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: CH5009, CH5011, CH5021, CH5022, CH5023, CH5024, CH5025, CH5026, CH5027, CH5029
M.Sc.: Modules as above plus CH5028

Modules

CH5009 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%

CH5011 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%

CH5021 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%

CH5022 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%

CH5023 Structural Biology
**Chemistry - 5000 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%

**CH5024 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%

**CH5025 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%

**CH5026 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%

**CH5027 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%

**CH5028 Research Project including an Introductory Review**  
Credits: 45.0  
Semester: Whole Year
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

**CH5029 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%