1.	Title of the course	Process Heat Transfer
2.	Course number	CH213L
3.	Structure of credits (L-T-P-C)	2-1-0-3
4.	New course/modification to	Modified with CH205L/PROCESS HEAT TRANSFER
5.	To be offered by	Chemical Engineering
6.	Prerequisite	None
7.	**Course Objective(s):** To introduce the principles of conduction, convection and radiation heat transfer. To apply these fundamentals in the design of heat transfer equipment.	
8.	**Course Content:** Heat transfer by conduction: Fourier's law, steady and unsteady conduction, thermal losses and insulation, extended surfaces; Heat transfer by convection: natural and forced convection, thermal boundary layer, heat transfer coefficient and correlations for Nusselt number; Heat transfer with phase change: boiling, condensation; Heat transfer by radiation: emissivity, absorptivity, view factor; Design of double pipe, shell and tube heat exchangers; Design of single and multiple effect evaporators.	
9.	**Textbook(s):** 1. Cengel Y A and Ghajar A J, Heat and Mass Transfer, 6th Edition, Tata McGraw Hill (2020). 2. Holman J P and Bhattacharyya S, Heat Transfer, 10th Edition, Tata McGraw Hill (2017).	
10.	**Reference(s):** 1. Incropera F P, Dewitt D P, Bergman T L and Lavine A S, Principles of Heat and Mass Transfer, 7th Edition, Wiley India (2013). 2. Kern D Q, Process Heat Transfer, First Edition, Tata McGraw Hill (2004). 3. Welty J, Wicks C E, Wilson R E and Rorrer G L, Fundamentals of Momentum, Heat and Mass Transfer, 5th Edition, Wiley India (2010). 4. Dutta B K, Heat Transfer: Principles and Applications, 2nd Edition, PHI Learning Pvt Ltd (2023).	