

برنامج هندسة الطاقة الجديدة والمتجددة
Renewable and Sustainable Energy Engineering

خطة الدراسة

1. University Requirements (25 Credits)

Compulsory Courses (19 Credits)							
Code	Course Title	Prerequisite	Cont. hrs.				Credits
			L	T	P	∑	
GEN-C001	English Language		2	2		4	3
GEN-C002	Introduction to Computers		2		3	5	3
GEN-C101	Human Rights		2			2	2
GEN-C102	Project Management		2			2	2
GEN-C201	Presentation Skills		2		3	5	3
GEN-C202	Foundation of Economics		2	2		4	3
GEN-C301	Writing Technical Report		2	2		4	3

Elective Courses (6 Credits)							
Code	Course Title	Prerequisite	Cont. hrs.				Credits
			L	T	P	∑	
GEN-C003	English Oral Communication and Pronunciation	GEN-C001	1	2		3	2
GEN-C103	Critical Thinking		2			2	2
GEN-C203	Accounting		1	2		3	2
GEN-C204	Marketing		2			2	2
GEN-C205	Risk Management	GEN-C102	2			2	2
GEN-C206	Engineering Ethics and Skills		2	2		4	3
GEN-C302	Engineering Economy	GEN-C202	1	2		3	2

2. Faculty Requirements (45 Credits)

Compulsory Courses (34 Credits)							
Code	Course Title	Prerequisite	Cont. hrs.				Credits
			L	T	P	Σ	
FAC-C001	Mathematics (1)		2	2		4	3
FAC-C002	Physics (1)		2		3	5	3
FAC-C003	Engineering Science History		2			2	2
FAC-C004	Mathematics (2)	FAC-C001	2	2		4	3
FAC-C005	Chemistry		2		3	5	3
FAC-C006	Physics (2)	FAC-C002	2		3	5	3
FAC-C007	Applied Mechanics		2	2		4	3
FAC-C008	Manufacturing Engineering		1	2		3	2
FAC-C009	Engineering Drawing		1	4		5	3
FAC-C010	Computer Language and Applications		2		3	5	3
FAC-C101	Probability and statistics	FAC-C004	2	2		4	3
FAC-C401	Graduation Project		2		3	5	3

Elective Courses (11 Credits)							
Code	Course Title	Prerequisite	Cont. hrs.				Credits
			L	T	P	Σ	
FAC-C102	Numerical Calculations	FAC-C004	2	2		4	3
FAC-C103	Advanced Mathematics	FAC-C004	2	2		4	3
FAC-C104	Information Technology Systems		2		3	5	3
FAC-C105	Statistical Methods	FAC-C101	2	2		4	3
FAC-C106	Discrete Mathematics	FAC-C001	1	2		3	2
FAC-C107	Energy Conversion		2	2		4	3
FAC-C201	System Modeling and Simulation	FAC-C102	1		3	4	2
FAC-C202	Linear Programming	FAC-C004	2	2		4	3
FAC-C203	Data Acquisition Systems	FAC-C010	1		3	4	2

3. Program Requirements (110 Credits)

Compulsory Courses (100 Credits)							
Code	Course Title	Prerequisite	Cont. hrs.				Credits
			L	T	P	Σ	
MPE-C101	Introduction to Energy Science		2		3	5	3
ELE-C101	Circuits (1)		2		3	5	3
MPE-C102	Operation Research	FAC-C004	2		3	5	3
MPE-C103	Computer Aided Design	FAC-C010	1		3	4	2
MPE-C104	Instrumentation Measurement		2		3	5	3
ELE-C102	Electronics	ELE-C101	2		3	5	3
MPE-C201	Thermodynamics (1)	FAC-C006	2		3	5	3
MPE-C202	Fluid Mechanics (1)	FAC-C006	2		3	5	3
ELE-C202	Electrical Power Systems (1)	ELE-C101	2		3	5	3
RSE-C201	Solar Energy	MPE-C101	2		3	5	3
PRE-C202	Engineering Materials	FAC-C006	2		3	5	3
MPE-C203	Thermodynamics (2)	MPE-C201	2		3	5	3
MPE-C204	Aerodynamics	MPE-C202	2		3	5	3
ELE-C201	Electric Machines (1)	ELE-C101	2		3	5	3
MPE-C301	Heat Transfer	MPE-C101	2		3	5	3
MPE-C302	Machine Design	PRE-C201	2		3	5	3
MPE-C303	Combustion and Pollution Control	MPE-C101	2		3	5	3
RSE-C301	Wind Energy	MPE-C204	2		3	5	3
RSE-C302	Automatic Control Systems	MPE-C103	2		3	5	3
RSE-C303	Industrial Training	120 Credits					2
MPE-C304	Hydraulic Machines	MPE-C202	2		3	5	3
RSE-C304	Quality Control Management	FAC-C101	2		3	5	3
MPE-C305	Fluid Mechanics (2)	MPE-C202	2		3	5	3
MPE-C306	Computational Fluid Dynamics	MPE-C202	2		3	5	3
ELE-C302	Power Electronics (1)	ELE-C102	2		3	5	3
RSE-C304	Solar cells systems	RSE-C201	2		3	5	3
RSE-C401	Hydrogen and Fuel Cells	FAC-C005	2		3	5	3
RSE-C402	Solar Desalination Systems	RSE-C201	2		3	5	3

RSE-C403	Hydro Power Systems	MPE-C305	2		3	5	3
RSE-C404	Solar Power Plants	RSE-C201	2		3	5	3
RSE-C405	Thermal Power Plants	MPE-C203	2		3	5	3
RSE-C406	Design of Wind Turbines	RSE-C301	2		3	5	3
RSE-C407	Bio-Energy Conversion & Processing of Waste	MPE-C303	2		3	5	3
RSE-C408	Tidal Energy	MPE-C305	2		3	5	3

Elective Courses (10 Credits)							
Code	Course Title	Prerequisite	Cont. hrs.				Credits
			L	T	P	Σ	
RSE-C305	Applied Heat Mass Transfer	MPE-C301	2	2		4	3
RSE-C306	Solar Cooling and Heating	MPE-C203	2		3	5	3
RSE-C307	Microcontroller-Based Systems	ELE-C302	2		3	5	3
ELE-C303	Circuits (2)	ELE-C101	2		3	5	3
ELE-C304	Electric Machines (2)	ELE-C201	2		3	5	3
RSE-C409	Geothermal Energy Systems	MPE-C101	2			2	2
RSE-C410	PV Technology and Manufacturing	RSE-C304	2			2	2
RSE-C411	PV in the Built Environment	RSE-C304	2			2	2
RSE-C412	Energy Storage and Heat Recovery	RSE-C201	2		3	5	3
RSE-C413	Special Machines for Wind Turbines	RSE-C406	2		3	5	3
RSE-C414	Environmental Engineering and Pollution Control	MPE-C303	2		3	5	3
RSE-C415	Waste Management and Energy Recovery	RSE-C407	2		3	5	3
ELE-C403	Electrical Power Systems (2)	ELE-C202	2	2		4	3
ELE-C404	Power Electronics (2)	ELE-C302	2	2		4	3