



RAMCO INSTITUTE OF TECHNOLOGY

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Department of Civil Engineering

Academic Year 2021 – 2022 (Even Semester)

Degree, Semester & Branch: VI Semester B.E Civil Engineering

Course Code & Title: EN8592 Wastewater Engineering

Name of the Faculty member (s): Mrs. C. Subha

Innovative Practice Description

- **Unit / Topic:** Unit II – Primary Treatment of Sewage
- **Course Outcome:** CO 2
- **Topic Learning Outcome:** TLO5
- **Activity Chosen:** Crossword Puzzle
- **Justification:**

Crossword puzzles and Jigsaw puzzle activities give a clear idea about the particular topic. It differentiates the important terms clearly which will be helpful for understanding the concepts. A clear understanding of concepts in wastewater treatment is essential in the selection of various unit operations and processes for the treatment of wastewater.

➤ **Time Allotted for the Activity:** 20 Minutes

• **Details of the Implementation:**

The students were split into a group of three members and the questions in crossword puzzle format were given to each group. The students were asked to answer the questions from the knowledge of what they learned in the Planning and design of sewerage treatment units.

CO – PO / PSO mapping:

CO	PO1	PO9	PSO4
CO2	3	1	1

(1 – Low 2 – Moderate 3 – High)

• **.PO / PSO mapped:**

Innovative practice	PO1	PO7	PSO4
Justification for correlation	Apply knowledge of science in identifying the terms in wastewater treatment	Working in teams to solve the crossword puzzles	Understanding all the terms and definitions correctly helps to identify the treatment methodology for wastewater.

Images / Screenshot of the practice:

Activity: Use the wastewater treatment glossary and water words below to complete this puzzle

CLUES

Across	Down
2. The amount of cloudiness of a normally clear liquid due to the suspension of solid particles.	1. The biological decomposition of organic matter in sludge by aerobic or anaerobic microorganisms in the wastewater.
4. Life or natural processes that require an environment with oxygen.	3. Single-celled microscopic organisms that may be used in a variety of biological treatment processes.
9. The amount of molecular oxygen dissolved in water.	5. Microscopic animals and plants of simple cell structure that feed on the wastes in wastewater to reduce organic pollutants.
11. A separate sewer that carries rain and melted snow from street runoff.	6. Wastewater flowing into a treatment process or treatment plant.
	7. The dead water and solids that flow to a treatment plant.
	8. The process of adding air in wastewater treatment to provide oxygen for microorganisms and to keep solids in suspension.
	10. Oily or fatty matter.

• Reflective Critique:

➤ *Feedback of practice from students and other stakeholders:*

The students felt easy to remember and recollect the terms and definitions involved in the given topic.

➤ *The benefit of the practice:*

Cross Word Puzzle is an effective way of involving all students in class simultaneously. It prompts students to reflect on the day's lesson and provides the instructor with useful feedback.

➤ *Challenges faced in implementation:*

This activity was planned for 15 minutes but it took 20 minutes for completing the discussion

References:

1. Garg, S.K., Environmental Engineering Vol. II, Khanna Publishers, New Delhi, 2015
2. <https://www1.nyc.gov/assets/dep/downloads/pdf/environment/education/sewers-activity-wastewater-treatment-crossword-puzzle.pdf>

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Signature of Faculty Member

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HOD