

1.	Title of the course	Process Heat Transfer
2.	Course number	CH205L
3.	Structure of credits	2-1-0-3
4.	Offered to	UG
5.	New course/modification to	Modification To CH2204/12
6.	To be offered by	Department of Chemical Engineering
7.	To take effect from	January 2022
8.	Prerequisite	Nil
9.	Course Objective(s): To provide the principles of conduction, convection and radiation heat transfer for chemical engineering processes. To apply the fundamentals to design heat exchangers.	
10.	Course Content: Heat transfer by conduction: Fourier's law, steady and unsteady state conditions; Thermal losses and insulation; Efficiency of fins; Heat transfer by convection: natural and forced convection, thermal boundary layer, heat transfer coefficient and correlations for Nusselt number; Heat transfer to fluids 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.	
11.	Textbook(s): 1. Cengel Y A and Ghajar A J, <i>Heat and Mass Transfer</i> , 5th Edition, Tata McGraw Hill (2015). 2. Holman J P and Bhattacharyya S, <i>Heat Transfer</i> , 10th Edition, Tata McGraw Hill (2017).	
12.	Reference(s): 1. Incropera F P, Dewitt D P, Bergman T L and Lavine A S, <i>Principles of Heat and Mass Transfer</i> , 7th Edition, Wiley India (2013). 2. Kern D Q, <i>Process Heat Transfer</i> , 1st Edition, Tata McGraw Hill (2004). 3. Welty J, Wicks C E, Wilson R E and Rorrer G L, <i>Fundamentals of Momentum, Heat and Mass Transfer</i> , 5th Edition, Wiley India (2010).	