ME530 - REFRIGERATION AND AIR CONDITIONING SYSTEMS

UNIT – I

Refrigeration Cycles : Evolving Vapor Compression Cycle from Basic Carnot Cycle - Analysis. Multi pressure Systems, Cascade Systems. Air Refrigeration Cycles.

UNIT – II

System Components & Accessories : Types of Evaporators, Compressors, Condensers, Expansion Devices, Driers/ Filters, Receiver, Accumulator. Functional Aspects of the above components & accessories.

System Balancing & Controls : Estimation of Cooling Load, system Equilibrium and Cycling Controls, Capacity Control in Compressors.

UNIT - III

Refrigerants : Classification of Refrigerants, Refrigerant Properties, Oil Compatibility, Blends, Eco Friendly Refrigerants.

UNIT - IV

Unconventional Refrigeration Cycles : Vapor Absorption Systems - Aqua Ammonia & Li-Br Systems, Steam Jet Refrigeration, Thermo Electric Refrigeration.

UNIT - V

Design of Air Conditioning Systems : All fresh air, Re-circulated air with and without bypass- factor - ADP, RSHF, GSHF& ESHF for different systems

Heat Pump: Different Heat Pump circuits-Analysis of Heat pump cycle- Applications.

TEXT BOOKS:

Dossat R.J., Principles of refrigeration, John Wiley, 1984

REFERENCES :

1. W.F. Stoecker, Refrigeration and Air conditioning, McGraw Hill Book Company, 1985.
2. Jordan and Priester, Refrigeration and Air conditioning, 1985.
3. Goshnay W.B., Principles and Refrigeration, Cambridge, University Press, 1982.
4. Langley, Billy C., 'Solid state electronic controls for HVACR' pentice-Hall 1989.