School of Chemistry

Chemistry (CH) Modules

CH1202 Introductory Chemistry for Second Year Direct Entry Students

SCOTCAT Credits:	10	SCQF Level 7	**Semester**	1
Academic year:	2019/0			
Availability restrictions:	Available to students entering at Level 2000 into Single Honours Chemistry programmes, Biomolecular Science, Joint Honours Biology and Chemistry and Single Honours Biochemistry programmes			
Planned timetable:	9.00 am or 10.00 am			
This module provides an introduction to some of the fundamental aspects of Chemistry and is for students entering the Chemistry BSc and MChem courses directly into second year. The module will cover structure and bonding in inorganic chemistry, states of matter and an introduction to thermodynamics and the solid state in physical chemistry and bonding, stereochemistry and reaction mechanisms in organic chemistry.				
Pre-requisite(s):	Students must have advanced higher chemistry at grade a, or A-Level chemistry at grade a or equivalent.			
Anti-requisite(s)	You cannot take this module if you take CH1401 or take CH1402 or take CH1601			
Co-requisite(s):	Students on single honours chemistry programmes, biomolecular science or joint honours biology and chemistry must also take CH2501.			
Learning and teaching methods of delivery:	**Weekly contact**: 3 lectures or tutorials. Students are also required to complete 3 x 3-hour practicals in Week 1 only, integrated within their CH2501 laboratory hours.			
	Scheduled learning: 30 hours		**Guided independent study:** 70 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 100%, Practical Examinations = 0%, Coursework = 0%			
	As used by St Andrews: 1.5-hour Written Examination = 100%			
Re-assessment pattern:	1.5-hour Written Examination = 100%			
Module coordinator:	Dr J B O Mitchell			
Module teaching staff:	Dr B A Chalmers, Dr Neil Keddie, Prof R M J Goss, Dr J B O Mitchell, Dr T van Mourik, Prof D Philp			

CH1301 The Impact of Chemistry

SCOTCAT Credits:	20	SCQF Level 7	**Semester**	1
Academic year:	2019/0			
Planned timetable:	12.00 noon			
This module explores the impact that chemistry has on all our lives and all aspects of society. Starting with the chemical origins of life in the primordial soup, it will explore fuel and energy, the great challenge of global warming, forensic chemistry, chemistry and the environment, and chemistry in food production.				
Pre-requisite(s):	National level 5 or GCSE Chemistry. Students with no formal qualification in Chemistry may be admitted but should expect to undertake additional tutorial work and private study			
Learning and teaching methods of delivery:	**Weekly contact**: 5 lectures (x 8 weeks) and 1 group project hour (x 1 week).			
	Scheduled learning: 41 hours		**Guided independent study:** 159 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations 70%, Practical Examinations 20%, Coursework 10%			
	As used by St Andrews: 2-hour Written Examination = 70%, 15-minute Practical Examination = 20%, Coursework = 10%			
Re-assessment pattern:	2-hour Written Examination = 70%, Existing 15-minute Practical Examination = 20%, Existing Coursework = 10%			
Module teaching staff:	Prof S E M Ashbrook, Dr P A Connor, Prof T K Smith, Prof J T S Irvine, Dr C Lancefield, Dr G Florence, Prof RJM Goss			

CH1401 Introductory Inorganic and Physical Chemistry				
SCOTCAT Credits:	20	SCQF Level 7	**Semester**	1
Academic year:	2019/0			
Planned timetable:	Lectures: 11.00 am, Practical classes: One per week 2.00 to 5.00 pm			
The module includes lectures on the origin of the elements, atoms and the Periodic Table, shapes and properties of molecules, chemistry of the elements, properties of solutions, thermochemistry, thermodynamics and kinetics.				
Pre-requisite(s):	In taking this module you must have higher or A-Level chemistry at grade b or above or equivalent			
Anti-requisite(s)	You cannot take this module if you take CH1202			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 1 x 3-hour afternoon practical.			
	Scheduled learning: 74 hours		**Guided independent study:** 126 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 60%, Practical Examinations = 0%, Coursework = 40%			
	As used by St Andrews: 2-hour Written Examination = 60%, Coursework = 40%			
Re-assessment pattern:	2-hour Written Examination = 60%, Existing Coursework = 40%			
Module coordinator:	Dr S King			
Module teaching staff:	Prof P A Wright, Prof R E Morris, Dr P Kilian, Dr S King			

CH1402 Inorganic and Physical Chemistry 1				
SCOTCAT Credits:	20	SCQF Level 7	**Semester**	2
Academic year:	2019/0			
Planned timetable:	Lectures: 10.00 am, Practical classes: One per week 2.00 to 5.00 pm			
The module includes lectures on bonding in simple molecules, inorganic solids, chemistry of the first row transition metals, properties of solids, states of matter and introductory spectroscopy.				
Pre-requisite(s):	Before taking this module you must pass CH1401 or have passed higher or A-Level chemistry (or equivalent) at grade b or better.			
Anti-requisite(s)	You cannot take this module if you take CH1202			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 1 x 3-hour afternoon practical.			
	Scheduled learning: 74 hours		**Guided independent study:** 126 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 60%, Practical Examinations = 5%, Coursework = 35%			
	As used by St Andrews: 2-hour Written Examination = 60%, 1-hour Practical Examination = 5%, Coursework = 35%			
Re-assessment pattern:	2-hour Written Examination = 60%, Existing 1-hour Practical Examination = 5%, Existing Coursework = 35%			
Module coordinator:	Dr T Van Mourik			
Module teaching staff:	Dr F D Morrison, Dr S J King, Dr G Haehner, Dr J L Payne, Dr B E Bode, Prof R E Morris			

CH1601 Organic and Biological Chemistry 1

SCOTCAT Credits:	20	SCQF Level 7	**Semester**	2
Academic year:	2019/0			
Planned timetable:	Lectures: 11.00 am, Practical classes: One per week 2.00 to 5.00 pm			
The module includes lectures on the structure, stereochemistry and nomenclature of simple organic compounds, fundamental organic reaction mechanisms, organic functional groups and their reactions, introductory bioorganic chemistry, and organic spectroscopy.				
Pre-requisite(s):	Before taking this module you must have passed higher or A-Level chemistry at grade b or above or other equivalent qualification.			
Anti-requisite(s)	You cannot take this module if you take CH1202			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 1 x 3-hour afternoon practical.			
	Scheduled learning: 80 hours		**Guided independent study:** 120 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 60%, Practical Examinations = 5%, Coursework = 35%			
	As used by St Andrews: 2-hour Written Examination = 60%, 1-hour Practical Examination = 5%, Coursework = 35%			
Re-assessment pattern:	2-hour Written Examination = 60%, Existing 1-hour Practical Examination = 5%, Existing Coursework = 35%			
Module coordinator:	Dr I A Smellie			
Module teaching staff:	Dr N S Keddie, Prof A D Smith, Prof R J M Goss			

CH2201 A First Course in Organic Chemistry

SCOTCAT Credits:	20	SCQF Level 8	**Semester**	1
Academic year:	2019/0			
Availability restrictions:	Available to non-graduating students only			
Planned timetable:	Lectures: 10.00 am, Practical classes: Two per week 2.00-5.00 pm			
This module is an introductory course in organic chemistry. It covers aspects of structure, bonding and stereochemistry in Organic Chemistry. The syllabus includes the chemistry of alkanes, simple cycloalkanes, alkenes and alkynes together with functional group chemistry, largely that of singly-bonded functional groups. The chemistry is discussed and rationalised with reference to reaction mechanisms. The lecture course is complemented by a laboratory course.				
Pre-requisite(s):	Available to non-graduating students only			
Anti-requisite(s)	You cannot take this module if you take CH1202 or take CH1601			
Learning and teaching methods of delivery:	**Weekly contact**: 3 - 4 lectures, 1 tutorial, 2 afternoon practical classes.			
	Scheduled learning: 87 hours		**Guided independent study:** 113 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 60%, Practical Examinations = 15%, Coursework = 25%			
	As used by St Andrews: 2-hour Written Examination = 60%, 1-hour Practical Examination = 15%, Coursework = 25%			
Re-assessment pattern:	2-hour Written Examination= 80%, Existing Coursework = 20%			
Module coordinator:	Dr G J Florence			
Module teaching staff:	Dr H Mitchell			

CH2501 Inorganic Chemistry 2

SCOTCAT Credits:	30	SCQF Level 8	**Semester**	1
Academic year:	2019/0			
Planned timetable:	Lectures: 11.00 am, Practical classes: Two per week 2.00 to 5.00 pm			
The module includes lectures on metal complexes and organometallics, descriptive transition-metal chemistry, atmospheric chemistry, solid-state chemistry and descriptive main-group chemistry.				
Pre-requisite(s):	Before taking this module you must pass CH1402 or (pass CH1401 and pass CH1601)			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 2 x 3-hour afternoon practicals.			
	Scheduled learning: 93 hours		**Guided independent study:** 207 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 60%, Practical Examinations = 10%, Coursework = 30%			
	As used by St Andrews: 3-hour Written Examination = 60%, Practical = 30%, Coursework / Presentation = 10%			
Re-assessment pattern:	3-hour Written Examination = 60%, Practical = 30%, Coursework / Presentation = 10%			
Module coordinator:	Dr B A Chalmers			
Module teaching staff:	Dr P Kilian, Prof P Lightfoot, Dr E Zysman-Colman, Dr A Stasch, Dr B A Chalmers			

CH2601 Organic Chemistry 2

SCOTCAT Credits:	30	SCQF Level 8	**Semester**	2
Academic year:	2019/0			
Planned timetable:	Lectures: 12.00 noon, Practical classes: Two per week 2.00 to 5.00 pm			
The module includes lectures on carbon-carbon bond formation, interconversion of functional groups, aromatic and heteroaromatic reactivity, mechanistic biological chemistry and organic spectroscopy.				
Pre-requisite(s):	Before taking this module you must pass CH1601 or pass CH1202			
Anti-requisite(s)	You cannot take this module if you take CH2603			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 2 x 3-hour afternoon practicals.			
	Scheduled learning: 115 hours		**Guided independent study:** 185 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 60%, Practical Examinations = 7%, Coursework = 33%			
	As used by St Andrews: 3-hour Written Examination = 60%, 1-hour Practical Examination = 7.5%, Coursework = 32.5%			
Re-assessment pattern:	3-hour Written Examination = 60%, Existing 1-hour Practical Examination = 7.5%, Existing Coursework = 32.5%			
Module coordinator:	Dr R A Aitken			
Module teaching staff:	Dr G J Florence, Prof M L Clarke, Dr R A Aitken, Prof T K Smith, Dr C Johnston			

CH2603 Organic Chemistry 2 (French)

SCOTCAT Credits:	20	SCQF Level 8	**Semester**	2
Academic year:	2019/0			
Planned timetable:	12.00 noon on selected days according to the timetable for FR2022. Practical classes: Two per week 2.00 to 5.00 pm			
The module includes lectures on carbon-carbon bond formation, interconversion of functional groups, aromatic and heteroaromatic reactivity, mechanistic biological chemistry and organic spectroscopy.				
Pre-requisite(s):	Entry to single honours chemistry programmes or biomolecular science at level 2000			
Anti-requisite(s)	You cannot take this module if you take CH2601			
Co-requisite(s):	You must also take FR2022			
Learning and teaching methods of delivery:	**Weekly contact**: 3 lectures, 1 tutorial and 5 hours of practicals over 2 afternoons.			
	Scheduled learning: 76 hours		**Guided independent study:** 124 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 60%, Practical Examinations = 7%, Coursework = 33%			
	As used by St Andrews: 2-hour Written Examination = 60%, 1-hour Practical Examination = 7%, Coursework = 33%			
Re-assessment pattern:	2-hour Written Examination = 60%, Existing 1-hour Practical Examination = 7%, Existing Coursework = 33%			
Module coordinator:	Dr R A Aitken			
Module teaching staff:	Dr G J Florence, Prof M L Clarke, Dr R A Aitken, Prof T K Smith			

CH2701 Physical Chemistry 2

SCOTCAT Credits:	30	SCQF Level 8	**Semester**	2
Academic year:	2019/0			
Planned timetable:	Lectures: 11.00 am, Practical classes: Two per week 2.00 to 5.00 pm			
The module includes lectures on quantum mechanics, thermodynamics and electrochemistry, kinetics, molecular spectroscopy and diffraction and mathematical tools for chemistry.				
Pre-requisite(s):	Before taking this module you must pass CH1202 or pass CH1402			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 2 x 3-hour afternoon practicals.			
	Scheduled learning: 106 hours		**Guided independent study:** 194 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 60%, Practical Examinations = 5%, Coursework = 35%			
	As used by St Andrews: 3-hour Written Examination = 60%, 1-hour Practical Examination = 5%, Coursework = 35%			
Re-assessment pattern:	3-hour Written Examination = 60%, Existing 1-hour Practical Examination = 5%, Existing Coursework = 35%			
Module coordinator:	Prof W Zhou			
Module teaching staff:	Prof C J Baddeley, Dr G Haehner, Prof P A Wright, Prof S E M Ashbrook, Dr R Schaub			