

**ENVIRONMENTAL ENGINEERING
SYLLABUS 2022-2023 (OSMANIA UNIVERSITY)**

UNIT - I

- [Need for planned water supply schemes](#)
- [Water demand for industrial and agricultural requirements](#)
- [Sources of water](#)
- [Water quality requirements for different beneficial uses](#)
- [Population forecast Numericals on population forecast & solutions](#)
- [Water treatment through:](#)
 - [Aeration](#) (presentation) Numericals
 - [Coagulation](#) (presentation) Numericals
 - [Flocculation](#) (presentation) Numericals
 - [Sedimentation](#) (presentation) Numericals

UNIT - II

- [Filtration](#) (presentation) Numericals
- [Disinfection](#) (presentation) Numericals
- [Softening](#) (presentation) Numericals
- [Methods of layout of distribution pipes](#) (presentation)
- [Design of distribution by Hardy Cross method for simple distribution networks](#)
(presentation) Numericals
- [Various types of valves and pipes used in water supply systems](#)
(presentation)

UNIT - III

- [Domestic and stormwater sewage](#)
- [Quantity of sewage Numericals](#)
- [Sewage flow variations](#)
- [Sewer shapes](#) (presentation)
- [Design of sewerage systems Numericals](#)
- [Operation and maintenance of sewers](#) (presentation)
- [Sewage pumping](#) (presentation)
- [Sewer appurtenances](#) (presentation)

UNIT - IV

- [Self-purification of streams](#) (presentation)
- [Concept of B.O.D and C.O.D](#) Numericals (presentation)
- Wastewater treatment
 - [Aerobic treatment systems](#) (presentation)
 - [Anaerobic treatment systems](#) (presentation)
 - [Suspended growth systems](#) (presentation)
 - [Attached growth systems](#) (presentation)
- [Quality requirements of recycled water for various purposes](#)
- [Principles of septic tank Numericals](#) (presentation)

UNIT - V

- Theory and design concepts of
 - [Activated sludge process Numericals](#) (presentation)
 - [Mechanically aerated lagoons Numericals](#) (presentation)
 - [Sequencing Batch Reactor \(SBR\)](#) (presentation)
 - [Waste Stabilization Ponds \(WSP\) Numericals](#) (presentation)
- [Basic concepts of bioremediation](#) (presentation)

PROBLEMS & SOLUTIONS

IMPORTANT QUESTIONS

ADDITIONAL NOTES

IMPORTANT TERMS AND FORMULAE

DESIGN CRITERIA OF

- | | |
|---|-----------------------------------|
| ● AERATION TANK | ⇒ EXAMPLE PROBLEM |
| ● CASCADE AERATOR | ⇒ EXAMPLE PROBLEM |
| ● SCREEN CHAMBER | ⇒ EXAMPLE PROBLEM |
| ● COAGULATION TANK | ⇒ EXAMPLE PROBLEM |
| ● FLOCCULATION TANK | ⇒ EXAMPLE PROBLEM |
| ● SEDIMENTATION TANK | ⇒ EXAMPLE PROBLEM |
| ● FILTRATION PROCESS | ⇒ EXAMPLE PROBLEM |
| ● DISINFECTION PROCESS | ⇒ EXAMPLE PROBLEM |
| ● SOFTENING PROCESS | ⇒ EXAMPLE PROBLEM |
| ● ROTATING BIOLOGICAL CONTACTOR | ⇒ EXAMPLE PROBLEM |
| ● SEPTIC TANK | ⇒ EXAMPLE PROBLEM |