ID4001 Communication and Teaching in Science

SCOTCAT Credits:	15	SCQF Level 10	**Semester:**	1
Academic year:	2013/4			
Availability restrictions:	Available only to final year students who have been accepted following application and interview in the preceding semester.			
Planned timetable:	Flexible			

This module is based on the Undergraduate Ambassador Scheme launched in 2002. It provides final year students within the Faculty of Science with the opportunity to gain first hand experience of science education through a mentoring scheme with science teachers in local schools. Students will act initially as observers in the classroom and later as classroom assistants. With permission of the teacher-in-charge, students may also be given the opportunity to lead at least one lesson, or activity within a lesson, during their placement. This module will enable students to gain substantial experience of working in a challenging and unpredictable working environment, and of communicating scientific ideas at various different levels; and to gain a broad understanding of many of the key aspects of teaching science in schools. While of particular value to students aiming for a career in education, these core skills are equally important for any career that requires good communication. Entry to this module is by selection following application and interview during the preceding semester.

Programme module type:	Optional for degrees in the Faculty of Science who meet the appropriate criteria.	
Learning and teaching methods and delivery:	**Weekly contact**: Occasional tutorials and a half-day training session.	
	Scheduled learning: 30 hours	**Guided independent study:** 120 hours
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 55%, Coursework = 45%	
	As used by St Andrews: Coursework = 100% comprising: Written report on the placement (35%) Teacher's assessment of student's placement (25%) Oral presentation (30%) Project proposal (10%)	
Module Co-ordinator:	Dr B Sinclair	

ID4002 Communication and Teaching in Arts and Humanities

SCOTCAT Credits:	15	SCQF Level 10	**Semester:**	1	
Academic year:	2013/4				
Availability restrictions:	Available only to students in the Schools of Divinity, Geography & Geosciences, History, International Relations, Modern Languages or Departments of Philosophy.				
Planned timetable:	To be arranged.				

This module provides final year students within the Faculties of Arts and Divinity with the opportunity to gain first hand experience of education through a mentoring scheme with teachers in local schools. This module will enable students to gain substantial experience of working in a challenging and unpredictable working environment, and to gain a broad understanding of many of the key aspects of teaching in schools.

Programme module type:	Optional for Divinity, Geography, History, International Relations, Modern Languages or Philosophy.
Co-requisite(s):	If taken within Divinity, History, International Relations or Philosophy, a further 15-credit subject-specific module may be required. TBC
Learning and teaching methods and delivery:	**Weekly contact**: The module commences with an Induction Event at the University (3 hours). Students spend a minimum of 20 hours during the semester at their placement. 3 x 1-hour tutorials are held at the University during the semester. The module concludes with an oral presentation session.
	Scheduled learning: 28 hours · **Guided independent study:** 122 hours
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 30%, Coursework = 70%
	As used by St Andrews: Coursework = 100% comprising: Written project proposal (10%) + written report (35%) = 45% Oral presentation (at University, assessed by module lecturers) = 30% A further 25% of Coursework is in the form of a report by their placement-mentor on the student's practical performance in the classroom on placement.
Module Co-ordinator:	Dr E Stoddart

ID4442 Combined Research Project in Biology and Geology

SCOTCAT Credits:	45	SCQF Level 10	Semester:	Whole Year

Academic year:	2013/4

Planned timetable:	To be arranged.

This module provides an individual research project on a topic spanning the biological and geological sciences which allows the student to pursue in depth a topic of personal interest. The student works largely independently of supervision and has the opportunity to demonstrate individuality, initiative and enterprise. The project will be supported by advisors in both Biology and Geology. Skills of planning and executing research are learnt, as well as the ability to work independently, and present the results orally and in dissertation form (up to 10,000 words). (Guidelines for printing and binding dissertations can be found at: http://www.st-andrews.ac.uk/printanddesign/dissertation/)

Programme module type:	Compulsory for B.Sc. Honours programme in Biology and Geology
Pre-requisite(s):	Admission to BSc Honours programme in Biology and Geology

Learning and teaching methods and delivery:	**Weekly contact**: Individual supervision by member(s) of teaching staff	
	Scheduled learning: 20 hours	**Guided independent study:** 430 hours

Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 10%, Coursework = 90%
	As used by St Andrews: Research proposal = 5%, Oral Presentation = 10%, Dissertation = 85%

Module Co-ordinator:	Dr T Raub
Lecturer(s)/Tutor(s):	Dr T Raub

ID5059 Knowledge Discovery and Datamining

SCOTCAT Credits:	15	SCQF Level 11	**Semester:**	2	

Academic year:	2013/4

Planned timetable:	11.00 am Mon (odd weeks), Wed and Fri.

Contemporary data collection can be automated and on a massive scale e.g. credit card transaction databases. Large databases potentially carry a wealth of important information that could inform business strategy, identify criminal activities, characterise network faults etc. These large scale problems may preclude the standard carefully constructed statistical models, necessitating highly automated approaches. This module covers many of the methods found under the banner of "Datamining", building from a theoretical perspective but ultimately teaching practical application. Topics covered include: historical/philosophical perspectives, model selection algorithms and optimality measures, tree methods, bagging and boosting, neural nets, and classification in general. Practical applications build sought-after skills in the commercial packages SAS and SPSS.

Programme module type:	Optional for M.Sci. in Computer Science
	Optional for Advanced Computer Science, Artificial Intelligence, Networks and Distributed Systems, Software Engineering and Erasmus Mundus Dependable Software Systems M.Sc. Programmes.
	Compulsory for Applied Statistics and Datamining Taught Postgraduate Programme.
	Optional for Statistics Taught Postgraduate Programme.

Anti-requisite(s):	MT5759

Learning and teaching methods and delivery:	**Weekly contact**: Lectures, seminars, tutorials and practical classes.	
	Scheduled learning: 35 hours	**Guided independent study:** 115 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%

Module Co-ordinator:	Dr C R Donovan and Dr T Kelsey