

5th Semester	RMN5D001	Mining Machinery	L-T-P 3-0-0	3 Credits
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Module-I: (10 Hours)

Prime mover for mining machinery, I.C. Engine, Hydraulic power Pneumatic power, Element of mechanical power transmission gears, coupling, clutch and brake.

Module-II: (16 Hours)

Wire rope and winding system, Mine hoist: Different types of winders, their constructional features, kinematics, torque and power calculation, speed control, safety devices, cage, skip head gear structure, cage guide, shaft fittings, Man riding system in mines.

Module-III: (12 Hour)

Belt conveyors, rope haulage, chain conveyor and locomotive their constructional features, power calculation and safety appliances. Mine pump and drainage.

Module-IV: (6 Hours)

Rock Drivage Machines: Roadheaders. Tunnel Boring Machines. Raise climbers. Raise and shaft boring machines, Rock bolting machines.

Module-V: (6 Hours)

Machinery Maintenance: Planned, preventive and predictive maintenance. Routine and remote condition monitoring. Effect on availability and utilisation of equipment.

Books:

- [1] Elements of Mining Technology, Volume-3, D. J. Deshmukh, , Denett & Company, 2016
- [2] Mine Transport, N. T. Karlein, , Orient Longman, 1st Edition, 1967
- [3] Material Handling Equipment, M. P. Alexandrov, , MIR, 1st ed, 1981.