

ME 524 – Renewable Energy Resources

Hour: Lecture: 2 Hrs.

Tutorial: 2 Hrs.

Credit: 3.

Coordinator: Sameh shabaan

Text Book:

- John Twidell & Tony Weir, “Renewable Energy Resources”, E. F.N.Spon-USA, 1986.

Reference Books:

- Robert L. Loftness , “Energy Handbook”, Van Nostrand Reinhold,1978.

Specific course information

- a. This Course concentration on the theoretical and practical aspects of solar, wind, tidal and wave sources of energy. Design feasibility studies are undertaken on particular aspects of energy conversion from these resources. The impact of the environment of consumption of conventional energy forms is investigated .The nature and magnetite of energy consumption World-Wide and locally is considered
- b. Prerequisite: 126 credit hours
- c. Designation: Selected Elective

Specific goals for the course:

- Identify, formulate, and solve engineering problems. Make appropriate and necessary assumptions. Suggest and evaluate new approaches.
- Use oral, written, and audio-visual techniques effectively for successful communication.

Course instruction outcomes:

- The students will be able to develop ability to assess the current energy situation, need for renewable energy sources & to understand and their current status of development.

Topics Covered:

- The Current Energy Sources
- Environmental Impact of Energy Production
- Need for Renewable Sources
- Solar Energy: Photovoltaic Cells
- Solar Energy: Thermal Energy Production
- Wind Energy
- Hydropower
- Wave & Tidal Energy
- Ocean Thermal Energy Conversion
- Geothermal Energy

- Breeder Nuclear Reactors
- Fusion Energy
- Environmental Impact of Renewable Energy Production

Course / credit hours	Math & Basic Sciences	Engineering Topics	General Education
Renewable Energy Resources (ME524)/3		3	