INFORMATION SECURITY GROUP

Course Specification 2013-14

Code:	IY5607	**Course Value:**	20 credits	**Status:**	Option
Title:	**Software Security**			**Availability:**	Spring Term
Prerequisites:	Programming Experience (preferably C/C++)			**Recommended:**	Operating Systems, Computer Architecture, Computer Networks
Co-ordinator:	Lorenzo Cavallaro				
Course Staff	Lorenzo Cavallaro				
Aims:	This course will: • identify and exploit the software vulnerabilities that can be introduced into programs through language features and poor programming practice; • discuss the countermeasures that can mitigate the exploitation of such software vulnerabilities; • introduce (briefly) malicious software (malware) as a typical consequence of a successful software exploitation, nowadays; • provide pointers to/discuss academic and/or industry research-oriented publications on the subject.				
Learning Outcomes:	On successful completion of this module students will be able to: • explain the importance of security in the development of applications • be able to identify poor programming practice and to show how those can be exploited to lead to catastrophic security breaches; • understand the threat posed by malicious software • have a critical appreciation of some of the newer research trends that are likely to influence software security work in the coming years				
Course Content:	• Software vulnerabilities and hands-on hacking-oriented attacks • memory errors • web • network (depending on the available time) • Countermeasures • Malicious software • Pointers to research papers				
Teaching & Learning Methods	• Eleven three-hour presentations • Questionnaires and exercise sheets • Pre-examination tutorial • Module web site contains materials and details of sources for further study				
Key Bibliography:	*Slides, publications, and resources provided throughout the module*				
Formative Assessment and Feedback:	A number of additional hands-on hacking-oriented challenges will be suggested throughout the module.				
Summative Assessment:	**Coursework** 40%. A number of assignments must be submitted, each consisting of a set of challenges of increasing difficulty. After submission, students might be asked to explain how they arrive at their results. **Exam** 60% This course is also assessed by a two-hour written examination (3 out of 5 questions). **Deadlines:** The coursework deadlines will be announced during the first lecture of the course; the written examination will be held in the Summer term.				

The information contained in this course outline is correct at the time of publication, but may be subject to change as part of the Department's policy of continuous improvement and development. Every effort will be made to notify you of any such changes.