LAND RESOURCE MANAGEMENT

Module I

Land use Planning – Objective and importance; Land use and capability classification systems; Land use Planning models and their limitations.

Impacts of natural and man-made activities on land characteristics and land use planning; Impact of soil erosion and sedimentation control.

Design of tailings dams, overburden dump and ash pond. Land reclamation principles and requirement; Topsoil management – inventory, removal, preservation and redistribution; Ecological restoration technology – objectives and guidelines;

Module II

Technical reclamation – stability, drainage and erosion control; estimation of sediment load and design of sedimentation pond; Factors effecting the development of vegetation cover in mine degraded areas; Selection of tree species for restoration purposes; importance of grass-legume mixture;

Module III

Application of mulches, geotextiles and Soil amendments; Monitoring and aftercare of restored sites; Evaluation of restoration success and indicator parameters; Post project land use monitoring. Ecological restoration and its components.

Module IV

Forestry and biodiversity issues; Planning for biodiversity conservation on reclaimed lands. Mine closure planning – environmental impacts of mine closure, development of closure plan, closure guidelines, mine closure activity, closure cost.

Books & References:

1. Ecorestoration of the coalmine degraded lands- Subodh Kumar Maiti, Springer (2013)
2. Analysis of Land Use Change: Theoretical and Modeling Approaches, Helen Briassoulis, University
1. of the Aegean Lesvos , Greece, E-Book
2. Environmental Land use planning and Management, John Randolph, Island Press,
3. Land Use in Mining Areas of India, Rekha Ghosh, Envis, ISM Dhanbad, ISSN 0972-4656