CS1002 Object-Oriented Programming

SCOTCAT Credits:	20	SCQF level 7	**Semester**	1
Academic year:	2020-2021			
Planned timetable:	Lectures: 3.00 pm Mon and Tue, exercise classes: either 9.00 am or 10.00 am Thu and Fri			
This module covers problem-solving skills, programming basics and object-oriented concepts, modelling and programming. Practical skills are reinforced through a range of exercises and assignments covering these topics.				
Pre-requisite(s):	Before taking this module you must have Mathematics (either Higher or A-Level at Grade A or better)			
Anti-requisite(s)	You cannot take this module if you take CS2101			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 1 x 3-hour practical class.			
	Scheduled learning: 80 hours		**Guided independent study:** 120 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Re-assessment pattern:	Programming assignment = 100%			

CS1003 Programming with Data

SCOTCAT Credits:	20	SCQF level 7	**Semester**	2
Academic year:	2020-2021			
Planned timetable:	Lectures: 3.00 pm Mon and Tue, Exercise classes: either 9.00 am or 10.00 am Wed and Thu			
This module explores various aspects of data storage, processing and analysis. Programming skills are reinforced through a range of exercises and practicals covering various aspects of data handling. Topics include: persistent data formats; files and databases; file manipulation; binary and textual data; data processing using open source libraries; database design and use; object-relational mapping frameworks; processing and analysing data; issues of scale. Themes related to current research in the area of data science and big data are emphasised.				
Pre-requisite(s):	Before taking this module you must pass CS1002			
Anti-requisite(s)	You cannot take this module if you take CS2101			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 1 x 3-hour practical class.			
	Scheduled learning: 88 hours		**Guided independent study:** 112 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Re-assessment pattern:	Programming assignment = 100%			

CS1005 Computer Science in Everyday Life

SCOTCAT Credits:	20	SCQF level 7	**Semester**	1
Academic year:	2020-2021			
Planned timetable:	12.00 noon			
This module introduces key ideas of Computer Science through examination of the working of devices and services which are part of modern everyday life, such as search engines, health informatics, mobile computing and social networking sites. Students are led to develop an understanding of some fundamentals of Computer Science, as well as gaining transferable skills such as critical reading, research in the technical literature, data analysis and essay writing.				
Learning and teaching methods of delivery:	**Weekly contact**: 2hr x 10 weeks lectures, 1hr x 5 weeks discussion, 1hr x 9 weeks tutorial			
	Scheduled learning: 40 hours		**Guided independent study:** 160 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Re-assessment pattern:	Coursework assignment = 100%			
Module teaching staff:	TBC Module coordinator(s): First Level Coordinator - Computer Science (first-coord-cs@st-andrews.ac.uk)			

CS1006 Programming Projects

SCOTCAT Credits:	20	SCQF level 7	**Semester**	2
Academic year:	2020-2021			
Planned timetable:	11.00 am			
This module reinforces key Java programming skills gained in CS1002, by means of a series of coursework assignments posed as mini-projects. These are designed to offer increasing depth and scope for creativity as the module progresses.				
Pre-requisite(s):	Before taking this module you must pass CS1002			
Learning and teaching methods of delivery:	**Weekly contact**: 1h x 5 weeks lectures, 1hr x 6 weeks tutorials, 2.5hr x 11 weeks demonstration sessions			
	Scheduled learning: 83 hours		**Guided independent study:** 117 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Re-assessment pattern:	No Re-assessment available			
Module teaching staff:	TBC Module coordinator(s): First Level Coordinator - Computer Science (first-coord-cs@st-andrews.ac.uk)			

CS2001 Foundations of Computation

SCOTCAT Credits:	30	SCQF level 8	**Semester**	1
Academic year:	2020-2021			
Planned timetable:	9.00 am			
This module introduces fundamental algorithms, data structures and formal language concepts at the heart of modern software, and develops skills in programming and analysis.				
Pre-requisite(s):	Before taking this module you must pass CS1002 and pass CS1003			
Anti-requisite(s)	You cannot take this module if you take CS2101			
Learning and teaching methods of delivery:	**Weekly contact**: 2hr x 10 weeks lectures, 2hr x 10 weeks discussion, 1hr x 9 weeks tutorial			
	Scheduled learning: 110 hours		**Guided independent study:** 190 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Continual Assessment = 60%, 48-hour Assessment = 40%			
Re-assessment pattern:	Existing Continual Assessment = 60%, 48-hour Assessment = 40%			
Module teaching staff:	TBC Module coordinator(s): Second Level Coordinator - Computer Science (second-coord-cs@st-andrews.ac.uk)			

CS2002 Computer Systems

SCOTCAT Credits:	30	SCQF level 8	**Semester**	2
Academic year:	2020-2021			
Planned timetable:	9.00 am			
This module develops skills in programming in C, systems programming, digital logic and low-level computer organisation.				
Pre-requisite(s):	Before taking this module you must pass CS2001 or pass CS2101			
Learning and teaching methods of delivery:	**Weekly contact**: 2hr x 11 weeks lectures, 2hr x 11 weeks discussion, 1hr x 10 weeks tutorial			
	Scheduled learning: 121 hours		**Guided independent study:** 179 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Continual Assessment = 60%, 48-hour Assessment = 40%			
Re-assessment pattern:	Existing Continual Assessment = 60%, 48-hour Assessment = 40%			
Module teaching staff:	TBC Module coordinator(s): Second Level Coordinator - Computer Science (second-coord-cs@st-andrews.ac.uk)			

CS2003 The Internet and the Web: Concepts and Programming

SCOTCAT Credits:	30	SCQF level 8	**Semester**	1
Academic year:	2020-2021			
Planned timetable:	11.00 am			
This module introduces the student to the Internet and the World Wide Web from a Computer Science perspective. It consists of two complementary streams: computer networks and web-based computing. Both streams introduce key concepts, current technologies, programming abstractions and the practical aspects of developing web-based and network applications.				
Co-requisite(s):	You must also take CS2001 or take CS2101			
Learning and teaching methods of delivery:	**Weekly contact**: 2hr x 10 weeks lectures, 1hr x 10 weeks discussion, 1hr x 9 weeks tutorial, 1hr x 10 weeks exercise class			
	Scheduled learning: 110 hours		**Guided independent study:** 190 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Continual Assessment = 60%, 48-hour Assessment = 40%			
Re-assessment pattern:	Existing Continual Assessment = 60%, 48-hour Assessment = 40%			

CS2006 Advanced Programming Projects

SCOTCAT Credits:	30	SCQF level 8	**Semester**	2
Academic year:	2020-2021			
Availability restrictions:	Only available to 2nd Year students.			
Planned timetable:	11.00 am			
This module introduces the functional and dynamic programming paradigms, using languages such as Haskell and Python. Understanding is reinforced through extensive practical exercises.				
Pre-requisite(s):	Before taking this module you must pass CS2001 or pass CS2101			
Learning and teaching methods of delivery:	**Weekly contact**: 4 lectures, 1 tutorial and 2 x 3-hour practical classes.			
	Scheduled learning: 121 hours		**Guided independent study:** 179 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Coursework = 100%			
Re-assessment pattern:	No Re-assessment available			
Module teaching staff:	TBC Module coordinator(s): Second Level Coordinator - Computer Science (second-coord-cs@st-andrews.ac.uk)			

CS2101 Foundations of Computation (Accelerated)				
SCOTCAT Credits:	40	SCQF level 8	**Semester**	1
Academic year:	2020-2021			
Availability restrictions:	Available only to direct second year entrants.			
Planned timetable:	To be arranged.			
This module is an accelerated version of CS2001. It includes necessary background material from core first-year modules, as well as the same content as CS2001.				
Anti-requisite(s)	You cannot take this module if you take CS1002 or take CS1003 or take CS2001			
Learning and teaching methods of delivery:	**Weekly contact**: 2hr x 10 weeks lectures, 2hr x 10 weeks discussion, 3 x 1hr x 9 weeks tutorials			
	Scheduled learning: 160 hours		**Guided independent study:** 240 hours	
Assessment pattern:	**As defined by QAA:** Written Examinations = 0%, Practical Examinations = 0%, Coursework = 100%			
	As used by St Andrews: Continual Assessment = 60%, 48-hour Assessment = 40%			
Re-assessment pattern:	Existing Continual Assessment = 60%, 48-hour Assessment = 40%			
Module teaching staff:	TBC Module coordinator(s): Second Level Coordinator - Computer Science (second-coord-cs@st-andrews.ac.uk)			