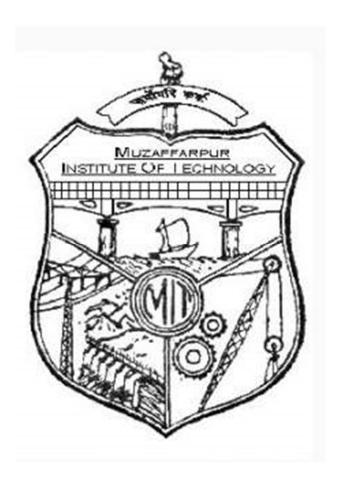# Muzaffarpur Institute Of Technology

COURSE FILE
OF
Industrial Pollution
(02 1x 27)

FACULTY NAME:
MR. Jigesh Yadav
Asst. PROFESSOR,
DEPARTMENT OF Mechanical Engineering

Institute / College Name :	**MIT MUZAFFARPUR**		
Program Name	**B.E. Mechanical**		
Course Code	EME 02 1×27		
Course Name	**Elements of Mechanical Engineering**		
Lecture / Lab (per week):	3	**Course Credits**	4
Course Coordinator Name	**Jigesh Yadav**		

1. **Scope and Objectives of the Course**

   This course is designed to understand the growth of pollution due to industrial development in modern day, its harmful effects and ways of prevention or minimization of these pollutions.

   The course outcomes are:

   1. Understand energy demand problems and consequences of industrial development..
   2. Understanding air pollution, its major sources and remedies.
   3. Understanding water pollution, its major sources and remedies.
   4. Understanding noise and land pollution, its major sources and remedies.
   5. Various ways of solid waste management.
   6. Case study of Modern environmental assessment method, pollution control in steel plants and coal industries.

2. **Textbooks**
   1. Managing Industrial Pollution by SC Bhatia
   2. Environmental pollution by HM Dix
   3. Chemistry for environmental engineering by SAWYER
3. **Reference Books**
   1. Environmental management by G. N. Pandey

1. **Course Plan**

Lecture Number	Date of Lecture	Topics	Web Links for video lectures	Text Book / Reference Book / Other reading material	Page numbers of Text Book(s)
1-4		**Introduction :**		Self-Prepared notes	
		Environments and Human activities, Environments and Ecology, Consequences of population growth. Energy problem.			
5-8		**Pollution**		RB1	61-173
		pollution of air, water and land, Fossil fuel related pollutants in the environment			
		Assignment I			
9-12				Self-Prepared notes	
		Environmental Impacts of Hydro-electric, Nuclear energy and chemicals forwards a solution.			
13-22		**Air Pollution**		RB1	89-157

		Definitions and scales of concentration, classification and properties of air pollutants, Emission an sources and their classification. Air pollution laws and standards, Inversion Ambient air sampling, stack sampling, sampling system, analysis of air pollutants. Air pollution emission control, selection of a particulate: collector, control of gaseous emission, combustion			
Assignment 2					
23-30		**Water Pollution**		RB1	61-88
		Hydrologic cycle and water quality , origin of waste water and its composition, Type of water pollutants and their effects, water pollution laws: and standards, waste water sampling and analysis water quality standard, waste water treatment , Biological systems(Aerobic and Facultative ponds), Recovery of material from process effluents.			
Mid-Semester Exam (Syllabus covered from 1-22 lectures)					
30-35		**Noise Pollution**		RB1	158-173
		Different noise environments and their sources, measurement of noise and the equipments Noise pollution lows an, Vibration isolation and noise control in industries.			
36-38		**Solid Waste Management**		RB1	182-197
		Sources and classification, Public health aspect, effluent treatment processes and solid waste management: sources and classification. Public health aspect, effluent treatment process and solid waste management, "Solid-Solid separation technique for recovery and reuse.			

38-40		**Case Study**		Internet, Wikipedia, Youtube	
		Modern environmental assessment method, pollution control in steel plants and coal industries.			
			Assignment 3		

1. **Evaluation Scheme:**

Component 1	Mid Semester Exam	30
Component 2	Assignment Evaluation	10
Component 3**	End Term Examination**	60
	Total	**100**

** The End Term Comprehensive examination will be held at the end of semester. The mandatory requirement of 75% attendance in all theory classes is to be met for being eligible to appear in this component.

SYLLABUS

Topics	No of lectures	Weightage
Introduction: Environments and Human activities, Environments and Ecology, Consequences of population growth. Energy problem.	4	10%
pollution of air, water and land, Fossil fuel related pollutants in the environment	4	10%
Environmental Impacts of Hydro-electric, Nuclear energy and chemicals, forward a solution.	4	10%
Air pollution - Definitions and scales of concentration, classification and properties of air pollutants, Emission an sources and their classification. Air pollution laws and standards, Inversion Ambient air sampling, stack sampling, sampling system, analysis of air pollutants. Air pollution emission control, selection of a particulate: collector, control of gaseous emission, combustion	10	25%
Water pollution - Hydrologic cycle and water quality , origin of waste water and its composition, Type of water pollutants and their effects, water pollution laws: and standards, waste water sampling and analysis water quality standard, waste water treatment , Biological systems(Aerobic and Facultative ponds), Recovery of material from process effluents.	8	20%
Noise pollution- Different noise environments and their sources, measurement of noise and the equipments Noise pollution lows an, Vibration isolation and noise control in industries.	6	15%
Solid Waste Management Sources and classification, Public health aspect, effluent treatment processes and solid waste management: sources and classification. Public health aspect, effluent treatment process and solid waste management, "Solid-Solid separation technique for recovery and reuse.	3	7.5%
Case Study Modern environmental assessment method, pollution control in steel plants and coal industries.	3	7.5%

This Document is approved by:

Designation	Name	Signature
Course Coordinator	Dr.	
H.O.D	Dr.	
Principal	Dr.	
Date		

Evaluation and Examination Blue Print:

Internal assessment is done through quiz tests, presentations, assignments and project work. Two sets of question papers are asked from each faculty and out of these two, without the knowledge of faculty, one question paper is chosen for the concerned examination. Examination rules and regulations are uploaded on the student's portal. Evaluation is a very transparent process and the answer sheets of sessional tests, internal assessment assignments are returned back to the students.

The components of evaluations along with their weightage followed by the University is given below

Sessional Test 1	15%
Sessional Test 2	15%
Sessional Test 3	15%
Assignments/Quiz Tests/Seminars	10%
End term examination	60%

(From amongst the three sessional tests best of two are considered)