

Course Plan for Bachelor program - Course Plan Development and Updating Procedures/ Alternative Energy Technology Department	QF09/0407-3.0E
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<b>Course Plan for Alternative Energy Technology (Bachelor Program) No.: (2017-2018)</b>
<b>Approved by Deans Council by decision (07/72/2016-2017) dated (30/08/2017)</b>
<b>(132) Credit Hours</b>

No.	Goals and learning outcomes
<b>PEO1</b> <b>SO</b>	Develop knowledge and skills in the field of alternative engineering technology.
(a)	An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities.
(c)	An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.
(d)	An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.
(f)	An ability to identify, analyze, and solve broadly-defined engineering technology problems.
(j)	A knowledge of the impact of engineering technology solutions in a societal and global context.
<b>PEO2</b> <b>SO</b>	Attain a high level of professionalism and ethical responsibilities.
(h)	An understanding of the need for and an ability to engage in self-directed continuing professional development.
(j)	A knowledge of the impact of engineering technology solutions in a societal and global context.
(k)	A commitment to quality, timeliness, and continuous improvement
<b>PEO3</b> <b>SO</b>	Have the ability to interact with others as leaders and team members.
(e)	An ability to function effectively as a member or leader on a technical team.
(g)	An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
(i)	An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity.
<b>PEO4</b> <b>SO</b>	Ability to continue their education in alternative engineering technology or any other lifelong learning program
(g)	An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
(h)	An understanding of the need for and an ability to engage in self-directed continuing professional development.
(k)	A commitment to quality, timeliness, and continuous improvement.

Note: G= Goal, ILO= Intended Learning Outcome  
Assign 3-7 ILOs for each goal

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Student's information		Course number	Course title	Credit Hours	Theory Hours	Practical Hours	Prerequisite Co-requisite	Advertisement Plan
Registered	passed							Semester/year
<b>First: University Requirements (27) Credit Hours</b>								
<b>a. Mandatory requirement (15 credit hour)</b>								
<input type="checkbox"/>	<input type="checkbox"/>	0420101	Military Sciences	3	3	0		1/2
<input type="checkbox"/>	<input type="checkbox"/>	0420111	Arabic Language (1)	3	3	0	Remedial Arabic Language	1/1
<input type="checkbox"/>	<input type="checkbox"/>	0420121	English Language (1)	3	3	0	Remedial English Language	1/2
<input type="checkbox"/>	<input type="checkbox"/>	0420151	National Education	3	3	0		1/1
<input type="checkbox"/>	<input type="checkbox"/>	0420171	Life Skills	3	3	0		1/1
<b>b. Electives (12 credit hours, minimum 3 credits from each field)</b>								
<b>Field I. Humanitarian courses</b>								
<input type="checkbox"/>	<input type="checkbox"/>	0420103	History of Jerusalem	3	3	0		1/2
<input type="checkbox"/>	<input type="checkbox"/>	0420112	Islamic Culture	3	3	0		2/2
<input type="checkbox"/>	<input type="checkbox"/>	0420131	Principles of Education	3	3	0		1/2
<input type="checkbox"/>	<input type="checkbox"/>	0420134	Sport and Health	3	2	2		2/2
<input type="checkbox"/>	<input type="checkbox"/>	0420142	Human Civilization	3	3	0		1/2
<input type="checkbox"/>	<input type="checkbox"/>	0420152	Introduction to Sociology	3	3			2/2
<input type="checkbox"/>	<input type="checkbox"/>	0501100	Innovation and Entrepreneurship in Business	3	3	0		2/2
<input type="checkbox"/>	<input type="checkbox"/>	0601102	Law in Our Life	3	3	0		1/2
<b>Field II. Scientific course</b>								
<input type="checkbox"/>	<input type="checkbox"/>	0120111	Information Technology and Society	3	3	0	Remedial Computer Skills	1/2
<input type="checkbox"/>	<input type="checkbox"/>	0120153	Medicinal Plants	3	3	0		1/2
<input type="checkbox"/>	<input type="checkbox"/>	0301101	First Aid	3	3	0		1/2
<input type="checkbox"/>	<input type="checkbox"/>	0301102	Fundamental of Nutrition	3	3	0		2/2
<input type="checkbox"/>	<input type="checkbox"/>	0906100	Principles of Energy Science	3	3	0		2/2

Course Plan for Bachelor program - Course Plan Development and Updating Procedures/ Alternative Energy Technology Department	QF09/0407-3.0E
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Second: Faculty Requirements (21) credit hours								
Student's information		Course number	Course title	Credit Hours	Theory Hours	Practical Hours	Prerequisite Co-requisite	Advertise ment Plan
Regi stere d	pa sse d							Semester/ year
<input type="checkbox"/>	<input type="checkbox"/>	0120121	Calculus I	3	3	0		1/1
<input type="checkbox"/>	<input type="checkbox"/>	0120131	General physics I	3	3	0		1/1
<input type="checkbox"/>	<input type="checkbox"/>	0120132	General physics lab I	1	0	3	(Co.) General physics	1/1
<input type="checkbox"/>	<input type="checkbox"/>	0911102	Engineering drawing	3	0	6	-	1/1
<input type="checkbox"/>	<input type="checkbox"/>	0911273	Fundamentals of materials science	3	3	0	General physics 1	1/2
<input type="checkbox"/>	<input type="checkbox"/>	0908201	Technical writing and profession ethics	2	2		English language I	2/1
<input type="checkbox"/>	<input type="checkbox"/>	0101104	Calculus 2 for engineering student	3	3	0	Calculus I	2/1
<input type="checkbox"/>	<input type="checkbox"/>	0909101	Engineering computer application	3	3	0	Remedial computer Skills	2/1
Third: Major requirements (84) credit hours								
a. Mandatory Major requirements ( 77 ) credit hours								
<input type="checkbox"/>	<input type="checkbox"/>	0906201	Workshop and occupational safety	3	1	4	-	1/2
<input type="checkbox"/>	<input type="checkbox"/>	0906210	Electrical machines and power systems	3	3	0	Principles of electrical circuits	1/2
<input type="checkbox"/>	<input type="checkbox"/>	0906213	Electrical circuit lab	1	0	3	(Co.)Principles of electrical circuits	1/2
<input type="checkbox"/>	<input type="checkbox"/>	0906220	Engineering mechanics	3	3	0	General physics I Engineering drawing	1/2
<input type="checkbox"/>	<input type="checkbox"/>	0906225	Thermodynamics	2	2	0	General physics I	1/2
<input type="checkbox"/>	<input type="checkbox"/>	0906211	Electrical machines and power systems lab	1	0	3	Electrical machines and power systems	2/2
<input type="checkbox"/>	<input type="checkbox"/>	0906223	Fluid mechanics	2	2	0	General physics I	2/2
<input type="checkbox"/>	<input type="checkbox"/>	0906314	Instrumentations and measurements	3	3	0	Principles of electrical circuits-fluid mechanics	2/2
<input type="checkbox"/>	<input type="checkbox"/>	0906323	Strength of materials	3	3	0	Engineering mechanics	2/2
<input type="checkbox"/>	<input type="checkbox"/>	0906325	Heat transfer	2	2	0	Thermodynamics	2/2
<input type="checkbox"/>	<input type="checkbox"/>	0906230	Conventional energy resources	3	3	0	General physics I	1/3
<input type="checkbox"/>	<input type="checkbox"/>	0906316	Electronics circuits	3	3	0	Principles of Electrical Circuits	1/3
<input type="checkbox"/>	<input type="checkbox"/>	0906335	Combustion processes	3	3	0	Thermodynamics	1/3
<input type="checkbox"/>	<input type="checkbox"/>	0906344	Solar thermal energy workshop	3	0	6	Heat transfer	1/3
<input type="checkbox"/>	<input type="checkbox"/>	0906345	Solar electric energy workshop	3	0	6	Alternative energy (1)	1/3
<input type="checkbox"/>	<input type="checkbox"/>	0906302	Simulation and modeling lab	3	0	6	(Alternative energy (1)	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906317	Electronics circuits lab	1	0	3	Electronics circuits	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906336	Energy conversion	3	3	0	Thermodynamics	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906334	Combustion lab	1	0	3	(Co.)Combustion processes	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906346	Alternative energy (1)	3	3	0	Principles of electrical circuits	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906434	Energy Economics and Management	2	2	0	Alternative energy (1)	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906448	Alternative energy (2)	3	3	0	Alternative energy (1)	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906449	Bioenergy and waste management	2	2	0	Conventional energy Resources	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906454	Wind energy workshop	3	0	6	Instrumentations and measurements	2/3
<input type="checkbox"/>	<input type="checkbox"/>	0906301	Industrial training	6	0	12	Passing 90 credit	

Course Plan for Bachelor program - Course Plan Development and Updating Procedures/ Alternative Energy Technology Department	QF09/0407-3.0E
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<input type="checkbox"/>	<input type="checkbox"/>	0906404	Energy efficiency workshop	3	0	6	Energy conversion Energy Economics and Management	1/4
<input type="checkbox"/>	<input type="checkbox"/>	0906433	Environmental pollution	2	2	0	Combustion processes	1/4
<input type="checkbox"/>	<input type="checkbox"/>	0906455	Hybrid systems Workshops	2	0	4	Solar Electric PV energy workshop	1/4
<input type="checkbox"/>	<input type="checkbox"/>	0906401	Graduation project I	1	0	2	Passing 90 credit	1/4
<input type="checkbox"/>	<input type="checkbox"/>	0906402	Graduation project II	2	0	4	Graduation project I	2/4
<input type="checkbox"/>	<input type="checkbox"/>	0906430	Power plants	2	2	0	Thermodynamics	2/4
<b>b. Major supporting requirements (7) credit hours</b>								
<input type="checkbox"/>	<input type="checkbox"/>	0905111	Principles of electrical circuits	3	3	0	General physics I	1/1
<input type="checkbox"/>	<input type="checkbox"/>	0911214	Strength of materials lab	1	0	3	(Co.)Strength of material	2/2
<input type="checkbox"/>	<input type="checkbox"/>	0911323	Thermodynamics lab	1	0	3	(Co.) thermodynamics	2/2
<input type="checkbox"/>	<input type="checkbox"/>	0911325	Fluids Mechanics lab	1	0	3	(Co.) Fluids mechanics	2/2
<input type="checkbox"/>	<input type="checkbox"/>	0911452	Engineering measurements lab	1	0	3	(Co.) Engineering measurements	2/2
<b>c. Major electives (-- ) credit hours</b>								
<input type="checkbox"/>	<input type="checkbox"/>							
<input type="checkbox"/>	<input type="checkbox"/>							
<input type="checkbox"/>	<input type="checkbox"/>							
<input type="checkbox"/>	<input type="checkbox"/>							
<input type="checkbox"/>	<input type="checkbox"/>							

**Fourth: free electives (- ) Credit Hours**

(Student may choose any course from any course plan at the university unless the student had passed it previously)

❖ Co-requisite

**Courses Given to Other Majors)**

Course number	Course title	Credit hours	Type of requirement (University Requirements, Faculty Requirements, Supporting Requirements)
0906100	Principles of energy sciences	3	University elective requirement