Chemistry with Environmental & Sustainable Chemistry

CAO code: DN200 Option: Chemistry & Chemical Sciences (CCS)

Sample pathway for a degree in Chemistry with Environmental & Sustainable Chemistry

**YEAR 1**

**CHEMISTRY**

Topics include:
- The Basis of Organic and Biological Chemistry
- The Basis of Physical Chemistry
- The Molecular World

**MATHMATICS**

Topics include:
- Mathematics for the Biological & Chemical Sciences

**ENGAGE WITH THE PRINCIPLES**

- One Small-Group Project
- Two Elective modules

**YEAR 2**

**CHEMISTRY WITH ENVIRONMENTAL & SUSTAINABLE CHEMISTRY**

Topics include:
- Environmental and Sustainable Chemistry
- Inorganic Chemistry
- Physical Chemistry
- Environmental Geology

**CHEMISTRY**

Topics include:
- The Basis of Inorganic Chemistry
- Organic Chemistry
- Chemical Biology
- Biophysical Chemistry

**CHOUSE YOUR SUBJECTS**

- Two Elective modules

**YEAR 3**

**FOCUS ON YOUR CHOSEN SUBJECT**

- Quantum Mechanics
- Carbonyl Chemistry & Synthesis
- Self-Assembly of Biomolecules
- Mechanism & Stereochemistry

**CHEMISTRY WITH ENVIRONMENTAL & SUSTAINABLE CHEMISTRY**

Topics include:
- Instrumental Analysis
- Organometallic & Solid State Chemistry
- Main Group Chemistry & Bonding
- Symmetry & Computational Chemistry

- Two Elective modules

**YEAR 4**

**REFINE YOUR KNOWLEDGE**

- Environmental & Sustainable Chemistry Research Project
- Green and Sustainable Chemistry
- Methods in Organic Synthesis

- Chemical Thermodynamics
- Nanochemistry
- Electrochemistry
- Reactivity & Change
- Modern Methods and Catalysis

**CHEMISTRY WITH ENVIRONMENTAL & SUSTAINABLE CHEMISTRY**

Topics include:
- Advanced Inorganic Chemistry
- Methods in Organic Synthesis 2
- Industrial Internship

- Two Elective modules

**BSc (Honours) Chemistry with Environmental & Sustainable Chemistry**

Apart from the positions that a chemistry degree would qualify a student for (see below), graduates in this degree would be uniquely qualified to work in fields related to Environmental Protection (e.g., the Environmental Protection Agency), Green Chemistry and Sustainable Energy generation.

**PhD**

Students can pursue a PhD in Ireland or abroad in areas as diverse as:
- Pharmaceutical design
- Atmospheric kinetics
- Biological aspects of nanoscience
- Energy generation
- Pollution control
- Novel material synthesis
- Polymer chemistry
- Materials analysis bio-inorganic chemistry
- Computational studies

**Industry**

Most graduates work in the pharmaceutical or chemical industries. Positions range from manufacturing chemists to quality control/analysis/assurance, research and development and raw materials/product analysis in manufacturing.
- 2nd level or 3rd level Teaching
- State Labs such as the Forensic laboratory
- ESB and Bord Gáis
- Medical device industry
- Patent law
- Healthcare industry

*See pages 4 and 5 for information on the terminology used above. Potential combinations shown here are examples only and are not guaranteed by UCD. Topics are subject to change each year.

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