1. **Title of the module**

Chemistry and the Environment (CHEM3710/CH371)

1. **School or partner institution which will be responsible for management of the module**

School of Physical Sciences

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 4

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Term 1

1. **Prerequisite and co-requisite modules**

None

1. **The programmes of study to which the module contributes**

BSc(Hons) Chemistry

BSc(Hons) Chemistry with a Professional Placement

BSc(Hons) Chemistry with a Year Abroad

BSc(Hons) Chemistry with a Foundation Year

MChem Chemistry

This is not available as a wild module.

1. **The intended subject specific learning outcomes.**

**On successfully completing the module students will be able to:**

1. Demonstrate knowledge of core and foundation scientific chemical and physical concepts, terminology, theory, units, conventions and methods in relation to chemistry and the environment.
2. Understand areas of chemistry including related to the environment, pollution, climate change, chemical disasters.
3. Appreciate developments at the forefront of some areas of chemical sciences.
4. Demonstrate an ability to demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to the subject and to apply such knowledge and understanding to the solution of qualitative and quantitative problems.
5. Demonstrate an ability to recognise and analyse problems and plan strategies for their solution by the evaluation, interpretation and synthesis of scientific information and data.
6. Demonstrate skills in essay writing and presenting scientific material and arguments clearly and correctly to a range of audiences.
7. **The intended generic learning outcomes.**

**On successfully completing the module students will be able to:**

1. Demonstration a range of appropriate communication skills.
2. Demonstrate generic skills needed for students to undertake further training of a professional nature.
3. Demonstrate computational skills, including such aspects as modes of data presentation, presentation, report structuring.
4. Demonstrate information-retrieval skills, in relation to primary and secondary information sources, including information retrieval through on-line computer searches.
5. Demonstrate information-technology skills such as word-processing and spreadsheet use, data-logging and storage, Internet communication, etc.
6. Demonstrate time-management and organisational skills, as evidenced by the ability to plan and implement efficient and effective modes of working. Self-management and organisational skills with the capacity to support life-long learning.
7. Demonstrate an ability to demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to the subject and to apply such knowledge and understanding to the solution of qualitative and quantitative problems.
8. Demonstrate an ability to recognise and analyse problems and plan strategies for their solution by the evaluation, interpretation and synthesis of scientific information and data.
9. **A synopsis of the curriculum**

This module will provide an initial look into chemistry and the environment, introducing important concepts such as pollution and climate change. The effects of chemical disasters will also be considered. Additionally, this module will begin to provide students with the wider skills necessary to study chemistry at university.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**
* Overton, Johnson, and Scott, Study and Communication Skills for the Chemical Sciences, 2019, Oxford University Press
* Van Loon and Duffy, Environmental Chemistry A global perspective, 2017, Oxford University Press
1. **Learning and teaching methods**

Total contact hours: 30

Total private study hours:120

Total module study hours: 150

1. **Assessment methods**
	1. Main assessment methods

|  |  |
| --- | --- |
| Online Quiz (1 hour) | 10% |
| Assessed Workshop (4 hours) | 35% |
| Presentation (2 hours) | 20% |
| Essay (4 hours) | 35% |

13.2 Reassessment methods

100% by Coursework

1. **Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section 12) and methods of assessment (section 13)**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 | 9.6 | 9.7 | 9.8 |
| **Learning/teaching method** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Private Study** | **X** | **X** | **X** |  |  | **X** | **X** |  |  | **X** | **X** | **X** | **X** | **X** |
| Workshop |  |  |  | **X** | **X** | **X** | **X** | **X** | **X** |  | **X** | **X** |  |  |
| Lectures | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Online Quiz | **X** | **X** |  | **X** | **X** |  |  | **X** |  | **X** | **X** | **X** | **X** | **X** |
| Assessed Workshop | **X** | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Presentation | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |  |
| Essay  | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |  |

1. **Inclusive module design**

The School recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

Chemistry is an inherently international subject, with teaching and research active across the globe, and this is facilitated by well-defined conventions in terminology and mathematical modelling which allow complex concepts to be communicated across language barriers. In recent years, Nobel prizes and prestigious awards have been awarded to international collaborators and rivals. This module introduces students to the work of these pioneers, as well as the fundamentals behind it, and so enables them to interact with this community. Where possible, the reading list has been chosen, in part, to demonstrate the diversity of backgrounds of chemists working in the field.

**DIVISIONAL OFFICE USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
|  |  |  |  |  |
|  |  |  |  |  |