

1.	Title of the course	Separation and Purification Processes
2.	Course number	CH3204
3.	Status of the course	Core
4.	Structure of credits	2-1-3-5
5.	Offered to	UG
6.	New course/modification to	New course
7.	To be offered by	Department of Chemical Engineering
8.	To take effect from	July 2020
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective(s): To identify appropriate processes for separation of a given mixture. To apply the principles of mass transfer and design equipment to achieve the desired separation.	
12.	Course Content: Introduction to separation and purification processes; Equilibrium stage-wise and rate-based approaches; Distillation: vapor-liquid equilibria, flash distillation, batch distillation, steam distillation, multistage tray and packed towers; Introduction to multicomponent distillation; Absorption and stripping; Liquid-liquid extraction; Leaching; Humidification; Drying; Adsorption; Introduction to membrane separations. Laboratory: Vapor-gas diffusivity; Drying; Distillation; Absorption; Liquid-liquid extraction; Leaching; Reverse osmosis; Adsorption.	
13.	Textbook(s): 1. McCabe W L, Smith J C and Harriot P, <i>Unit Operations of Chemical Engineering</i> , 7th Edition, Tata McGraw Hill (2014). 2. Treybal R E, <i>Mass Transfer Operations</i> , 3rd Edition, Tata McGraw Hill (2012).	
14.	Reference(s): 1. Dutta B K, <i>Principles of Mass Transfer and Separation Processes</i> , 2nd Edition, Prentice Hall India (2007). 2. Seader J D and Henley E J, <i>Separation Process Principles with Application using Process Simulators</i> , 4th Edition, John Wiley & Sons (2016).	