

COURSE TYPE	COURSE CODE	NAME OF THE COURSE	L	T	P	CREDIT
DP	NFMC506	Fuel Technology Lab	0	0	3	1.5

COURSE OBJECTIVE

The main aim of the course is to give practical exposure of coal and other fuel characterization techniques and their significance.

LEARNING OUTCOMES

At the end of this course students should be able to characterize fuel based on their properties and their significance during utilization.

Exp. No.	Name of Experiment	Practical Hours	Learning Outcome
1	Sampling of Coal	3	Sampling of coal for taking a representative sample from a bulk sample.
2	Proximate analysis of coal	3	Determination of ash, moisture, volatile matter and fixed carbon content in coal
3	Ultimate Analysis of coal.	3	Elemental analysis of coal
4	Free Swelling Index of coal	3	Swelling characteristics of coal
5	Caking index of coal	3	Caking and binding properties of coal
6	LTGK of coal	3	Coking properties of coal at low temperature
7	GCV of fuel	3	Heating values of fuel
8	Comparative proximate analysis of coal and coke	3	Property changes during carbonization
9	HGI of coal	3	Grindability of coal
10	Characterization of liquid fuels -I	3	Measurement of cloud point, pour point, smoke point, flash point and fire point of liquid fuels
11	Characterization of liquid fuels -II	3	
12	Flashpoint and Fire-point	3	Knowledge about the flash and fire point of liquid fuels
13	Pour point and cloud point	3	Knowledge about the Pour and cloud point of liquid fuels
14	Aniline point	3	Understanding of the aniline point of different liquid fuels
Total		42	

Text Books:

1. Fuels and Combustion: University Press (India) Pvt Limited, India, *Author:* Samir Sarkar.

Reference Books:

1. Elements of Fuels, Furnaces and Refractories: Khanna Publishers, India, *Author:* O P Gupta.
2. Fuels, Furnaces and Refractories: PHI Learning Private Limited, India, *Author:* R C Gupta.
3. An Introduction to Chemistry and Technology of Coal Utilization: Taylor and Francis group, *Author:* James P Speight.