Week 1: Course Introduction

Securing Fixed and Wireless Networks, COMP4337/9337

Never Stand Still

Professor Sanjay K. Jha

School of Computer Science and Engineering, UNSW

Course Overview

LIC: Professor Sanjay Jha

Sanjay K. Jha is a Professor, and director of the Cybersecurity and Privacy Lab at the University of New South Wales. Sanjay holds a Ph.D. degree from the University of Technology, Sydney, Australia. Sanjay has published over 300 articles in high quality journals and conferences.

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(mark Attn: LIC if you want a response from me on certain matters)

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Tutor & Course Admin

Uzma Maroof

PhD Candidate

Networked Systems and Security Group & CySPri Lab

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PhD Candidate

Networked Systems and Security Group & CySPri Lab

Networks Research Group

All class related inquiries which doesn't require privacy, should be sent to the following email (private emails to staff will not be attended)

Email: eng.cse.comp4337@unsw.edu.au

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Today's Agenda

Part 1

- Introduction to Administrative Matters

Part 2

- What is this course about?

- Introduction to Fixed and Wireless Networks and Security Challenges

- Introduction to Wireless Networks (some revision from 3331/9331 in WLAN)

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Lecture and Lab Schedules

COMP4337		Securing Fixed & Wireless Netw					
CRS	CR01	1997		Open	0/0	N/A	(Course Enrolment, UGRD)
LAB	F14A	7511	Enr	Full	2/2	100%	Tue 14-16 (w11, LyreK17G12); Fri 14-16 (w1-7,9-10, LyreK17G12) Comb/w COMP9337-PGRD
LAB	F16A	7512	Enr	Open	11/12	92%	Tue 16-18 (w11, LyreK17G12); Fri 16-18 (w1-7,9-10, LyreK17G12) Comb/w COMP9337-PGRD
LAB	H09A	11717	Enr	Open	5/11 [20]	45%	Thu 09-11 (w1-10, LyreK17G12) Comb/w COMP9337-PGRD
LAB	H13A	7510	Enr	Full	6/6 [8]	100%	Thu 13-15 (w1-10, LyreK17G12) Comb/w COMP9337-PGRD
LAB	W12	11716	Enr	Open	10/11 [20]	91%	Wed 12-14 (w1-10, KoraME307) Comb/w COMP9337-PGRD
LAB	W14A	7513	Enr	Full	8/8 [20]	100%	Wed 14-16 (w1-10, LyreK17G12) Comb/w COMP9337-PGRD
LEC	1UGA	7509	Rel	Full	42/42	100%	Tue 12-14 (w11, CLB 5); Tue 16-18 (w1-10, CLB 5); Fri 12-14 (w1-7,9-10, CLB 5) Comb/w COMP9337-PGRD

COMP9337		Securing Fixed & Wireless Netw					
CRS	CR01	1078		Full	1/1	100%	(Course Enrolment, PGRD)
LAB	F14A	7516	Enr	Open	17/18 [20]	94%	Tue 14-16 (w11, LyreK17G12); Fri 14-16 (w1-7,9-10, LyreK17G12) Comb/w COMP4337-UGRD
LAB	F16A	7517	Enr	Open	8/9 [20]	89%	Tue 16-18 (w11, LyreK17G12); Fri 16-18 (w1-7,9-10, LyreK17G12) Comb/w COMP4337-UGRD
LAB	H09A	11718	Enr	Open	9/15 [20]	60%	Thu 09-11 (w1-10, LyreK17G12) Comb/w COMP4337-UGRD
LAB	H13A	7515	Enr	Full	14/14 [20]	100%	Thu 13-15 (w1-10, LyreK17G12) Comb/w COMP4337-UGRD
LAB	W12A	11715	Enr	Open	9/10 [20]	90%	Wed 12-14 (w1-10, KoraME307) Comb/w COMP4337-UGRD
LAB	W14A	7518	Enr	Full	12/12 [20]	100%	Wed 14-16 (w1-10, LyreK17G12) Comb/w COMP4337-UGRD
LEC	1PGA	7514	Rel	Open	69/70	99%	Tue 12-14 (w11, CLB 5); Tue 16-18 (w1-10, CLB 5); Fri 12-14 (w1-7,9-10, CLB 5) Comb/w COMP4337-UGRD

Tip: to find your way around campus, download:

Lost On Campus by StudentVIP 17+
Aus. #1 app for uni students
Student Services Australia

#3 in Navigation
★★★★☆ 20 Ratings
Free

Download on the App Store

ANDROID APP ON Google play

Teaching Strategies

- Lectures
- Labs
  - Hands-on learning
  - Homework self-guided
- Project
  - Programming/Report/Demo/Analysis of Network Security (TBA)
- Sample Problems (no formal tutorials)
  - U will gain problem solving skills

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Lectures

- Go beyond the text book
  - Latest in R&D
  - Advanced concepts -links will be provided

- Down side (is it ??)
  - Certain material will be left for self-study
  - These will be indicated on the lecture notes, related text sections will be pointed to you

Note: *Self-study and additional material (as indicated by LIC) is all examinable*

- Please ask questions if needed

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Labs

Tell me and I forget

Show me and I remember

Involve me and I understand

- Chinese Proverb

- 2 hour lab sessions starting Week2 (see notice)
- Hands-on experiments related to concepts that you learn in lectures
- Will use Wireshark and other tools: more in labs
- Schedule will be posted on the course web page, you will receive instructions on group formation (max-2) – tried to find a partner that you can work with.

- LIC's Consultations (By Appointment)
  - LIC will be available after lectures as well.
- WebCMS has community interaction (forums)
  - LIC and TAs will monitor and try to help when possible.
- Basic set of rules
  - Do not post code/program/script fragments
  - TAs cannot provide final solutions
  - Common courtesy
  - Details posted for each forum. Please read them.

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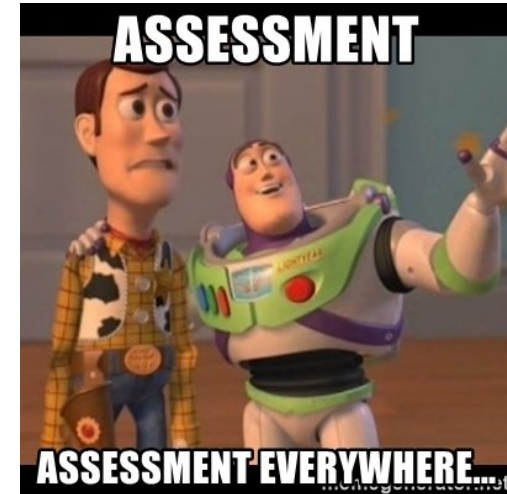
Assessment

- Lab Assessments (20 marks)
- Project, Research (20 marks)
- Quiz/homework/Activities (20 Marks)
- Final Exam (40 Marks)

Double pass applies: Read course outline.

No Plagiarism, We are **serious.** Please read policy in course outline.
We are using plagiarism tools such as Turinitin for written reports.

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Part 2

Securing Fixed and Wireless Networks

- This year, the course title has changed to included Fixed Network Security, some content will be adjusted though we taught both in previous years too.

- We assume that you have learnt basics of networking and various architectures in COMP3331/9331. No prior security course is assumed. We may review a few things to put security in context.

- If you have learnt most of these topics, please consider taking another elective. We have limited space and there are students in wait list.

What Is This Course About ?

- Threats, vulnerabilities, and security countermeasures of existing and upcoming fixed and wireless networks.

- Security topics include a wide range of mainstream fixed Internet and wireless technologies, including WLAN, VANETS and WSN, IoT.

  – Mobile/Cellular Security a big area, we may have a quick glimpse.

- We will be taking a systems approach, the course is very much PROTOCOL centric.

- Study crypto primitives and protocols applicable to wireless & Wired networks.

- Learn practice of security in networks

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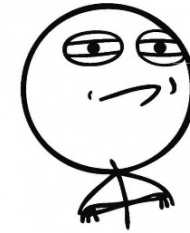
- We have good plans but we expect your cooperation and patience this session.
  - We learnt a few things from last session would be making changes this session (no mandatory attendance but a lot of learning happens in class, more class interactions – needs multi-party communication, quicker feedback on quizzes, guest lectures to be spread out not towards the end – but this is subject to availability and also helps if you know the basics)
- Your ideas/feedback on continual improvement is welcome. (no need to wait for end of the session survey)
  - Additionally, there may be another feedback survey through Moodle.

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WRONG WAY – Please Exit?

- This is not about "WEB SECURITY"
- This is not about Android/MacOS or " OS Security"
- This is not about "Maths Crypto"
- This is not about "AI Techniques to Security"
  - May offer research topics related to networking security though
- Please outline and if this does't match your expectations, please make room for other students in the waitlist
  - We find it very disappointing to see such remarks in myExperience surveys despite early warnings.

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