Course Type	Course Code	Name of Course	L	T	P	Credit
DC	ESC 207	Air Pollution Control	3	0	0	9

Course Objective
The objective of the course is to understand and evaluate the behavior of air pollutants and the strategies to control their presence in the ambient atmosphere.
Learning Outcomes
Upon successful completion of this course, students will be able to: • Brief on the behaviour of air pollutants in atmosphere. • Design different types of control equipment's for the abatement. • Evaluate the engineering solutions for industrial and vehicular air pollution problems.

Unit No.	Topics to be Covered	Lecture Hours	Learning Outcome
1	General properties of flue gas and particle dynamics.	04	To learn application of mass and energy balance to the calculations involving flue gas and particle
2	Design of control device for gaseous pollutant-absorption-adsorption-incineration-condensation.	14	To design numerically a control device for gaseous pollutants depending on type of originating source.
3	Design of control device for particulate pollutant- Gravity settler- Cyclone separators- fabric filters-Electrostatic Precipitator -wet scrubber.	13	To design numerically a control device for particulate pollutant based on their size and removal efficiency.
4	Industrial Air Pollution Control: Dust control and abatement measures in mines; role of green belts. Thermal power plants: Control principle to improve overall thermal efficiency, Fuel and flue gas desulphurization, FBC, control of NO_x, control of mercury, concept of Integrated Gasification Combined Cycle (IGCC) and Carbon Capture and Storage (CCS). Control of motor vehicle emissions.	05	Develop an understanding of the concepts for Industrial Air Pollution Control for power sector and automobiles.
5	Indoor air pollution control, auxiliary equipment's design for air pollution control such as hoods, fans and ducts, calculation to estimate pressure drop due to air pollution control device and total cost estimation procedure including operating cost.	06	Get the knowledge for indoor air pollution control equipment.

Text Books:

1. Cooper, C.D., Alley, F.C. Air pollution control: A design approach, 2. baskı, Waveland Press, Inc., ABD.
2. Theodore, L. Air pollution control equipment calculations, John Wiley & Sons, Inc., ABD.

Reference Books:

1. Spellman, F. R., Whiting, N. E., (2004). ENVIRONMENTAL ENGINEER'S MATHEMATICS HANDBOOK by CRC Press.