



National University of Sciences and Technology

Course Description

Course Title	Course Code	Credit Hours
Combustion and Environment	ME-830	3 – 0

Textbook:

- Combustion and Incineration Processes, Walter R. Niessen

Reference Books:

- Combustion Engineering, Gary L Borman, Keneth W Ragland, Mc Graw-Hill.
- Environmental Engineering, Joseph A. Salvateo, Nelson L. Nemerow, Franklin J Agarady.

Course Objectives:

- To build up knowledge of the concepts and theories of classical fuel combustion.
- To develop understanding of the basic principles and concepts of advanced fuel combustion and control process
- To be familiar with the fundamental physical and chemical principles regarding formation and control of air pollutants in industrial and technological processes

Course Outline:

- Calculates energy and power and explains the principles of energy.
- Describe and Classify energy, conventional energy sources, fossil fuels
- Explains the reserves of conventional energy sources in the world especially in Pakistan
- Explains occurrence, properties and production methods of coals.
- Express the pressure, speed and energy equilibrium in a nonlinear pipeline.
- Explain the most convenient apparatus for flow and speed measurements in a fluid system. Explains coal preparation, coal technology and coal utilization.
- Washability characteristics of coals. liquification and gasification methods of coals, utilization of coals, occurrence, properties, production methods and utilization of oil. Explains the occurrence and properties of oil, production methods and utilization of oil.
- Explains the occurrence, properties, production methods and utilization of natural gas
- Explains the occurrence, properties, production methods and utilization of natural gas.
- Comprehends Quality Control and Burning Processes. Knows the Environmental Impacts of Solid and Liquid Fuels and Advances in Reduction of Adverse Effects

and Learns the

- Analysis of Solid, Liquid and Gas Fuels

ASSESSMENTS

Description	Percentage Weightage (%)
Assignments	05-10%
Quizzes	10-15%
Mid Semester Exams	30-40%
End Semester Exam	40-50%