Master of Science

Computer Communication Systems

Programme Requirements

Computer Communication Systems - MSc
(CS5098 (60 credits) **or** CS5099 (60 credits)) **and** IS5101 (15 credits) **and** CS5001 (15 credits) **and** CS5020 (15 credits) **and** CS5022 (15 credits) **and** (CS4103 (15 credits)) **or** CS5024 (15 credits) **and** Between 0 and 30 credits from Module List: CS4100 - CS4450 **and** Between 0 and 30 credits from Module List: IS5102 - IS5150 **and** Between 0 and 60 credits from Module List: CS5003 - CS5089, ID5059 **Further requirements** Students must select 180 credits. CS5001 is compulsory except when exempted following satisfactory performance in an assessment conducted by the school. **MPhil:** 120 credits from taught element of programme requirements (not including project/dissertation) plus a thesis of up to 40,000 words

Compulsory modules:

IS5101 Masters Core Skills				
SCOTCAT Credits:	15	SCQF Level 11	**Semester:**	Whole Year
Planned timetable:	To be arranged.			
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.				
Programme module type:	Compulsory for all Postgraduate Programmes except European Masters in Dependable Software Systems.			
Learning and teaching methods and delivery:	**Weekly contact**: Lectures, seminars, tutorials and practical classes.			
Assessment pattern:	Coursework = 100%			
Module coordinator:	dopgt-cs@st-andrews.ac.uk			

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, Computer Communication Systems and Software Engineering Postgraduate Programmes, except when exempted following satisfactory performance in an assessment conducted by the school. Compulsory for European Masters in Dependable Software Systems Postgraduate Programme Either CS5001 or CS5002 is compulsory for Human Computer Interaction and Computing and Information Technology Postgraduate Programmes. Optional for Data-Intensive Analysis, Information Technology and Management and Information Technology Postgraduate Programmes.			
Anti-requisite(s):	CS5002			
Required for:	CS5011, CS5022, CS5031, CS5052			
Learning and teaching methods and delivery:	**Weekly contact**: Lectures, tutorials and practical classes.			
Assessment pattern:	Coursework = 100%			
Module coordinator:	dopgt-cs@st-andrews.ac.uk			

CS5020 Principles of Computer Communication Systems

SCOTCAT Credits:	15	SCQF Level 11	**Semester:**	1
Planned timetable:	TBC			
This module aims to equip students with a deep knowledge of fundamental concepts and terminologies of computer communication systems (CCS). It will illustrate fundamental principles with reference to widely-used systems and technologies for CCS and enable students to use high level tools for networked systems configuration, exploration and management of CCS. Students will also be made aware of security and privacy principles and how they are used in CCS.				
Programme module type:	Compulsory for MSc in Computer Communication Systems Optional for all other taught postgraduate programmes in the School of Computer Science			
Learning and teaching methods and delivery:	**Weekly contact**: 2 lectures (x 11 weeks), 1 tutorial (x 6 weeks)			
Assessment pattern:	2-hour Written Examination = 60%, Coursework = 40%			
Module coordinator:	dopgt-cs@st-andrews.ac.uk			

CS5022 Practice in Computer Communication Systems				
SCOTCAT Credits:	15	SCQF Level 11	**Semester:**	1
Planned timetable:	To be arranged.			
This module aims to introduce students to the applications, protocols and architecture of Computer Communication Systems in terms of their practical realisation, operation, control and management. It will enable them to use standard programming languages and tools in order to build communication applications and protocols and to use standard analytical and statistical tools for examining the operation and performance of communication applications, protocols and systems.				
Programme module type:	Compulsory for MSc in Computer Communication Systems Optional for all other taught postgraduate programmes in the School of Computer Science.			
Co-requisite(s):	CS5001 and CS5020			
Learning and teaching methods and delivery:	**Weekly contact**: 2 lectures (x 10 weeks), 1 tutorial (x 4 weeks), lab session (x 4 weeks)			
Assessment pattern:	Coursework = 100%			
Module coordinator:	dopgt-cs@st-andrews.ac.uk			

EITHER

CS4103 Distributed Systems				
SCOTCAT Credits:	15	SCQF Level 10	**Semester:**	2
Planned timetable:	To be arranged.			
This module covers the fundamentals of distributed systems, with reference to system models, programming languages, algorithmic techniques, concurrency and correctness.				
Programme module type:	Either CS4103 or CS5024 is compulsory for Computer Communication Systems Postgraduate Programme Optional for other Postgraduate Programmes in the School of Computer Science			
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 coordinator:	hons-coord-cs@st-andrews.ac.uk			

OR

CS5024 Advanced Topics in Computer Communication Systems				
SCOTCAT Credits:	15	SCQF Level 11	**Semester:**	2
Planned timetable:	TBC			
This module reinforces the basic principles and fundamental concepts of computer communication systems (CCS). It will cover, in depth, new developments and emerging topics in CCS and allow students to analyse, evaluate, critique and reproduce results from CCS research papers.				
Programme module type:	Either CS4103 or CS5024 is compulsory for Computer Communication Systems Postgraduate Programmes Optional for all other taught postgraduate programmes in the School of Computer Science			
Pre-requisite(s):	CS5022			
Learning and teaching methods and delivery:	**Weekly contact**: 2 lectures (x 11 weeks), 1 tutorial (x 6 weeks)			
Assessment pattern:	2-hour Written Examination = 60%, Coursework = 40%			
Module coordinator:	dopgt-cs@st-andrews.ac.uk			

EITHER

CS5098 Group Project and Dissertation in Computer Science				
SCOTCAT Credits:	60	SCQF Level 11	**Semester:**	Summer
Planned timetable:	To be arranged.			
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.				
Programme module type:	Either CS5099 or CS5098 is compulsory for the Advanced Computer Science, Artificial Intelligence, Data-Intensive Analysis, Human Computer Interaction, Computer Communication Systems and Software Engineering MSc			
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 coordinator:	dopgt-cs@st-andrews.ac.uk			

OR

CS5099 Dissertation in Computer Science				
SCOTCAT Credits:	60	SCQF Level 11	**Semester:**	Summer
Planned timetable:	To be arranged.			
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.				
Programme module type:	Either CS5099 or CS5098 is compulsory for the Advanced Computer Science, Artificial Intelligence, Data-Intensive Analysis, Human Computer Interaction, Computer Communication Systems and Software Engineering MSc			
Pre-requisite(s):	Admission to dissertation phase of MSc and permission of the Head of School			
Anti-requisite(s):	CS5098			
Learning and teaching methods and delivery:	**Weekly contact**: Meeting with supervisor.			
Assessment pattern:	Coursework = 100%			
Module coordinator:	dopgt-cs@st-andrews.ac.uk			

Optional modules are available - see the pdf online called Computer Science - optional modules 2017 - 2018.