INFORMATION SECURITY GROUP
Course Specification 2013-14

Code:	IY5612	Course Value:	0.5	Status:	Option
Title:	**Cyber Security**			**Availability:**	Spring Term
Prerequisites:	None			**Recommended:**	None
Co-ordinator:	Stephen Wolthusen				
Course Staff	Stephen Wolthusen, Ian McKinnon and Stephen Marsh				
Aims:	The objective of this module is to develop an understanding of advanced adversaries and threats to information systems, and particularly the interaction of information with physical systems at scales ranging from embedded and industrial control systems up to critical infrastructures at national and supra-national scales. The module also aims to impart an understanding of assurance mechanisms for both the development and operation of security-sensitive and other high-integrity systems.				
Learning Outcomes:	On successful completion of the course students will be able to: • Have an understanding of network robustness and failures, together with key underlying theoretical concepts • Understand critical (information) infrastructures, vulnerabilities, and their dependencies • Appreciate the specific security problems of cyber-physical including SCADA systems and selected infrastructure • Understand complex attacks, analytical models for such attacks, and assurance mechanisms				
Course Content:	The course will cover the following topics: • Week 1: Introduction • Week 2: Networks and dependencies • Week 3: Critical infrastructures and interdependencies • Week 4: Security of Cyber-Physical Systems • Week 5: Control systems security • Week 6: Advanced persistent threats • Week 7: Attack modelling techniques • Week 8: System assurance • Week 9: Incident response mechanisms • Week 10: Offensive cyber operations • Week 11: Future challenges				
Teaching & Learning Methods	Lectures, exercise sheets (including formative feedback), tutorials				
Key Bibliography:	J Lopez, R Setola, S Wolthusen (eds.) *Critical Information Infrastructures* Vol. 7130 of Lecture Notes in Computer Science. Springer-Verlag, 2012 (to appear)				
Formative Assessment and Feedback:	Two of the exercise sheets will be marked and provided to students as formative feedback.				
Summative Assessment:	**Exam** 100(%) This course is assessed solely by written examination consisting of a two-hour-exam. *(3 out of 5 questions)* **Coursework** 0(%) Coursework does not contribute to the final assessment for this course. **Deadlines:** 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.