Course Type	Course Code	Name of Course	L	T	P	Credit
DP	NGLC526	Coal Geology and Petroleum Geology Practical	0	0	2	1

Course Objective

The objective of the course is about basic principles and applications of petroleum geology and coal geology

Learning Outcomes

The primary objective of the course is

- students will identify coals of different type and rank
- students will learn to identify different macerals in coal
- students will learn to estimate the coal reserve in a basin
- Students will demarcate various types of hydrocarbon traps through practical exercises
- They will also learn to interpret Rock Eval pyrolysis data
- Calculation of hydrocarbon reserves

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	**Megascopic identification:** Megascopic identification of different varieties of coal	4	Understanding of different varieties and ranks of coal
2	**Lithotypes:** Identification of lithotypes, lithotype logging and cleat attributes	4	This unit will help student in identification of various lithotypes, logging and cleats
3	**Identification of macerals**: Identification of macerals and minerals under transmitted light; Identification of macerals and minerals under reflected light; Reflectance measurements and rank determination of coal.	4	Identification of macerals under microscope
4	**Coal Reserve:** Estimation of Coal Reserve and quality	2	Estimation of coal reserve
5	Interpretation of geologic structures from surface geological maps and borehole data; reconstruction of structural developments through different time planes.	4	Identify and delineate various types of structures in order to locate suitable hydrocarbon prospective zones from maps and bore hole data.
6	Preparation of structure contour and isopach maps of reservoir facies and drawing oil/water contact from borehole data.	4	Analysis and interpretation of rock eval pyrolysis data for hydrocarbon exploration.
7	Interpretation of Rock Eval pyrolysis data for study of geochemical methods of hydrocarbon exploration	4	Understand various types of sedimentary structures in hand specimens of sketches and their geological significance.
8	Hydrocarbon Reserve Estimation	2	To learn how to estimate HC reserves
	Total Classes	28	

Recommended Books:

1. Tissot, B. P., and Walte, D. H., Petroleum Formation and Occurrence. Springer-Verlag, Germany.
2. North F. K., Petroleum Geology. Allen & Unwin Inc., London.
3. Taylor, G.H., Teichmüller, M., Davis, A., Diessel, C.F.K., Littke, R., Robert, P., 1998. Org. Petrol. Gerbrüder Borntraeger, Berlin.16, 704.
4. Applied Coal Petrology-The Role of Coal Petrology in Coal Utilization by Isabel Suárez-Ruiz and John C. Crelling (Eds) Elsevier,Academic Press (2008).

Other References:

1. Selley, R. C.,Elements of Petroleum Geology. Academic Press, USA.
2. Selly, R. C. and Sonnenberg, S. A., Elements of Petroleum Geology, Elsevier-Academic Press
3. Slatt, R. M., Stratigraphic Reservoir Characterization for Petroleum Geologists, Geophysicists, and Engineers. Elsevier, Hungary
4. Introduction to Geology of coal and Indian Coalfields by N.L.Sharma & K.S.V. Ram,1979
5. Coal Geology and Coal Technology by C.R.Ward,1984
6. Coal bearing depositional system by CFK Diessel, 1992 Edition
7. The Chemistry and technology of coal- James G. Speight, 1994