CIVL 3019 WASTEWATER SYSTEMS DESIGN

Credit Points 10

Legacy Code 301426

Coordinator Sathaa Arumugam Sathasivan (https://directory.westernsydney.edu.au/search/name/Sathaa Arumugam Sathasivan/)

Description Providing clean water and sanitation is one of the United Nations Sustainable Development Goals. Students will gain knowledge and skills in designing and proposing modifications to current wastewater and sanitation practices. Students will examine conventional processes and explore how they should be modified to address emerging issues (contaminants, climate variability) and how the potential of wastewater as a resource can be realised. Students will also identify various ways smart technologies can be adopted in addressing the challenges facing wastewater disposal/resource recovery.

School Eng, Design & Built Env

Discipline Water and Sanitary Engineering

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 3 subject

Pre-requisite(s) CIVL 2003 AND
CIVL 2002 OR
ENGR 1050 OR
PROC 1006

Equivalent Subjects CIVL 4014 - Water and Wastewater Treatment

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Assess risk from key waterborne pathogens and propose engineering control.
2. Demonstrate the ability to set up mass balance equation for different scenario.
3. Design conventional wastewater treatment processes.
4. Measure water quality variation in a pilot/full-scale wastewater system and explain how processes could be modified, to achieve a desired outcome.
5. Assess the risks of wastewater effluent disposal to water bodies including that from climate change/extreme events.
6. Evaluate the environmental impact of wastewater collection, treatment and disposal methods and propose solution in line with Circular Economy concept.
7. Design resource recovery options and explain emerging wastewater treatment options.

Subject Content

1.Water quality parameters relevant for wastewater
2.Wastewater microbiology and epidemiology
3.Wastewater collection systems
4.Modelling wastewater treatment processes
5.Wastewater and sludge treatment processes
6.Resource recovery

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task
Report	1500 words	10	N	Individual
Report	1500 words	10	N	Individual
Quiz	2000-3000 words and 15 minutes	30	N	Both (Individual & Group)
Final Exam	2 hours	50	Y	Individual