<div align="center">**Course: Water and waste water treatment**</div>

Course Code: noc21-ce25

Session: 2020-21

Duration: 12 Weeks

Assessment procedures: Weekly Assignment (25%) + proctored certification Exam (75%)

Curriculum of the Course:

Week 1
Introduction
Overview of water and waste water systems

- Urban water system
- Treatment plans
- Design process
- Review of fundamentals
- Concentrations

Week 2
Review of fundamentals
- Material flows
- Material balance
- General approach
- Applications
- Wastewater treatment
- General conditions
- Quantities
- Quality
- Treatment objectives
- Types of plants
- Head works
- Goal
- Pump station
- Flow measurement
- Bar racks and screens
- Grit removal

Week 3
- Waste water treatment
- Primary sedimentation
- Goal
- Flocculent sedimentation
- Primary design variables
- Secondary design values
- BOD Removal

- Biological treatment
- Introduction
- Activated sludge process
- Introduction
- Biological processes

Week 4
- Waste water treatment
- Biological treatment
- Activated sludge
- Analysis (material balance)
- Design
- Activated sludge variations
- Nutrient removal in activates sludge
- Attached growth
- Trickling filter
- Rotating biological contactors

Week 5
- Waste water treatment
- Disinfection / Disinfectant removal
- Goal
- Chlorine disinfection
- UV light disinfection
- Other treatment process

Week 6
- Water treatment
- General considerations
- Quantities
- Quality
- Water treatment plants
- Preliminary treatment
- Coagulation and flocculation
- Rapid mix
- Flocculation basin

Week 7
- Water treatment
- Sedimentation
- Filtration

Week 8
- Water treatment
- Filtration
- Disinfection and disinfection by products

Week 9
- Water treatment
- Lime softening
- Ion exchange softening

Week 10
- Water treatment
- Nano filtration softening
- Desalination
- Residual management
- Overview
- Types of residuals
- Sources
- Conventional residual management systems

Week 11
- Residual management
- Concentration
- Stabilization

Week 12
- Residual management
- Conditioning
- Dewatering

List of students enrolled

S. No	Name of Student		S. No	Name of Student
1	Kavya Kulshrestha		23	Hitesh Kumar Meena
2	Abhinav Goyal		24	Ishant Jogani
3	Abhishek Moond		25	Jatin Vedwal
4	Himanshu Agarwal		26	Jayant Kumar
5	Akanksha Foujdar		27	Jay Kumar Bansiwal
6	Akanksha Foujdar		28	Kahkashan Khanam
7	Amit Kumar		29	Arvind Kumawat
8	Ankit Mina		30	Kumkum Maurya
9	Arnav Pareek		31	Lalit Meena
10	Ashish Meena		32	Lakshya Jaiswal
11	Manisha Kukna		33	Lokesh Mali
12	Aryan Khatri		34	Pranav Maheshwari
13	Atiba Qureshi		35	Rishikesh Karol
14	Jenisha Devnani		36	Mohit Saran
15	Kartikay Singhal		37	Shubham Singh
16	Kumkum Maurya		38	Sumit Dangda
17	Jenisha Devnani		39	Sandeep Verma
18	Devank Jain		40	Tanmay Jaiswal
19	Dipak Kumar		41	Akshay Verma
20	Rakesh Choudhary		42	Vikas Singh Jadoun
21	Anil Sharma		43	Vinod
22	Gunjan Khandelwal		44	Saurabh Chouhan
			45	Yogesh Sharma