7th Semester	RML7D006	Computational Techniques in Mineral Engineering	L-T-P	3-0-0	3 Credits	

Module-I: (10 hours)

Application of mass balance techniques for various unit operations in mineral Engineering. Optimization of yield, recovery and grade of the product streams.

Module-II: (8 hours)

Minimization of errors involved in size assay analysis. Computation of efficiencies of various separation processes in mineral processing operations.

Module-III: (8 hours)
Calculations related to material balancing of simple and complex circuits. Estimation of grade and recovery values for two/three product separation systems.

Module-IV: (10 hours)
Computation of recovery and grade of the products through kinetic behaviour of the individual species for batch and continuous flotation operations. Use of RTD theorems: their applications and limitations.

Books:
[1] Mineral Processing Technology by B.A. Wills and Tim Napier-Munn

[2] Mineral Processing Design and Operation by A.Gupta and D.S.Yan -Elsevier 2006

[3] Ore Dressing by R.H.Richards (4 volumes) – Engineering & Mining Journal 1909