

Course Design Template (3)

World Leading in Curriculum Design

Course Information				
Offering Department				
Course Code				
Course Title				
Degree				
Type of Course				
Semester Start Date				
Semester End Date				
Class Schedule				
Course Credits				
Prerequisite				
Anti-requisite				
Instructor(s)				
Name	Email	Phone	Office Location	Office Hours
Teaching Assistant(s)				
Name	Email	Phone	Office Location	Office Hours

1. Course Objectives

A short paragraph that describes your course syllabus goals/objectives. Learning objectives is a description of what you intend to teach or cover in a learning experience. Approximately 100 word description.

2. Backward Design: Learning Outcomes

On completion of this course students will be able to

Capabilities (knowledge & understanding)	Competencies (skills)
1.	
2.	
3.	
4.	

3. Instructional Methods

Instructional methods help learners to develop capabilities and competencies from a course, it can be used in a lesson design as follow: role-playing, lectures, brainstorming, cooperative learning, and problem based learning.

4. Course Content

Learning Outcomes (LOs) provides a way to focus and structure the course content and the associated weekly schedule.

Week	Lectures Date	Topic
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
16		

5. Assessment

Student assessment is an approach to identify students learning that is linked with progression. It is important to consider both formative and summative assessment methods in designing the assessment strategy. For more detailed description of formative and summative assessment [click on this link](#).

Formative Assessment

For example, formative assessment may involve completing an individual examination (online), writing a course reflection (evaluative), and working on a team project (online platforms).

Summative Assessment

For example, summative assessment may comprise of 100% overall marks of a technical research paper on a given chemical process. The research paper will evaluate, summarize, and clarify theoretical and chemical issues in the research question. The research project may include:

- Individual research topic report (60%)
- One personal reflective report (40%)

Assessment Criteria

The instructor should ensure that the assessment criteria explains how an assessment, either formative or summative, is mapped into the learning outcomes. For instance, the above examples must indicate a linkage with learning outcomes.

Additional Guide

The instructor should share their expectations to the learners in the assessment. Instructors should inform learners what to include and what to avoid when responding to the assessment. These additional guidelines ensure that learners focus on the assessment based on these guidelines and this provides support in how to prioritize their responses. Instructors use this opportunity to highlight issues such as the expected formulas, equations, format of the research, procedures to be followed and the presentation of the assessment.

Example

Aquatic Chemistry is focused on a co-design approach to learning. The approach is rooted in Sustainable Development Goal 4 (SDG-4) that is an enabler for personalized learning and scientific innovation. The framework provides a tool to support the scaffolding of capabilities, competencies and impact.

		Capabilities	Competencies	Impact	Co-design for Learning					
Topics		Learning Outcomes	Micro-Credentials	21st Century Skills			Assessment Criteria	Co-design		
Micro	Introduction to Aquatic Chemistry; water relevance and controversies	Understand the terminologies associated with solute concentrations; explore water's molecular nature.	<ul style="list-style-type: none"> - Relevance & controversies - Molecular liquid - Chemical bonding 	Innovation	Communications	Critical Thinking	Learn	Apply	Evaluate	Flexible Learning Assets
	Water as a molecular liquid and chemical bonding.						10	10	5	
	Liquids in electric fields – dipole moment.									
Micro	Electrostatics: Hydrogen bonding and anomalous properties of water.	Apply electrostatics to understand water's anomalous properties, ion hydration, and salt dissolution.	<ul style="list-style-type: none"> - Electrostatics - Solute concentrations - Thermodynamics of salt dissolution 	Innovation	Communications	Critical Thinking	Learn	Apply	Evaluate	Flexible Learning Assets
	Solute concentrations and ions behavior in water						10	10	5	
	Salt dissolution in water – lattice energy, hydration and born energy, entropy of mixing.									
Micro	Speciation of strong and weak acids/bases.	Analyze speciation of strong and weak acids/bases in water in the presence of salts and gases. Debye-Hückel model	<ul style="list-style-type: none"> - Speciation of acids/bases - Debye-Hückel model - Gas-liquid equilibrium 	Innovation	Communications	Critical Thinking	Learn	Apply	Evaluate	Flexible Learning Assets
	Multi-protic acids; chemical activity; Debye-Hückel model						10	10	5	
	Gas-liquid equilibrium (Henry's law)									
Micro	Course review and Q&A	Create and defend a report by applying the knowledge gathered in the course to answer a scientific question.	<ul style="list-style-type: none"> - Course review - Project report & presentation - Scientific writing 	Innovation	Communications	Critical Thinking	Learn	Apply	Evaluate	Flexible Learning Assets
	Exam and course project clinic						10	10	5	
	Course project clinic and presentations									

Digital Portfolio
 Scientific Data & Writing
 Capabilities, Competencies, Impact



Learn



Apply



Evaluate