

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

PROCESS CALCULATIONS

SEMESTER -IV

TEACHING SCHEME

L=3; P/D=0; TA=2

EXAMINATION SCHEME

Theory = 3hours; Marks= 100

Tutorial = 50

1. Mathematical techniques in Chemical Engg. 'Dimensions & Units'.
2. Basic Chemical calculations involving solids, liquids, solutions & gases. Gas laws & phase equilibria.
3. Material Balance with and without chemical reactions.
4. Material Balance involving recycle, bypass and purge systems.
5. Humidity, Saturation, Crystallization and Combustion calculations.
6. Thermophysics & heat capacity calculations.
7. Enthalpy changes of reactions, dissolution & laws of thermochemistry.
8. Heat of reaction, effect of temperature & pressure on heat of reaction.
9. Combined material and energy balance for single stage processes like Distillation, Absorption & Stripping, Crystallization.
10. Material & Energy balance calculations for industrial processes.

REFERENCE:

1. B. I. Bhatt & S. M. Vora , 'Stoichiometry'.
2. O. A. Hougen, K. M. Watson, R. A. Ragatz , 'Chemical Process Principles', part I.
3. D. M. Himmelblau , 'Basic Calculations In Chemical Engg.'
4. Richardson & Coulson , 'Chemical Engineering', Volume VI.