

School of Chemistry

Head of School Professor P G Bruce

Degree Programmes

Graduate Diploma: Biological and Medicinal Chemistry

M.Sc.: Biological and Medicinal Chemistry

Programme Requirements

Graduate Diploma: CH4009, CH4011, CH4021, CH4022, CH4023, CH4024, CH4025, CH4026, CH4027, CH4029

M.Sc.: Modules as above plus CH4028

Modules

CH4009 Bioinorganic Chemistry

Credits: 5.0 Semester: 1
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: A series of topics on the role of metals in biological systems will be discussed.
Teaching: Five lectures.
Assessment: 40 minute Examination = 100%

CH4011 Molecular Modelling

Credits: 10.0 Semester: 2
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: This module involves hands-on use of computers for the modelling of organic structures, energy minimisation, transition states, enzyme-substrate interactions etc.
Teaching: 10 hours including computer time.
Assessment: Continuous Assessment = 100%

CH4021 Organic Chemistry

Credits: 10.0 Semester: 1
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: The module provides an in-depth study of synthetic organic chemistry and synthetic strategy.
Teaching: 13 lectures
Assessment: 2 Hour Examination = 100%

CH4022 Medicinal Chemistry

Credits: 5.0 Semester: 1
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: The module aims to introduce the area of Medicinal Chemistry discussing the important techniques employed. This includes methods of drug discovery and lead modification, followed by a discussion of the case histories of important drugs.
Teaching: 6 lectures
Assessment: 40 minute Examination plus project = 100%

CH4023 Structural Biology

Chemistry - 4000 Level modules

Credits: 10.0 Semester: 1
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: The module aims to introduce the students to an outline of the processes involved in determining the structures of proteins and other biological molecules using X-ray diffraction and modern NMR techniques. It will also introduce the students to application of these techniques in modern medicinal and biological chemistry. The X-ray method of structure determination will be contrasted with the alternative NMR approach.

Teaching: 10 lectures
Assessment: 2 Hour Examination = 100%

CH4024 Synthesis for Medicinal Chemistry

Credits: 5.0 Semester: 1
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: The module aims to increase the students' awareness of new developments in the synthesis of important classes of drug molecules.

Teaching: 5 lectures and directed reading
Assessment: 40 minute Examination = 100%

CH4025 Advanced Spectroscopic Techniques

Credits: 5.0 Semester: 2
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: The module provides in-depth discussion of mass spectrometry, and NMR spectroscopy as applied to biological molecules including advance pulse sequences used to determine NMR spectra of proteins.

Teaching: 5 lectures
Assessment: 40 minute Examination = 100%

CH4026 New Topics in Medicinal Chemistry

Credits: 10.0 Semester: 2
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: The module aims to make the students aware of important new developments in medicinal chemistry, such as combinatorial chemistry, NO donor drugs and aspects of carbohydrate chemistry, and have an understanding of the areas in which new breakthroughs are likely in the future.

Teaching: 10 lectures
Assessment: Continuous Assessment = 100%

CH4027 Pharmacology

Credits: 5.0 Semester: 2
Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.
Description: The module aims to provide an introduction to pharmacology for chemists, highlighting those areas important for Biological and Medicinal Chemistry including a discussion of receptors, their interactions with drug molecules, log dose response curves, agonism and antagonism and structure-activity relationships.

Teaching: 5 lectures
Assessment: 40 minute Examination = 100%

CH4028 Research Project including an Introductory Review

Credits: 45.0 Semester: Whole Year

Chemistry - 4000 Level modules

Prerequisite: Achievement of grade point 14 on taught coursework

Programme(s): Compulsory module for the M.Sc. Programme in Biological and Medicinal Chemistry.

Description: The module aims to develop skills in the following areas: retrieval, selection and organisation of material from published literature; experimental design and problem solving; experimental and/or computational skills; teamwork; oral and written communication. The project will be selected and supervised by a member of the academic staff.

Teaching: Full-time during the whole year

Assessment: Assessed according to a range of criteria

CH4029 Medicinal Selectivity and Targeting

Credits: 10.0 Semester: 2

Programme(s): Compulsory module for Biological and Medicinal Chemistry Postgraduate Taught Programme.

Description: The reasons why drugs such as anti-viral agents are selective in their action will be explored through lectures, directed reading and discussion.

Teaching: 10 lectures with associated directed reading and discussion.

Assessment: Continuous Assessment = 50%, 40 minute Examination = 50%

