Heat transfer

Chemical Engineering

Instructor Name: Prof.Ganesh Viswanathan
Institute: IIT Bombay
Department: Chemical Engineering

About Instructor: Ganesh Viswanathan is an Associate Professor in Department of Chemical Engineering at Indian Institute of Technology Bombay, Mumbai. He obtained his Ph.D in Chemical Engineering from University of Houston and Postdoctoral training at Mount Sinai School of Medicine.

Pre Requisites: : Linear Algebra, Fluid mechanics
Core/Elective: : Core
UG/PG: : UG
Industry Support : Reliance, HPCL, BPCL, RCF, other chemical and petrochemical companies

Course Intro: : Heat transfer occurs in many unit operations in variety of processes in chemical, petrochemical and pharmaceutical industries. Understanding the fundamentals governing heat transfer is key to designing equipment that involves heat exchange. This course for undergraduate students covers the fundamental aspects and quantitation of different modes of heat transport. The course can also serve as a refresher for graduate students.

COURSE PLAN

SL.NO	Week	Module Name
1	1	Introduction
2	1	
3	1	
4	1	
5	1	
6	2	Resistances in radial systems
7	3	Extended surfaces: Part 4 â€“ Varying cross-sectional area
8	4	Introduction to convective heat transfer
9	5	Order of magnitude analyses
10	6	Flow past flat plate: Part 1 â€“ Similarity solution
11	7	Flow through pipes: Part 3
12	8	Introduction to FreeNatural convection
13	9	Condensation: Part 1
14	10	Properties of a Blackbody
15	11	Inside sphere method, Blackbody radiation exchange
16	12	Introduction to Heat exchangers