Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore
Shri Vaishnav Institute of Technology and Science
Choice Based Credit System (CBCS) in Light of NEP-2020
Civil Engineering Department
Generic Elective (Undergraduate Programs)

COURSE CODE	CATEGORY	COURSE NAME	TEACHING & EVALUATION SCHEME								
			THEORY			PRACTICAL					
			END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*	L	T	P	CREDITS
GUCE106	GE	Air Pollution and Control Engineering	60	20	20	0	0	4	0	0	4

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; P – Practical; C - Credit.
*Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Educational Objectives (CEOs):
Impart knowledge on the principle and design of control of Indoor/ particulate/ gaseous air pollutant and its emerging trends.

Course Outcomes (COs):
The students completing the course will have
1. an understanding of the nature and characteristics of air pollutants, noise pollution and basic concepts of air quality management
2. ability to identify, formulate and solve air and noise pollution problems
3. ability to design stacks and particulate air pollution control devices to meet applicable standards.
4. Ability to select control equipment.
5. Ability to ensure quality, control and preventive measures.

UNIT I
10 Hrs.

Structure and composition of Atmosphere – Definition, Scope and Scales of Air Pollution – Sources and classification of air pollutants and their effect on human health, vegetation, animals, property, aesthetic value and visibility- Ambient Air Quality and Emission standards.
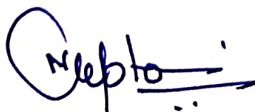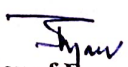
UNIT II
10 Hrs.

Effects of meteorology on Air Pollution - Fundamentals, Wind Rose, Lapse Rate, Atmospheric stability, Inversion, types of Inversion, Wind profiles and stack plume patterns, Plume rise, types of plume rise, Dispersion of pollutants, Factors affecting.
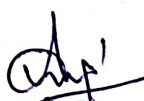
UNIT III
11 Hrs.

Factors affecting Selection of Control Equipment – Gas Particle Interaction – Working principle - Gravity Separators, Centrifugal separators Fabric filters, Particulate Scrubbers, Electrostatic Precipitators.

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UNIT IV
10 Hrs.

Factors affecting Selection of Control Equipment – Working principle - absorption, Adsorption, condensation, Incineration, Bio filters – Process control and Monitoring.

UNIT V
12 Hrs.

Sources, types and control of indoor air pollutants, sick building syndrome and building related illness- Sources and Effects of Noise Pollution – Measurement – Standards –Control and Preventive measures.
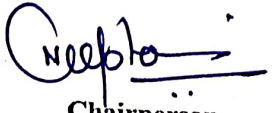
Textbooks:
1. Lawrence K. Wang, Norman C. Pareira, Yung Tse Hung, "Air Pollution Control Engineering", Tokyo, springer science + science media LLC,2004.
2. Noel de Nevers, "Air Pollution Control Engineering", Waveland press,Inc 2017.
3. Anjaneyulu. Y, "Air Pollution and Control Technologies", Allied Publishers (P) Ltd., India 2002.

Reference Books:
1. David H.F. Liu, Bela G. Liptak, "Air Pollution", Lweis Publishers, 2000.
2. Arthur C. Stern, "Air Pollution (Vol.I – Vol.VIII)", Academic Press, 2006.
3. Wayne T.Davis, "Air Pollution Engineering Manual", John Wiley & Sons, Inc, 2000.
4. M.N Rao and HVN Rao, "Air Pollution",Tata Mcgraw Hill Publishing Company limited,2007.
5. C.S.Rao, "Environmental Pollution Control Engineering", New Age International(P) Limited Publishers,2006.

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