

Masters in Artificial Intelligence

Programme Requirements

Taught Element, and PG Diploma in Artificial Intelligence:

120 credits:

- IS5101
- CS5001
- CS5010
- CS5011
- CS4402 or CS5012
- in total, up to 30 credits from CS4100 - CS4450, subject to appropriate experience
- remaining credits from IS5102 - IS5150, CS5003 - CS5089, ID5059

MSc:

120 credits from Taught Element plus CS5098 or CS5099, the topic being in Artificial Intelligence

MPhil:

120 credits from Taught Element of Artificial Intelligence plus a 40,000-word thesis

For all Masters degrees there are exit awards available that allow suitably-qualified candidates to receive a Postgraduate Certificate or Postgraduate Diploma.

Compulsory modules:

IS5101 Masters Core Skills				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	Whole Year
Planned timetable:	To be arranged.			
<p>This module equips students with essential skills for completing an MSc in the School of Computer Science. Topics include: technical writing for Computer Science and Information Technology; use of bibliographic and referencing software; presentation skills; critical analysis of written work; generic research skills including framing research hypotheses, designing and conducting experiments, use of survey tools and gathering, analysing and presenting data; understanding basic statistics; use of project planning techniques; awareness of professional and ethical issues in research activities; carrying out a literature review; and awareness of what constitutes academic misconduct. Skills in these areas are reinforced through practical assignments.</p>				
Programme module type:	Compulsory for all Postgraduate Programmes except Erasmus Mundus Dependable Software Systems.			
Learning and teaching methods and delivery:	Weekly contact: Lectures, seminars, tutorials and practical classes.			
Assessment pattern:	Coursework = 100%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

Computer Science - Artificial Intelligence MSc & MPhil - 2016/7 - August 2016

CS5001 Object-Oriented Modelling, Design and Programming				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	1
Planned timetable:	Variable			
This module introduces and revises object-oriented modelling, design and implementation up to the level required to complete programming assignments within other MSc modules. Students complete a number of practical exercises in laboratory sessions.				
Programme module type:	Compulsory for Advanced Computer Science, Artificial Intelligence, Human Computer Interaction, Networks and Distributed Systems, Software Engineering and Erasmus Mundus Dependable Software Systems Postgraduate Programmes.			
Anti-requisite(s):	CS5002	Required for:	CS5011, CS5021, CS5031	
Learning and teaching methods and delivery:	Weekly contact: Lectures, tutorials and practical classes.			
Assessment pattern:	Coursework = 100%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

CS5010 Artificial Intelligence Principles				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	1
Planned timetable:	To be arranged.			
This module covers foundational knowledge of Artificial Intelligence (AI). The module gives an overview of AI and its philosophy. It covers fundamental principles in AI: logical reasoning, reasoning in the presence of uncertainty, and machine learning. It shows how search is used to solve a variety of problems in AI. Notions such as agency and uncertainty in AI are covered. Finally, the philosophy of AI in practice and the philosophical problems in AI are shown.				
Programme module type:	Compulsory for Artificial Intelligence Postgraduate Programme. Optional for all Postgraduate Programmes in the School of Computer Science			
Anti-requisite(s):	CS3105	Required for:	CS5011	
Learning and teaching methods and delivery:	Weekly contact: Lectures, seminars, tutorials and practical classes.			
Assessment pattern:	2-hour Written Examination = 60%, Coursework = 40%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

CS5011 Artificial Intelligence Practice				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	1
Planned timetable:	To be arranged.			
This module covers practical design and implementation of Artificial Intelligence (AI). It provides grounding in AI technique, covering techniques in the areas of AI reasoning, planning, doing, and learning. Finally, it is shown how to implement AI ideas in software and how to evaluate such implementation.				
Programme module type:	Compulsory for Artificial Intelligence Postgraduate Programme. Optional for other Postgraduate Programmes in the School of Computer Science			
Co-requisite(s):	CS5001, CS5010	Required for:	CS5012, CS5019	
Learning and teaching methods and delivery:	Weekly contact: Lectures, seminars, tutorials and practical classes.			
Assessment pattern:	Coursework = 100%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

EITHER

CS5012 Language and Computation				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	2
Planned timetable:	To be arranged.			
This module covers the major aspects of natural language processing and speech understanding, including computational syntax, computational semantics, discourse processing, machine translation and speech recognition.				
Programme module type:	Either CS5012 or CS4402 is compulsory for the Artificial Intelligence Postgraduate Programme. Optional for Postgraduate Programmes in the School of Computer Science			
Pre-requisite(s):	CS3052 or CS5010			
Learning and teaching methods and delivery:	Weekly contact: Lectures, seminars, tutorials and practical classes.			
Assessment pattern:	2-hour Written Examination = 60%, Coursework = 40%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

OR

CS4402 Constraint Programming				
SCOTCAT Credits:	15	SCQF Level 10	Semester:	2
Planned timetable:	To be arranged.			
This module introduces constraint-based reasoning as a powerful mechanism for knowledge representation and inference. It provides a thorough grounding in the constraint satisfaction/constrained optimisation problem formalism, and covers both basic techniques for implementing constraint solvers and the use of advanced techniques with a commercial solver.				
Programme module type:	Either CS5012 or CS4402 is compulsory for the Artificial Intelligence Postgraduate Programme. Optional for Erasmus Mundus Dependable Software Systems Postgraduate Programme			
Learning and teaching methods and delivery:	Weekly contact: 2 lectures (x 11 weeks) and fortnightly tutorial.			
Assessment pattern:	2-hour Written Examination = 60%, Coursework = 40%			
Module Co-ordinator:	hons-coord-cs@st-andrews.ac.uk			
Lecturer(s)/Tutor(s):				

Compulsory module for MSc:

EITHER

CS5098 Group Project and Dissertation in Computer Science				
SCOTCAT Credits:	60	SCQF Level 11	Semester:	Summer
Planned timetable:	To be arranged.			
<p>This module is a group-based MSc project on a topic in Computer Science. It results in an individual dissertation of no more than 15,000 words submitted by each student. Typically the dissertation comprises a review of related work, the extension of old or development of new ideas, software implementation and testing, analyses and evaluation. The dissertation may also include an agreed collaboratively-written group report. Each student is individually assessed, taking into account both individual and group submissions. Students are required to give a presentation of their work.</p>				
Programme module type:	Optional for MSc in Advanced Computer Science, in Artificial Intelligence, in Computing & IT, in Human Computer Interaction, in Networks and Distributed Systems, Software Engineering Postgraduate Programmes.			
Pre-requisite(s):	Admission to dissertation phase of MSc and permission of the Head of School	Anti-requisite(s):	CS5099	
Learning and teaching methods and delivery:	Weekly contact: Meetings with supervisor.			
Assessment pattern:	Coursework = 100%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

OR

CS5099 Dissertation in Computer Science				
SCOTCAT Credits:	60	SCQF Level 11	Semester:	Summer
Planned timetable:	To be arranged.			
<p>This module is an individually supervised MSc project on a topic in Computer Science. It results in a dissertation of no more than 15,000 words. Typically the dissertation comprises a review of related work, the extension of old or development of new ideas, software implementation and testing, analyses and evaluation. Students are required to give a presentation of their work.</p>				
Programme module type:	Optional for MSc in Advanced Computer Science, in Artificial Intelligence, in Human Computer Interaction, in Networks and Distributed Systems, and Software Engineering Postgraduate Programmes.			
Pre-requisite(s):	Admission to dissertation phase of MSc	Anti-requisite(s):	CS5098	
Learning and teaching methods and delivery:	Weekly contact: Meeting with supervisor.			
Assessment pattern:	Coursework = 100%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

Optional modules:

CS5003 Masters Programming Projects				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	2
Planned timetable:	Variable			
This module reinforces key programming skills gained in CS5002, by means of a series of coursework assignments posed as small programming projects. These are designed to offer increasing depth and scope for creativity as the module progresses.				
Programme module type:	Compulsory for Computing and Information Technology Postgraduate Programme. Optional for Advanced Computer Science, Artificial Intelligence, Data-Intensive Analysis, Dependable Software Information Technology, Human Computer Interaction MSc Programmes			
Pre-requisite(s):	CS5002	Anti-requisite(s):	IS5108	
Learning and teaching methods and delivery:	Weekly contact: Lectures, tutorials and practical classes.			
Assessment pattern:	Coursework = 100%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

CS5019 Artificial Intelligence (Special Subject)				
SCOTCAT Credits:	15	SCQF Level 11	Semester:	2
Planned timetable:	To be arranged.			
This module is a guided reading module on any aspect of Artificial Intelligence not covered by other available modules. It is intended only for MSc students in Artificial Intelligence whose circumstances make it appropriate to deliver an individually designed programme of study in a specialist area of Artificial Intelligence not covered by other modules.				
Programme module type:	Optional for Artificial Intelligence Postgraduate Programme.			
Pre-requisite(s):	the consent of the Head of School	Anti-requisite(s):	CS5029, CS5039	
Learning and teaching methods and delivery:	Weekly contact: Tutorials and practical classes.			
Assessment pattern:	Coursework = 100%			
Module Co-ordinator:	masters-coord-cs@st-andrews.ac.uk			

[Further optional modules are available - see the pdf online called 'PG Computer Science - optional modules 2016 - 2017.'](#)

