Week 1: Course Introduction

Securing 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 250 articles in high quality journals and conferences.

Webpage: *www.cse.unsw.edu.au/~sanjay*

Read about CySpri lab at: *http://cyspri.web.cse.unsw.edu.au/*

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Tutor & Course Admin

Uzma Maroof

PhD Candidate

Networked Systems and Security Group & CySPri Lab

Networks Research Group

Rizka Purwanto

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

Today's Agenda

Part 1

- Introduction to Administrative Matters

Part 2

- What is this course about?
- Introduction to Wireless Networks and Security Challenges
- Introduction to Wireless Networks (some revision from 3331/9331 in WLAN)

Lecture and Lab Schedules

CRS	CR01	2951		Full	2/2	100%	(Course Enrolment,)
LAB	H14A	7059	Enr	Full	5/5 [20]	100%	Tue 14-16 (w11, LyreK17G12); Thu 14-16 (w1-9, LyreK17G12) Comb/w COMP9337-PGRD
LAB	M16A	7060	Enr	Open	4/9 [20]	44%	Mon 16-18 (w1-9,11, LyreK17G12) Comb/w COMP9337-PGRD
LAB	T14A	7061	Enr	Full	9/9 [20]	100%	Tue 14-16 (w1-10, LyreK17G12) Comb/w COMP9337-PGRD
LAB	W14A	7062	Enr	Full	7/7 [20]	100%	Wed 14-16 (w1-10, LyreK17G12) Comb/w COMP9337-PGRD
LAB	W16A	7063	Enr	Full	9/9 [20]	100%	Wed 16-18 (w1-10, LyreK17G12) Comb/w COMP9337-PGRD
COMP9337	**Securing Wireless Networks**						
CRS	CR01	1796		Full	2/2	100%	(Course Enrolment,)
LAB	H14A	7065	Enr	Full	15/15 [20]	100%	Tue 14-16 (w11, LyreK17G12); Thu 14-16 (w1-9, LyreK17G12) Comb/w COMP4337-UGRD
LAB	M16A	7066	Enr	Open	11/16 [20]	69%	Mon 16-18 (w1-9,11, LyreK17G12) Comb/w COMP4337-UGRD
LAB	T14A	7067	Enr	Full	11/11 [20]	100%	Tue 14-16 (w1-10, LyreK17G12) Comb/w COMP4337-UGRD
LAB	W14A	7068	Enr	Full	13/13 [20]	100%	Wed 14-16 (w1-10, LyreK17G12) Comb/w COMP4337-UGRD
LAB	W16A	7069	Enr	Full	11/11 [20]	100%	Wed 16-18 (w1-10, LyreK17G12) Comb/w COMP4337-UGRD
LEC	1PGA	7064	Rel	Open	61/63	97%	Tue 16-18 (w11, OMB 230); Wed 12-14 (w1-10, OMB 229); Thu 16-18 (w1-9, OMB 230) Comb/w COMP4337-UGRD

Total: 90

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

Enrolment accurate as of 11.02.2019

Learning Platform is Moodle.

The World's Most Popular Learning Platform

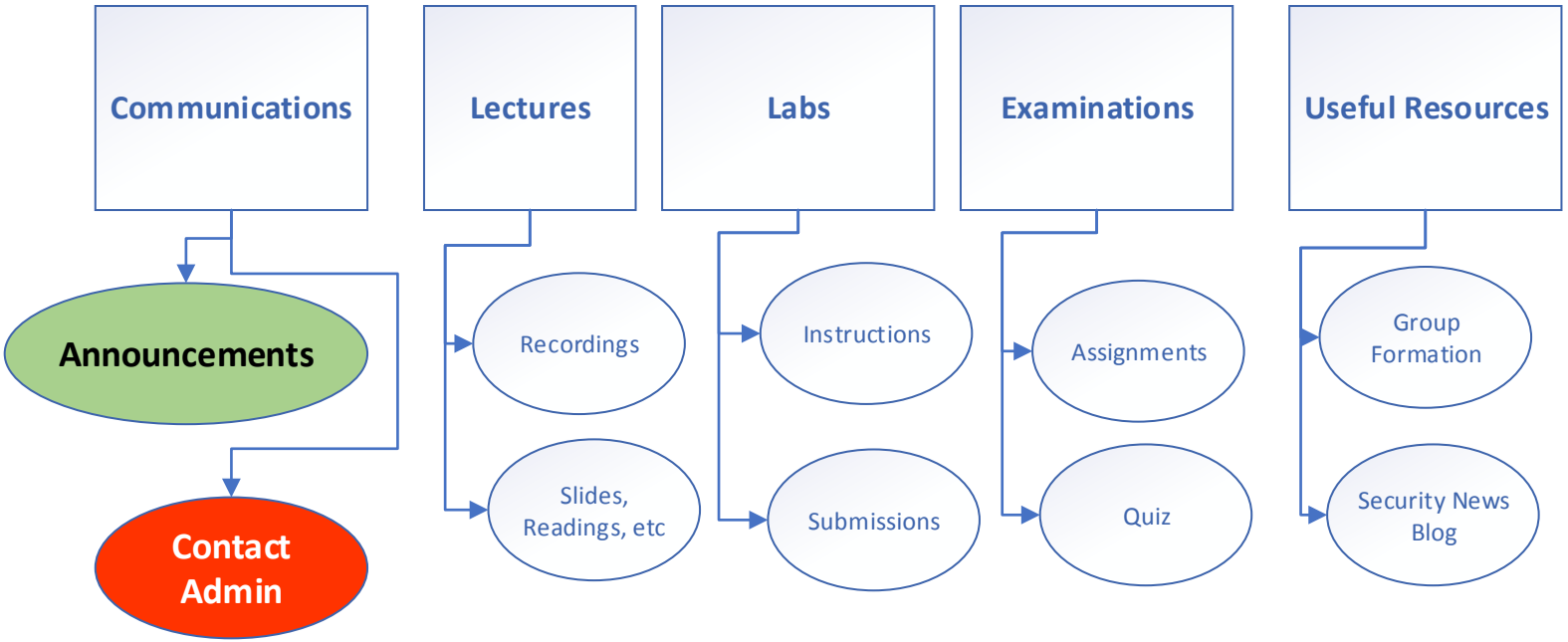
124,057,970 +

REGISTERED USERS

- Translated to over 100 languages!
- US universities have the highest number of registrants. The most commonly used LMS in UK and EU.
- Known for being: Opensource, easy-to-use, stable, and mobile compatible.
- Majority of UNSW courses delivered through UNSW's Moodle deployment.

What's on Moodle?

- **Everything** ☺!!



Enrolling on Moodle

- This is done centrally by UNSW.
- The course staff, including LIC, have no control. Please do not send the course staff emails about this.
  - Best suggestion? Contact: Engineering Support and Services who know how to deal with most queries
  - Email: ENG.SSS@unsw.edu.au

Forums, and other resources

Class Announcements

Important news and announcements about COMP4337/9337. Students must check this page frequently throughout the semester.

Caution : missing out on announcements is not an acceptable excuse under any circumstances!

Technical Questions Forum

This forum enables students to ask questions and to seek advice from peers and course staff regarding technical subjects taught in this course. The course staff monitors questions and answers posted on this page every Wednesday and Friday **ONLY**.

Strict Deadline Policy: This course contains assignments, quiz, and a final exam. A strict deadline policy applies for support received by the course staff on the form. For instance, if Assignment **1** is due on a Wednesday in March 2018, the last day that the course staff will attend to technical questions related to Assignment **1** is the preceding Friday. There will be no exception to this policy.

Tutor Consultation Policy: Tutors are not authorized to provide the final solution to questions/tasks/activities. Tutors may only provide suggestions/recommendations. Tutors are advanced level students who will do their best to assist the best way the can. Please consult with LIC, Prof. Sanjay Jha, during the lecture times for any ambiguities. Tutors have no authority on marking.

Content Policy: Students may not share solutions in this forum. This will be regarded as a violation of course policy and will be dealt with according to the school's plagiarism policies.

Subscription: Students are encouraged to subscribe to this page so they get notifications.

Resources

The Security News Blog

Disability Support, and Special Consideration

Disability Support

Important: All students who have an approved letter from the University Disability Services, must submit their letter through this link. **NO Email about this is required or accepted**. You will receive a confirmation as a reply to confirm that your SEADU arrangements will be in place throughout the session. Please allow up to 72 hours after you submit your document to receive the confirmation email.

See: https://student.unsw.edu.au/disability-contacts for more information about UNSW Disability Support service.

Special Consideration

You can apply for special consideration when illness or other circumstances beyond your control, interfere with your assessment performance.

Sickness, misadventure or other circumstances beyond your control may:

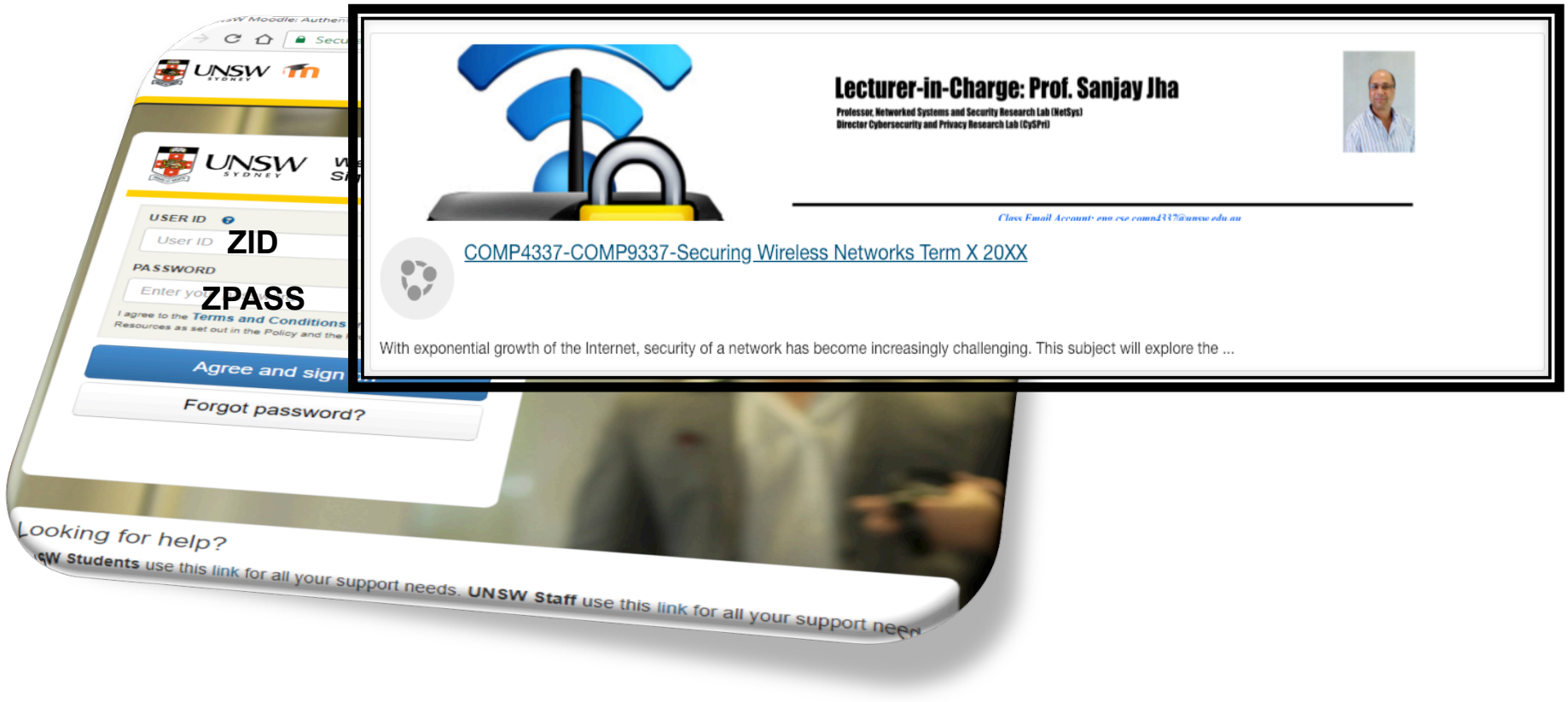
- Prevent you from completing a course requirement,
- Keep you from attending an assessable activity,
- Stop you submitting assessable work for a course,
- Significantly affect your performance in assessable work, be it a formal end-of-semester examination, a class test, a laboratory test, a seminar presentation or any other form of assessment.

All Special Consideration requests have to come from the central system. Hence, please refer to this link and follow the instructions. Your LIC will decide as per documents you provide there. **Email requests** about **special consideration sent to course admin and LIC will not be attended to.**

Accessing Moodle - 1

Link: https://moodle.telt.unsw.edu.au/login/index.php

Try to login now.



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

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

Labs

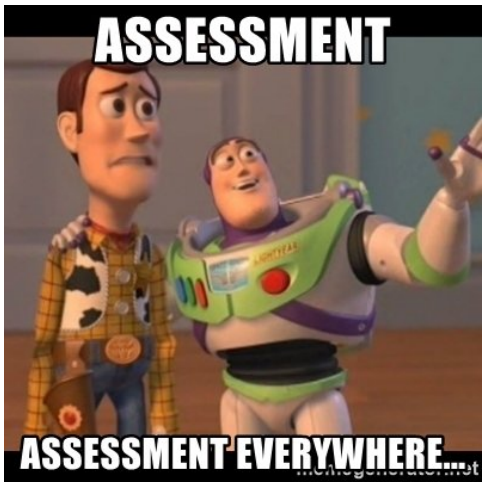
Tell me and I forget
Show me and I remember
Involve me and I understand
- Chinese Proverb

- 2 hour lab sessions starting date TBA (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.
- Moodle has community interaction (forums)
  - LIC and TAs will monitor and try to help when possible.
  - There is a deadline for support for topics in Forums (see Moodle)

- 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.

Assessment



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

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

Part 2

Challenges in Wireless Network Security

- Wireless Networks are Unique
  - Broadcast Media/Channel: easy to eavesdrop on, jam, overuse
  - Mobile Users: can't be stopped via traditional firewall
    - Can roam across networks.
- Standard Security requirements remains the same:
  - authentication, confidentiality, integrity, availability
- Large number of Mobile devices:
  - Limited resources
  - Can be lost/stolen: Lack of physical protection
- Location privacy:
  - Good if you wish rescue in emergency
  - However, easy to be tracked !

What Is This Course About ?

- Threats, vulnerabilities, and security countermeasures of existing and upcoming wireless networks.
- Security topics include a wide range of mainstream 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.
- Study crypto primitives and protocols applicable to wireless networks.
- Learn practice of security in wireless networks

- 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 (e.g. more hands on work lab/project, more class interactions – needs multi-party communication.)
- 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.