

2012

**COURSE OUTLINE FOR
COSC 407**

Wireless and Mobile Network Security

Course Supervisor: Ray Hunt

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1. OBJECTIVES OF THE COURSE

This course is designed to build on the work of COSC331/COSC264 and COSC332 which are strongly recommended preparation. It is one of the papers which can be taken for the Post Graduate Diploma in Computer Security and Forensics as well as for Honours or Masters (Part 1). This course is intended to provide students with an understanding of the architecture, risks, vulnerabilities and penetration testing techniques in the use of mobile and wireless networks. There is a strong practical component and students will undertake laboratory work which includes penetration testing of IEEE802.11 and Bluetooth wireless networks.

2. COURSE CONTENT

There are three key components to this course:

1. A series of lectures which address the following topics:
 - Security in wireless and mobile environments (security principles, security architectures, security mechanisms, security protocols)
 - Security in Wireless Local Area Networks (IEEE 802.11x)
 - Security in Mobile Telecommunications (GSM and UMTS)
 - Security in Personal Area Networks (including Bluetooth)
 - Security in Metropolitan Wireless Access Networks
2. A series of laboratories in which penetration testing attacks are carried out on Wireless Local Area Networks and Bluetooth networks.
3. A project in which penetration testing techniques are evaluated in systems such as Android and others.

3. ASSESSMENT

This course will be assessed with a laboratory report, an assignment and an examination. The laboratory report will specifically follow a set of penetration testing experiments which will be carried out in Lab 3 at times to be arranged. With respect to the assignment, careful attention needs to be paid to the design, structure, language and grammar of the assignment. It is necessary for you to get approval of the topic of this report from the lecturer before commencing this assignment. This is done by submitting a title and abstract. This assignment needs to be ~5000 words plus diagrams and references.

Laboratory report due Friday 30 March 2012 (25% of course)

Assignment due Friday 18 May 2012 (25% of course)

Examination (2 hours) date to be advised (50% of course)

4. TEACHING ARRANGEMENTS

Lectures and labs (two hours per week) for the first term will commence Monday 19 February and finish Friday 30 March 2012. Lectures for the second term will commence on 23 April finishing on 25 May 2012.