

مختصر توصيف المقرر

(Course Information)

معلومات المقرر *

اسم المقرر:	الطاقة المتجددة
رقم المقرر:	فيز 4752
اسم ورقم المتطلب السابق:	فيز 3712
اسم ورقم المتطلب المرافق:	--
مستوى المقرر:	السابع
الساعات المعتمدة:	3 (0+0+3)
Module Title:	Renewable Energy
Module ID:	PHYS 4752
Prerequisite (Co-requisite) :	PHYS 3712
Co-requisite :	--
Course Level:	Seventh
Credit Hours:	3 (3+0+0)

Module Description

وصف المقرر :

Energy Fundamentals, Fossil fuels, Renewable energy part 1: Solar radiation and solar energy (thermal, photovoltaic and electrochemical), Renewable energy Part II: Alternatives (hydropower, wind power, ocean thermal energy conversion, biomass, geothermal energy, tidal and wave energy), Energy conservation & storage, energy and transportation, air pollution and environment

Module Aims

أهداف المقرر :

<p>Main objective of this course is to provide a base to students for his future research and study planning. After successful completion of this course student will be able to understand:</p> <ol style="list-style-type: none"> 1. Energy Fundamentals 2. Fossil fuels and its limitations 3. Solar radiation and solar energy including thermal, photovoltaic and electrochemical energy that cover first part i.e. more conventional renewable energy sources. 4. In 2nd part of course some alternative renewable energy sources including hydropower, wind power, ocean thermal energy conversion, biomass, geothermal energy, tidal and wave energy 5. Some other relevant topics Energy conservation & storage, transportation, air pollution and effects on environment

Learning Outcomes:

مخرجات التعليم:

1. Understand Energy Fundamentals	1.
2. Know use of fossil fuels for energy production and its limitations	

3.	Solar radiation and solar energy including thermal, photovoltaic and electrochemical energy that cover first part i.e. more conventional renewable energy sources.
4.	In 2 nd part of course student should be able to distinguish some alternative renewable energy sources including hydropower, wind power, ocean thermal energy conversion, biomass, geothermal energy, tidal and wave energy.
5.	Understand downstream problems e.g. energy conservation & storage, transportation, air pollution and effects on environment.

Course Contents:

محتوى المقرر:

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
3	1	Energy Fundamentals
9	3	Renewable energy part 1: Solar Radiation and Solar Energy
9	3	Fossil fuels(Thermal, Photovoltaic and Electro-chemicals)
6	2	Renewable energy Part II: Alternatives (Hydropower, Wind Power, Ocean thermal Energy Conversion)
6	2	Renewable energy Part II: Alternatives (Biomass, Geothermal energy, Tidal and Wave Energy)
3	1	Energy Conservation & Storage
3	1	Energy and Transportation
3	1	Air Pollution and Environment

Textbook and References:

المقرر والمراجع المساندة:

سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
(2012); 3 rd Edition ISBN-10: 0199545332	Oxford University Press, USA	Godfrey Boyle	Renewable Energy: Power for a Sustainable Future
سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم المرجع Reference
(2012); 3rd Edition ISBN-10: 0123972191	Academic Press	Aldo V. da Rosa	Fundamentals of Renewable Energy Processes
(2005) ISBN: 0471739898	Wiley	R. A. Ristin and J. P. Kraushaar	Energy and Environment
(2003) ISBN: 1860943225	World Scientific Publishing Company	William Shepherd, David W. Shepherd, D. W. Shepherd	Energy Studies