

School of Informatics Teaching Course Proposal Form

This version was generated **April 27, 2018**. User 'vzikas@inf.ed.ac.uk' verified.

Proposal

Course Name: Advanced Topics in Cybersecurity and Privacy
Proposer's Name: Vassilis Zikas
Email Address: vzikas@inf.ed.ac.uk
Course Year: 1
Names of any courses that this new course replaces :

Course Outline

Course Level: 11
Course Points: 10
Subject area: Informatics
Programme Collections:

Teaching / Assessment

Number of Lectures: 18
Number of Tutorials / Lab Sessions: 0
Identified Pre-requisite Courses: Research Methods in Security, Privacy & Trust
Identified Co-requisite Courses:
Identified Prohibited Combinations:

Assessment Weightings:

Written Examination: 0%
Assessed Coursework: 50%
Oral Presentations: 50%

Description of Nature of Assessment:

For each presented paper, the class will be given a coursework to assess, in a structured report, both the quality of the paper and the quality of the presentation. In particular, the students will produce a summary of the results covered in the paper/talk and identify the key components. They will also assess the quality of the presentation answering questions like the following: Did the presenter(s) convey the main ideas in an understandable manner?

The quality of the report will be assessed by the instructor. Furthermore, for each presentation, a weighted sum of the peer-reviews by the class (50%) and the instructors assessment (50%) of the quality of the presentation will determine the grade of the paper presentation.

Course Details

Brief Course Description:

Security and Privacy are rapidly moving areas. To equip our Masters students with the most updated knowledge in this area, we are proposing a course that will focus on active research areas in security and

privacy. A variety of topics from the following areas will be covered: Cryptography Systems and Network Security Usable Security Protocol Verification Anonymity and Privacy Cryptocurrencies Quantum Security Language-based security and formal verification Malware analysis, reverse engineering and exploit generation Trusted and secure computing Machine learning and cybersecurity Side channel attacks

The class will be taught by different staff and the above list might be enriched according to the expertise of the teaching faculty. The topics covered in each term will be made available at the course main page.

Each session will consist of two to three sections that will cover a subset of the above topics. Covered topics will include recent developments and milestones in the theoretical and the practical/applications literature on the above areas. The class will consist of preparatory sessions by the course instructor followed by presentation of selected papers by the course participants. This is an advanced course which builds on the knowledge gained from the course Research Methods in Security, Privacy & Trust taught in the first semester of the Masters program, and expand on this knowledge in the selected areas.

Detailed list of Learning Objectives:

- 1: Advanced understanding of state-of-the-art research on the selected topics
- 2: Ability to read and discuss research papers in security and privacy
- 3: Ability to present a research paper to an audience that has the basic knowledge on the papers topic
- 4: Ability to assess the quality of a paper---and write a review---and the quality of the presentations on the topics covered

Syllabus Information:

Recommended Reading List:

The reading material will include the research papers selected by the instructor along with parts from standard textbooks on these topics.

Any additional case for support information: