5th Semester	RMN5D004	Environmental Management	L-T-P 3-0-0	3 Credits

Module-I: **(8 Hours)**

Introduction: Sustainable development, environmental carrying capacity - concepts & principles; Environmental impacts of mining and associated activities. Ecology: Introduction to ecology, ecosystem structures and functions.

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

Air pollution: Atmospheric composition and meteorology; Sources of air pollution – point and non-point; Emission factors; Control measures – extraction, suppression and consolidation of dust.

Module-III: **(16 Hours)**

Noise and vibration: Basic concepts, sources, monitoring and control measures. Water pollution: Global hydrological cycle; Self-purification mechanism, sources of water pollution, important parameters–pH, turbidity, oil & grease, nitrates, DO, BOD, COD; Eutrophication, deoxygenation, acid mine drainage and heavy metal pollution– preventive and control measures.

Module-IV: **(8 Hours)**

Land environment: Land degradation due to mining; Physical and biological reclamation. Environmental administration: Laws related to mining environment; EIA of mining projects.

Module-V: **(8 Hours)**

Land Acquisition & Revenue: Concepts: Related laws and regulations. Corporate Social Responsibility: Concepts and principles. Mine closure: Concepts and principles.

Books:

1. Environmental Engineering, G. Kiely, Irwin/ McGraw Hill International Edition, 1997
2. Environmental Engineering, Arcadio P. Sincero & Gergoria A. Sincero, PHI Publication
3. Mining Environment Management Manual, N. C Saxena, , Scientific Publishers (India), 2004

Digital Learning Resources:

Course Name: Fundamentals of Environmental Pollution and Control

Course Link: https://nptel.ac.in/courses/123/105/123105001/

Course Instructor: Dr. J. Bhattacharya, IIT Kharagpur