| 5th Semester | REV5C003 | Land Resource Management | L-T-P 3-0-0 | 3 Credits |
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**Module I:** **(8 Hours)**

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;

**Module II:** **(8 Hours)**

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 III:** **(8 Hours)**

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 IV:** **(8 Hours)**

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 V:** **(8 Hours)**

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 :**

[1] Eco restoration of the coalmine degraded lands-Subodh Kumar Maiti, Springer (2013)
[2] Analysis of Land Use Change: Theoretical and Modelling Approaches, Helen Briassoulis, University1.of the Aegean Lesvos , Greece, E-Book2.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