Annexe A: New/Revised Course Content in OBTL+ Format

Course Overview

The sections shown on this interface are based on the templates UG OBTL+ or PG OBTL+
If you are revising/duplicating an existing course and do not see the pre-filled contents you expect in the subsequent sections e.g. Course Aims, Intended Learning Outcomes etc. please refer to Data Transformation Status for more information.

Expected Implementation in Academic Year	AY 2023/2024
Semester/Trimester/Others (specify approx. Start/End date)	Semester 1
Course Author * Faculty proposing/revising the course	Lee-Chua Lee Hong
Course Author Email	clhlee@ntu.edu.sg
Course Title	Urban Water Circularity
Course Code	CV3017
Academic Units	2
Contact Hours	26
Research Experience Components	Not Applicable

Course Requisites (if applicable)

Pre-requisites	CV1012 Fluid Mechanics
Co-requisites	
Pre-requisite to	
Mutually exclusive to	
Replacement course to	
Remarks (if any)	

Course Aims

This course aims to provide you with an in-depth water and wastewater treatment and resource recovery principles, which integrate science and engineering principles to improve the availability of water resource and water environment, to provide healthy water, for other organisms, and to remediate water pollution and recover resource in more sustainable ways. Urban Water Circularity is vital for our future as we need to protect the earth for those who live here tomorrow.

Course's Intended Learning Outcomes (ILOs)

Upon the successful completion of this course, you (student) would be able to:

ILO 1	Calculate the water use and wastewater generation.
ILO 2	Explain basic water quality parameters and wastewater characteristics.
ILO 3	Discuss the working principle and design of unit processes for water treatment.
ILO 4	Discuss the working principle and design of unit processes for wastewater treatment.

Course Content

1. Water Use
2. Water Quality and Standard
3. Water Treatment Processes
4. Wastewater Generation and Characteristics
5. Wastewater Treatment Processes

Reading and References (if applicable)

1. Hammer and Hammer, ‘Water and Wastewater Technology’, Pearson Prentice Hall, 7th Ed. 2012.

2. Metcalf and Eddy, 'Wastewater Engineering - Treatment and Reuse', McGraw Hill, 4th Edition, 2004.

Planned Schedule

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
1	Water Use	1		In-person	Lecture and Tutorial
2	Water Quality and Standard	2		In-person	Lecture and Tutorial
3	Water Treatment Processes	3		In-person	Lecture and Tutorial
4	Water Treatment Processes	3		In-person	Lecture and Tutorial
5	Water Treatment Processes	3		In-person	Lecture and Tutorial
6	Water Treatment Processes	3		In-person	Lecture and Tutorial
7	Wastewater Generation and Characteristics	1, 2		In-person	Lecture and Tutorial
8	Wastewater Treatment Processes	4		In-person	Lecture and Tutorial
9	Wastewater Treatment Processes	4		In-person	Lecture and Tutorial
10	Wastewater Treatment Processes	4		In-person	Lecture and Tutorial
11	Wastewater Treatment Processes	4		In-person	Lecture and Tutorial
12	Wastewater Treatment Processes	4		In-person	Lecture and Tutorial

Week or Session	Topics or Themes	ILO	Readings	Delivery Mode	Activities
13	Wastewater Treatment Processes	4		In-person	Lecture and Tutorial

Learning and Teaching Approach

Approach	How does this approach support you in achieving the learning outcomes?
Lecture	Faculty will elaborate on complex content for deeper learning. You will be able to ask questions when in doubt.
Tutorial	Tutor will guide you in analysing and solving problems.

Assessment Structure

Assessment Components (includes both continuous and summative assessment)

No.	Component	ILO	Related PLO or Accreditation	Weightage	Team/Individual	Rubrics	Level of Understanding
1	Continuous Assessment (CA): Test/Quiz(Quiz 1)	1, 2, 3	a, b, g	20	Individual	Analytic	Multistructural
2	Continuous Assessment (CA): Test/Quiz(Quiz 2)	4, 5	a, b, c, g, i, j	20	Individual	Analytic	Multistructural
3	Summative Assessment (EXAM): Final exam(Physical Examination)	1, 2, 3, 4	a, b, g	60	Individual	Holistic	Relational

Description of Assessment Components (if applicable)

Formative Feedback

For CA1, the questions and solutions will be discussed with you after the quiz. You will be informed of the median grade and individual grade will be uploaded in NTULearn.
For CA2, the questions and solutions will be discussed with you after the quiz. You will be informed of the median grade and individual grade will be uploaded in NTULearn.

NTU Graduate Attributes/Competency Mapping

This course intends to develop the following graduate attributes and competencies (maximum 5 most relevant)

Attributes/Competency	Level
Care for Environment	Advanced
Communication	Advanced
Problem Solving	Advanced
Transdisciplinarity	Intermediate

Course Policy

Policy (Academic Integrity)

Good academic work depends on honesty and ethical behaviour. The quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honour Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values. As a student, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at NTU. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the academic integrity website for more information. On the use of technological tools (such as Generative AI tools), different courses / assignments have different intended learning outcomes. Students should refer to the specific assignment instructions on their use and requirements and/or consult your instructors on how you can use these tools to help your learning. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.

Policy (General)

You are expected to complete all assigned pre-class readings and activities, attend all lectures and tutorials punctually and take all quizzes. You are expected to take responsibility to follow up with course notes and course related announcements for lectures and tutorials you have missed. You are expected to participate in all lectures and tutorials discussions and activities.

Policy (Absenteeism)

CAs make up a significant portion of your course grade. Absence from quizzes without a valid reason will affect your overall course grade. Valid reasons include falling sick supported by a medical certificate and participation in NTU's approved activities supported by an excuse letter from the relevant bodies. There will be no make-up opportunities for quizzes.

Policy (Others, if applicable)

Last Updated Date: 25-06-2024 07:43:20

Last Updated By: Yang, En-Hua