School of Chemistry

Aims and Objectives: Session 2023-2024, Semester 1

Module CH1301: The Impact of Chemistry

Course Title: Prebiotic Chemistry

Duration: 9 hours

Lecturer: Professor D. Philp

Aims: The aim of this part of the module is to investigate the basic chemistry behind the age-old questions of how life arose on Earth and its potential in other parts of the Universe.

Objectives:

1. Be aware of the general considerations affecting the origin of life. Understand experimental approaches to the study of the origins of life.

2. Appreciate the role played by kinetic and thermodynamics factors. To recognize the role of solar energy and other chemical energy sources.

3. Understand the origin and vital role of water for life on earth.

4. Understand the role of amino acids and sugars in biological chemistry and appreciate the potential syntheses in the prebiotic world.

5. Understand the role of phospholipid membranes.

6. Understand prebiotic syntheses of purines and pyrimidines and potential prebiotic synthesis of RNA.

7. Understand requirement of information storage polymers.

8. Be able to identify RNA as a catalyst and nucleic acids as templates, to understand the requirement for replication.

9. Current investigations for life and essential molecules for life elsewhere in the universe by space exploration missions.