

Training activity in the frame of the doctoral programme

Industrial wastewater treatment, from basic concepts to case studies

Place: [ETSE](#) (USC, Santiago de Compostela)

Date: 8th, 9th and 11th November 2021

Room: Room A7 (8th and 9th November). Room A6 (11th November)

Schedule: 8th, 9th Nov. from 11:30 to 14:00 and 11th Nov. from 11:00 to 14:00

Hours number: 8 h (in-person) + 2 h (personal work)

Language: English

Targeted to: PhD students, Post-Docs and researcher in the field of Science and Engineering

Nº of seats: 40

Registration period from 2nd to 5th November (both included)

Registration form: <https://forms.gle/rnMJiPkHipN5stnF6>

The contents to be developed throughout the sessions of the course are:

Session 1 (2.5 h)

1. General Characteristics of Industrial Effluents, Effects on receiving water body & Tolerance limits - Effluent Standards - Disposal Options - Industrial Water Requirements - Sources of wastewater - Toxics from industry
2. Pre-treatment of Industrial Wastewater - Necessity and application - Strength Reduction – Volume Reduction – Equalization and Proportioning- Neutralization - Segregation - Process Changes - Salvaging - By product Recovery.

Session 2 (2.5 h)

3. Treatment methods – Conventional treatment, Other advanced treatment methods- RO, Filtration, Ion Exchange, Electro dialysis
4. Tertiary treatment - Removal of Refractory Organics - Removal of Nitrogen and Phosphorus - Wastewater Disinfection - Zero Waste approach – ZLD - Wastewater reclamation recycle and reuse

Session 3 (3 h)

5. Case study on Textile, Leather, Sugar and Dairy Industries - Raw materials - Water Requirements - Sources of Wastewater - Salient Characteristics of Wastewater - Suitable pre-treatment - Wastewater treatment options.

At the end of the course the student will be able to:

1. Sample and Analyze the characteristics of industrial Wastewaters,
2. Analyze the effects of disposal of industrial wastes,
3. Identify and design treatment options for handling industrial wastewater.

Lecturing staff

Professor Chandra Sekhar

Visiting Professor stay funded by the ERASMUS + Programme



Dr Chandra Sekhar is Professor in Civil Engineering at National Institute of Technology Warangal. He is an expert in the areas of water quality, waste treatment and environmental impact assessment. He is BoS Member for no of universities like JNTUA, JNTUH, SVU, KU, etc. and Governing Body Member for few Eng. Colleges. He is also Member for Expert Committee on Environmental Flows in Krishna – Godavari Rivers. He has lot of administrative experience as Registrar, NITW, Director (Academic), Institute for Electronic Governance, Govt of AP, Head, Training & placements, etc. He has coordinated several workshops, seminars, continuing education programs.

Authored a text Book titled Environmental Science, which is prescribed text book in SVU, NITW, KU, etc. He has number of publications to his credit. He was invited for Research Discussions at the University of Essen and Technical University of Vienna. Invited by UN to teach a course on Environmental Eng. at the Prestina Summer Univ. He was offered the prestigious Scholarships by the Max Plank Institute, Hamburg and DCAMM (Danish Center for Applied Mathematics and Mechanics) International Graduate Research School, Denmark. He was invited for two World Wide Water - Junior Environmental Scientists (WWW – JES) Workshops at Water University, Paris. Awarded Gold Medal and Memento for Best Contribution as Team Leader in the Janmabhoomi Programme involving peoples' participation.

He traveled widely across the globe on teaching, research, and other consignments. The list includes Japan, Germany, USA, France, Netherlands, UK, Ireland, New Zealand, Australia, Kuwait, Denmark, Austria, Singapore, etc.