



## Principles of Air Conditioning

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Prof. Dr. G. Venkatarathnam

Indian Institute of Technology Madras (IIT Madras)

DAAD - Gastdozent am Institut für Technische Thermodynamik und Kältetechnik (ITTK)

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### Inhalte / Contents:

1. Fundamentals of air conditioning - Air properties, psychrometry, basic processes, summer and winter air conditioning.
2. Comfort - Concept of human comfort and thermal response, comfort factors and environmental indices
3. Indoor air quality – importance, Indoor environment and health, Air contaminants, Odours, measurement, air flow around buildings
4. Heating and cooling load estimation - Heat transfer from walls, insulation, vapour barrier – solar loads - cooling – ventilation loads – sample load calculations.
5. Residential and non residential cooling and heating load calculations – effect of unheated/cooled adjacent spaces
6. Air conditioning systems – single and multi zone systems, terminal reheat systems, variable air volume systems, water systems
7. Unitary air conditioning equipment – room air conditioners, packaged air conditioners
8. Air distribution - Air flow in duct, duct sizing and space air diffusion.
9. Ventilation - methods, applications in industries, exhaust systems and design.
10. HVAC applications – Residences, retail facilities, educational and health care facilities, air crafts, ships

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