COURSE OUTLINE:
This course provides a simple understanding of Refrigeration and Air-conditioning fundamentals. Ideally suited to those with a little or no knowledge of the subject. The course consists of different refrigeration cycles and understanding of psychrometry and psychrometric processes used for the purpose of air-conditioning. Further, the comfort air-conditioning and indoor environment health are also addressed in this course.

ABOUT INSTRUCTOR:
Dr. Ravi Kumar is a Professor in the Department of Mechanical & Industrial Engineering, Indian Institute of Technology Roorkee. He has taught Refrigeration & Air-conditioning to UG and PG students of the Department. He is a member of ASHRAE, IIFIIR and ASME. He has supervised number of masters and doctoral students in this area.

COURSE PLAN:

Week 01: Recapitulation of Thermodynamics, Introduction to Refrigeration, Air Refrigeration Cycle, Aircraft Refrigeration Cycles.
Week 02: Aircraft Refrigeration Cycles, Vapour Compression Cycle, P-h Charts, Actual Vapour Compression Cycle.
Week 03: Actual Vapour Compression Cycle, Compound Compression with Intercooling, Multiple Evaporator and Cascade System, Problem Solving.
Week 04: Refrigerants, Vapour Absorption Systems.
Week 05: Introduction to Air-conditioning, Properties of Moist Air, Psychrometric Chart, Psychrometric Processes.
Week 06: Psychrometric Processes, Infiltration Design Conditions, Cooling Load.
Week 07: Cooling Load, Air Distribution System, Problem Solving, Air-Conditioning Systems.
Week 08: Human Physiology, Thermal Comfort, Indoor Environmental Health, Problem Solving.