

PERIYAR UNIVERSITY

(NAAC 'A' Grade- State University- NIRF Rank 68)

SALEM – 636 011

DEPARTMENT OF ENVIRONMENTAL SCIENCE

Value Added Course: Wastewater Quality Analysis and Treatment

Course Code: 19UPEVSVA01

Course Mentors: Dr. P. Senthilkumar & Dr. P. Jayanthi

December
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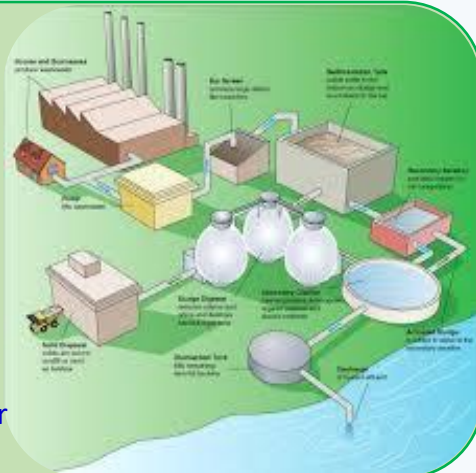
About the Course

Course Duration: 30 Hours

Rapid industrialization and urbanization, shortage of fresh water availability have made the treatment and reuse of recycled wastewater to be essential to meet out the water demand. However, recycled wastewater need to be treated for ensuring its quality efficiently use for designed purposes, such as agriculture, industrial reuse, toilet flushing, ground water recharge etc. In order to equip the students in this context, this course is offered by the Department of Environmental Science as an open course for all the science students who want to acquire knowledge about wastewater treatment and various types of pollutants present in the wastewater. The course will largely cover topics including the basic units and principles of wastewater treatment, conventional and advanced treatment processes and analysis of the quality of recycled wastewater for reuse. The purpose of this course is to enlighten the knowledge of students and understanding on technologies for water treatment, quality parameters and reuse.

Course outcome

- CO1:** Acquire a basic knowledge on various treatment technologies and quality parameters of wastewater.
- CO2:** Understand the principles of treatment technologies and analysis of quality parameters.
- CO3:** Gain the knowledge on different type of treatment technologies and its importance.
- CO4:** To find the ways to recycle and reuse of polluted water for future perspectives.



Syllabus

Introduction: Physical, chemical and biological properties of water, types of water sources, occurrence and importance. Water pollution: source, types and management

Wastewater Treatment Technologies: Introduction to the basic units and principles of wastewater treatment. Conventional and advanced treatment technologies of wastewater.

Wastewater Quality Parameter Analysis: Physiochemical parameters – Color, Odour, Temperature, Turbidity, Chemical Oxygen Demand, Biochemical Oxygen Demand, Dissolved Oxygen, Total Solids, Total Suspended Solids, Total Dissolved Solids, Nutrients (Nitrogen and Phosphate) and other metals. Biological parameters - Microbial analysis.