

ME 494: Foundation of Energy Efficiency

Special Selected Topic

Term:

2015 second semester, time: Sun/Tues/Thu:
10-11 am (TBC).

Professors:

Dr. Abdullah Alabdulkarem (CEM)
Dr. Hany Al-Ansary
Dr. Zakariya Kaneesamkandi
Guest speakers from the Saudi Energy Efficiency Center and relevant energy industry players in the Kingdom.

Credit hours:

3 credit hours

Overview:

Energy availability and security is one of the hottest subjects being discussed globally. The Kingdom is a global energy supply leader but the local consumption is growing at high rates, creating a growing market for energy and energy efficiency and therefore a need for a skilled engineering workforce.



Course Outline:

Foundation of Energy Efficiency is a multi-disciplinary course that introduces energy consumption reduction measures in the buildings, transportation and industrial sectors (demand side management).



The main objective of this course is to provide engineers and architect students with the basic principles of energy, fundamentals concepts of energy efficiency and an overview of energy policy and economics.

This course provides an opportunity to gain a broader understanding of the latest energy cost reduction techniques and strategies.

Prerequisites:

- ME students: none (preferably for students in the senior year)
- Non-ME students: this is a foundation course, check with your department for elective credit approval .



COURSE Contents

Syllabus is available at: fac.ksu.edu.sa/aalabdulkarem

Areas covered include:

Fundamentals of energy
Energy Efficiency overview
Transportation/behavioral energy efficiency

Building energy efficiency
Industrial energy efficiency
Economics of energy efficiency

Urban planning and district cooling
Energy auditing
Energy policy and global programs