

## Code: CEE 373

Course Moderator: Nadim Reza Khandaker

### 1. What is this course about?

#### 1.1 Course description

This course teaches the important concepts and fundamental principles of wastewater systems (including wastewater contaminants, characteristics, estimation of wastewater flows, collection systems, simple design of sewers, and preliminary and primary treatment systems), biological and other treatment processes, and treatment and disposal of bio-solids. After completing this course, you will be able to design, construct, operate and manage wastewater collection systems and wastewater treatment plants.

#### 1.2 Course content

• Wastewater Treatment Systems, Characteristics of Wastewater • Wastewater Systems • Wastewater Collection Systems • Preliminary Treatment of Wastewater • Primary Treatment of Wastewater • Secondary Treatment of Wastewater - Treatment Ponds, Trickling Filters, Rotating Biological Contactors • Secondary Treatment of Wastewater - Activated Sludge • Anaerobic Treatment • Tertiary Treatment of Wastewater (Advanced Treatment), • Disinfection • Sludge Treatment and Disposal • Natural Treatment of Wastewater, Process Control

### Student Assessment Criteria

Task-1 Mid-term Exam-1 (or 3 Quiz)	25%
Task-2 Mid-term Exam-2	25%
Task-3 Final Exam	30%
Class Participation (or Design Project with Presentation)	20%

Teaching Week / Module	What key concepts/content will I learn?	What activities will I engage in to learn the concepts/content?
<b>Directed Study Activities</b>		<b>Independent Study Activities</b>
1	Nature of this course: aims objectives and assessment, Wastewater Treatment Systems, Characteristics of Wastewater	LECTURE Attend library and IT skills tutorial if necessary
2	Wastewater Systems	LECTURE TUTORIAL Readings and resources detailed in Blackboard
3	Wastewater Collection Systems	LECTURE TUTORIAL Readings and resources detailed in

			Blackboard
4	Preliminary Treatment of Wastewater	LECTURE TUTORIAL	Readings and resources detailed in Blackboard
5	Primary Treatment of Wastewater	LECTURE TUTORIAL	Readings and resources detailed in Blackboard
6	Secondary Treatment of Wastewater - Treatment Ponds, Trickling Filters, Rotating Biological Contactors	LECTURE TUTORIAL	Readings and resources detailed in Blackboard
7	Secondary Treatment of Wastewater – Activated Sludge	LECTURE TUTORIAL	Readings and resources detailed in Blackboard
8	Anaerobic Treatment	LECTURE	Readings and resources detailed in Blackboard
9	Sludge Treatment and Disposal	LECTURE TUTORIAL on Disinfection	Readings and resources detailed in Blackboard
10	Visit to Municipal and Industrial wastewater treatment systems		