

## **ME605 Air Conditioning and Ventilation**

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Credit: 3-0-0-3

Prerequisites: Thermodynamics, heat transfer

Students intended for: MS/PhD

Elective or Compulsory: Elective

Semester: Odd/Even

### **Course content:**

- **Fundamentals:** Air properties, psychrometry, basic processes, and summer and winter air-conditioning.
- **Comfort:** Concept of human comfort and thermal response, comfort factors and environmental indices, Indoor Air Quality.
- **Equipment analysis and selection:** Filter, fan, air-washer, cooling tower and cooling and dehumidifying coil.
- **Load estimation:** Heat and mass transfer in wall, insulation, vapour barrier, and cooling and heating load calculations.
- **Air distribution:** Air flow in duct, duct sizing and space air diffusion.
- **Ventilation:** Methods, applications in industries, exhaust systems and design.

### **Text & Reference Books:**

A SHRAE Handbook

C.P. Arora, Refrigeration and Airconditioning, 3<sup>rd</sup> Edition, Tata McGraw-Hill 2009

R.C. Arora, Refrigeration and Airconditioning, 1<sup>st</sup> edition, Prentice Hall India, 2010.

W. P. Jones, Air conditioning engineering, 5<sup>th</sup> edition, Elsevier, 2001.