

GUJARAT TECHNOLOGICAL UNIVERSITY

M.E Semester: 2

Mechanical Engineering (I.C.Engine & Automobile)

Subject Name Energy Conservation and Management

Sr.No	Course content
1.	Energy scenario, Principles of energy Conservation, Energy consumption pattern, Resource availability.
2.	Evaluation of thermal performance, calculation of heat loss – heat gain, estimation of annual heating & cooling load factors that influence thermal performance, analysis of existing buildings.
3.	Organizing for energy conservation programme, the energy audit and energy information system, technology for energy conservation, co-generation of process, steam & electricity, computer controlled energy management, commercial options in waste heat recovery equipment, cases of energy studies, energy conservation opportunity, Energy conservation in I. C. Engine.
4.	Strategies for electricity and management, setting up an energy management programme, electricity saving technique by category of end use, Electrical end use in industries, energy & power management in industry, energy management strategies for industry, demand management.
5.	Importance and role of energy management, Energy economics, Payback period, Internal rate of return, life cycle costing.

Reference Books:

1. C.B.Smith, Energy Management Principles, Pergamon Press, New York, 1981.
2. W.C. Turner, Energy Management, Hand Book.
3. Hamies, Energy Auditing and Conservation, Methods, Measurements, Management and Case Study, Hemisphere, Washington, 1980.
4. Kreith, Economics of Solar Energy and Conservation Systems, Vol -3.
5. W.F.Kenny, Energy Conservation in Process Industry.
6. Trivedi, P.R, Jolka K.R., Energy Management, Commonwealth Publication, New Delhi,1997.
7. Witte, Larry C, Industrial Energy Management and Utilization, Hemisphere Publishers, Washinton, 1988.