

1.	Title of the course	Material and Energy Balances
2.	Course number	CH201L
3.	Structure of credits	2-1-0-3
4.	Offered to	UG
5.	New course/modification to	Modification To CH2101/12
6.	To be offered by	Department of Chemical Engineering
7.	To take effect from	July 2022
8.	Prerequisite	Nil
9.	<b>Course Objective(s):</b> To introduce process calculations and principles of conservation of mass and energy.	
10.	<b>Course Content:</b> Units and dimensions; Material balances for processes with and without chemical reactions; Degree of freedom analysis; Recycle, bypass and purge calculations; Ideal gas behaviour, vapour pressure, Cox chart, Duhring plot; Humidity and saturation; Energy balances for processes with and without chemical reactions; Combustion; Heats of solution and mixing; Use of spreadsheet software.	
11.	<b>Textbook(s):</b> 1. Felder R M and Rousseau R W, <i>Elementary Principles of Chemical Processes</i> , 3rd Edition, Wiley India (2008). 2. Himmelblau D M, <i>Basic Principles and Calculations in Chemical Engineering</i> , 8th Edition, Prentice Hall India (2014).	
12.	<b>Reference(s):</b> 1. Bhatt B I and Thakore S B, <i>Stoichiometry</i> , 5th Edition, Tata McGraw Hill (2010). 2. Reklaitis G V, <i>Introduction to Material and Energy Balances</i> , John Wiley (1984).	