

# Course Outline

**School / Portfolio:** Faculty of Science and Technology

**Course Title:** ENVIRONMENTAL CHEMISTRY 2

**Course ID:** SCCHM3002

**Credit Points:** 15.00

**Prerequisite(s):** (CHMGC2752 or SCCHM2002)

**Co-requisite(s):** Nil

**Exclusion(s):** (CHMGC3742)

**ASCED Code:** 010503

## Program Level:

AQF Level of Program						
	5	6	7	8	9	10
Level						
Introductory	■	■	■	■	■	■
Intermediate	■	■	■	■	■	■
Advanced	■	■	✓	■	■	■

## Learning Outcomes:

### Knowledge:

- K1.** Describe a range of water and waste-water management schemes and discuss the different quality and quantity requirements of different users of water;
- K2.** Explain the chemical principles involved in the purification of water for domestic and industrial use;
- K3.** Discuss the nature, properties, effects and detection of toxic substances in the aquatic environment;
- K4.** Describe the energy and mass transfer processes which occur in the atmosphere and their impact on chemistry, in particular photochemical and radical reactions in the atmosphere.

### Skills:

- S1.** Detect, quantify and interpret the presence of a range of atmospheric pollutants, or chemical pollutants in aquatic systems using modern analytical and monitoring methods.

### Application of knowledge and skills:

- A1.** Apply chemical principles to solving environmental issues in the air and water environments

## Course Content:

Topics may include:

- Water usage

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- Water and wastewater treatment processes
- Toxic pollutants in the aquatic environment
- Physical properties of the atmosphere
- Photochemistry and Radical Chemistry
- Cloud Processing

### Values and Graduate Attributes:

#### Values:

- V1.** In this course students will continue to develop an inquiring and curious attitude to science.
- V2.** Students will have the opportunity to collaborate with others in solving authentic problems, both in theory and in the laboratory.
- V3.** As they work through the content, students will continue to acquire the ability for reflective, life-long learning.

#### Graduate Attributes:

Attribute	Brief Description	Focus
Continuous Learning	This course will encourage students to be inquiring and reflective thinkers.	Medium
Self Reliance	Students will work independently to design and carry out assessment in this course.	Medium
Engaged Citizenship	Students will utilize critical and creative thinking and apply it to real world problems in environmental chemistry.	Medium
Social Responsibility	Examples and case-studies which reflect the ethical and social responsibilities of environmental chemists will be emphasized in this course.	Medium

### Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Task	Assessment Type	Weighting
S1, A1	Laboratory/tutorial sessions which cover sampling and analysis of water and air	Laboratory performance and written reports	20-30%
A1	Investigation into one area of current atmospheric research.	Oral Presentation	10-15%
K1, K2	Investigation into industrial water usage	Written report	10-15%
K1, K2, K3, K4, A1	Short answer and extended response questions exploring knowledge of content and application of chemical principles to environmental problems	Written Examination	50-60%

### Adopted Reference Style:

Australian