment and Desalination	3				CHEM 111 - / P	-
CHEN 438	Nanomaterials	3				CHEM 111 - / P	-
CIT 233	Enterprise Resource Planning	3				ENGL 119 - / P	-
ICE 439	Principle of Automation	3				MATH 121 - / P	-
MATH 432	Engineering Mathematics	3				MATH 222 - / P	-
MATH 433	Operations Research	3				MATH 222 - / P	-
MECH 445	Solar Energy Engineering	3				-	-
MECH 446	Energy Conservation	3				-	-
MECH 447	Maintenance Engineering	3				-	-
MECH 448	Renewable Energy Systems	3				-	-
MECH 449	Sustainable Energy Engineering	3				-	-
PHYS 131	General Physics 3	3				PHYS 121 - / P	-
PHYS 212	Modern Physics	3				PHYS 121 - / P	-
PHYS 213	Nano Science	3				PHYS 121 - / P	-
Total							54