AMAC-17 AIR CONDITIONING SYSTEMS DESIGN

UNIT-1 TYPES OF AIR CONDITIONING SYSTEMS AND PSYCHROMETRICS

1.1 Moist Air properties,
1.2 Use of Psychrometric Chart,
1.3 Various Psychrometric processes,
1.4 Air Washer, Adiabatic Saturation.
1.5 Summer and winter Air conditioning,
1.6 Types of air conditioning systems.

UNIT-2 LOAD ESTIMATION

2.1 Solar Radiation-Heat Gain through Glasses,
2.2 Heat Transfer through Walls and Roof
2.3 Total Cooling Load Estimation.

UNIT-3 AIR DISTRIBUTION

3.1 Flow through Ducts, Static & Dynamic Losses, Diffusers ,
3.2 Duct Design- Equal Friction Method, Duct Balancing,
3.3 Fans & Duct System Characteristics,
3.4 Fan Arrangement Variable Air Volume systems,
3.5 Air Handling Units and Fan Coil units.

UNIT-4 AIR CONDITIONING CONTROL

4.1 Controls of Temperature,
4.2 Humidity and Air flow.

UNIT-5 HVAC SYSTEM IN AUTOMOBILES

5.1 Automotive System layout and Components
5.2 Commonly used Refrigerants- Safety devices
5.3 Climate control- Fuel efficiency aspects

References Books:

1. Arora C.P., Refrigeration and Air Conditioning, Tata McGraw Hill Pub. Company, New Delhi - 2000. 9
2. ALI VEDAVARZ, SUNIL KUMAR, Mohammed Iqbal, Hussain Handbook of Heating, Ventilation and Air conditioning for Design Implementation, Industrial press Inc,2007.
3. ASHRAE , Fundamentals and equipment , 4 volumes-ASHRAE Inc. 2005
4. Jones, Air Conditioning Engineering , Edward Amold pub. 2001