

Name of Programme: M. Sc. Applied Geology

Course Code: GEO-614

Title of the Course: Coal Geology

No of Credits: 02

Effective from AY: 2023-24

Prerequisites for the course	Students should have undergone M.Sc. Semester III.	
Objective:	To impart the knowledge about types of coal, its occurrence, structure and depositional environment.	
Content:	Module 1 Coal as rock, types of coal, mode of occurrence, structure in coal seams, coals through ages-physical and chemical characteristics of coal, macropetrographics and microlithotypes; Genetics and exploration: Origin-classification of coal-Indian coal grading and exploration of coal, Modern techniques-drilling and logging, assessment of coal reserves and calculation of coal reserves. Preparation and utilization: Coal preparation, cleaning, sizing washing supporting operations.	15 hours
	Module 2 Beneficiation of coal, coal utilization, combustion, carbonization, gasification and hydrogenation. Resources and Environments: Resources: Production and consumption pattern. Energy policy: conservation, environment pollution and environmental hazards. World coal resources, principal Indian Coal Fields: Occurrences, geology and geographical distribution. Coal mining hazards.	15 hours
Pedagogy:	Lectures, case studies, discussions and assignments.	
References/ Readings	<ol style="list-style-type: none">1. Chandra, D., Singh, R. M., & Singh, M. P. (2000). <i>Text book of coal (Indian Context)</i>. Tara Book Agency, Varanasi.2. Francis, W. (1961). <i>Coal: its formation and composition</i>. E. Arnold.3. Larry, T. (2002). <i>Coal geology. A John Wiley & Sons, West Sussex</i>, 273.4. Mackowsky, M. T., Teichmuller, M., Taylor, G. H., Chandra, D., Teichmuller, R., Bwnfraeger, G., ... & Darfmoufh, N. S. (1997). <i>Stach's textbook of coal petrology</i>. Gebruder borntraeger.	
Course outcomes	<ol style="list-style-type: none">1. Students will be able to identify different types of coal and their occurrences.2. Learn the formation, geological environment and tectonic setting of coal.	