TELE9781

Special Topics in Telecommunications 1

Term 2, 2022

Course Overview

Staff Contact Details

Convenors

Name	Email	Availability	Location	Phone
Guo Chen	guo.chen@unsw.edu.au	Monday-Friday	EE306	

School Contact Information

Consultations: Lecturer consultation times will be advised during the first lecture. You are welcome to email the tutor or laboratory demonstrator, who can answer your questions on this course and can also provide you with consultation times. ALL email enquiries should be made from your student email address with ELEC/TELExxxx in the subject line; otherwise they will not be answered.

Keeping Informed: Announcements may be made during classes, via email (to your student email address) and/or via online learning and teaching platforms – in this course, we will use Moodle https://moodle.telt.unsw.edu.au/login/index.php. **Please note that you will be deemed to have received this information, so you should take careful note of all announcements.**

Student Support Enquiries

For enrolment and progression enquiries please contact Student Services

Web

Electrical Engineering Homepage

Engineering Student Support Services

Engineering Industrial Training

UNSW Study Abroad and Exchange (for inbound students)

UNSW Future Students

Phone

(+61 2) 9385 8500 – Nucleus Student Hub

(+61 2) 9385 7661 – Engineering Industrial Training

(+61 2) 9385 3179 – UNSW Study Abroad and UNSW Exchange (for inbound students)

Email

Engineering Student Support Services – current student enquiries

- e.g. enrolment, progression, clash requests, course issues or program-related queries

Engineering Industrial Training – Industrial training questions

UNSW Study Abroad – study abroad student enquiries (for inbound students)

UNSW Exchange – student exchange enquiries (for inbound students)

UNSW Future Students – potential student enquiries

- e.g. admissions, fees, programs, credit transfer

Course Details

Units of Credit 6

Summary of the Course

This is an elective course at the graduate level, covering some special or advanced topics in telecommunications of particular interests or needs at the time. The course content varies with the changing topics.

Course Aims

The course aims to expose students to some selected topics of special interest such as new emerging areas of technological advances or industry practices in the field of telecommunications.

Course Learning Outcomes

1. After successful completion of this course, students will gain a sound technical knowledge of the specific advanced telecommunications topics covered in this course.

1. Understand networking fundamentals, design and implement functional networks for small and medium-sized businesses to include IP addressing, IP routing, switching, DHCP, NAT, and so on.

2. Understand storage fundamentals, design and implement storage solutions for small and medium-sized businesses to include RAID, storage networking, software-defined storage, and so on.

3. Understand virtualisation fundamentals, design and implement virtualisation solutions for small and medium-sized businesses to include virtual computing, virtual networking and virtual storage.

Engineers Australia (EA) Professional Engineer Stage 1 Competency Standards

Learning Outcome 1	PE1.1, 1.2, 2.1, 2.2, 2.3, 3.2
Learning Outcome 2	PE1.1, 1.2, 1.3, 2.2, 3.2, 3.6
Learning Outcome 3	PE1.1, 1.3, 2.1, 2.2, 2.3, 3.2, 3.6

Teaching Strategies

The teaching in this course aims at establishing an advanced understanding of the areas covered. The course delivery is primarily built on the formal lectures, some lectures involve student participation by giving them topics to research and present.

Additional Course Information

Context and Aims

A solid IT infrastructure is a vital part of any modern business, allowing an organisation to effectively communicate both internally and externally. Having the right infrastructure in place for business connectivity should be seen as a non-negotiable for any company. Nowadays, virtualization and cloud computing are no longer an option for enterprises but an imperative for survival. The cloud has dramatically changed the way IT infrastructure is built, utilised and managed. It has created new roles such as the cloud engineer and the cloud architect to lead this trend. This course will start with networking and storage as fundamentals, then focus on the technologies and skills required today to design, implement and manage cloud infrastructures to optimise business performance.

COURSE DETAILS

Credits

This is a 6 UoC course and the expected workload is 15 hours per week throughout the 10-week term.

Relationship to Other Courses

This is a postgraduate elective course in the School of Electrical Engineering and Telecommunications. It is an elective course for students who have a BE in Electrical, or Telecommunications or Computer and other combined degree programs.

Pre-requisites and Assumed Knowledge

There are no pre-requisites for this course but it would be very helpful to have basic understanding of networking technologies, for example: TCP/IP model, IP addressing, routing and switching.

Assessment

Assessment task	Weight	Due Date	Course Learning Outcomes Assessed
1. Final Result	100%	Not Applicable	1

Assessment 1: Final Result

The quiz 1 is scheduled in week 4; the quiz 2 is scheduled in week 7; and the quiz 3 is scheduled in week 10. The date of the final exam will be announced by the University. The quizzes and final exam are all based on the lecture and lab material

Assessment criteria

The assessments, i.e. quizzes 1-3 and final exam, are mainly based on multiple choice questions, short answer questions, and calculation questions. The weights are 15% (quiz 1), 15% (quiz 1), 15% (quiz 1), and 55% (final exam).

final result= quiz 1+ quiz 2+ quiz 3+final exam.

Pass>=50%

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

Course Schedule

Lectures	Day	Time	Location
Running Week1-10	Tuesday	18:00-21:00	Microsoft Teams Meeting

View class timetable

Timetable

Date	Type	Content
O-Week: 23 May - 27 May		
Week 1: 30 May - 3 June	Lecture	Introduction to enterprise IT infrastructure Networking fundamentals
	Laboratory	Lab for network fundamentals
Week 2: 6 June - 10 June	Lecture	IP addressing and subnetting IP routing
	Laboratory	Lab for IP address and subnetting, and IP routing
Week 3: 13 June - 17 June	Lecture	Switching technologies IP services
	Laboratory	Lab for switching technologies and IP services
Week 4: 20 June - 24 June	Lecture	Storage fundamentals
	Assessment	Quiz 1 based on the studies of Week 1-Week3
Week 5: 27 June - 1 July	Lecture	Storage networking
	Laboratory	Lab for storage networking
Week 6: 4 July - 8 July	Lecture	Software-defined storage
	Laboratory	Lab for software defined storage
Week 7: 11 July - 15 July	Lecture	Virtualisation and cloud fundamentals
	Assessment	Quiz 2 based on the studies of Week 4-Week 6

Week 8: 18 July - 22 July	Lecture	Virtual networking in the cloud
	Laboratory	Lab for virtual networking in the cloud
Week 9: 25 July - 29 July	Lecture	Virtual storage in the cloud
	Laboratory	Lab for virtual storage in the cloud
Week 10: 1 August - 5 August	Lecture	Technology trends in IT infrastructure industry and career prospect
	Assessment	Quiz 3 based on the studies of Week 7-Week 9

Resources

Prescribed Resources

The resources of course information (lecture and lab material) will be given on Moodle before the lecture time.

Recommended Resources

Textbooks

Prescribed textbook

• "Data Storage Networking", Nigel Poulton, Sybex

• "CompTIA Cloud+ Certification Study Guide, Second Edition (Exam CV0-002)", Scott Wilson, McGraw-Hill

On-line resources

Moodle

As a part of the teaching component, Moodle will be used to disseminate teaching materials, host forums and occasionally, quizzes. Assessment marks will also be made available via Moodle: https://moodle.telt.unsw.edu.au/login/index.php.

Course Evaluation and Development

Consultations: You are encouraged to ask questions on the course material, after the lecture class times in the first instance, rather than via email. All email enquiries should be made from your student email address with TELE9781 in the subject line; otherwise they will not be answered.

Laboratory Workshop Information

We will have seven Labs during T2. The details are as follows.

Week 1: Lab for network fundamentals
Week 2: Lab for IP address and subnetting, and IP routing
Week 3: Lab for switching technologies and IP services
Week 5: Lab for storage networking
Week 6: Lab for software defined storage
Week 8: Lab for virtual networking in the cloud
Week 9: Lab for virtual storage in the cloud

The lab material can be downloaded from Moodle.

Academic Honesty and Plagiarism

Academic Honesty and Plagiarism

Plagiarism is the unacknowledged use of other people's work, including the copying of assignment works and laboratory results from other students. Plagiarism is considered a form of academic misconduct, and the University has very strict rules that include some severe penalties. For UNSW policies, penalties and information to help you avoid plagiarism, see https://student.unsw.edu.au/plagiarism. To find out if you understand plagiarism correctly, try this short quiz: https://student.unsw.edu.au/plagiarism-quiz.

General Conduct and Behaviour

Consideration and respect for the needs of your fellow students and teaching staff is an expectation. Conduct which unduly disrupts or interferes with a class is not acceptable and students may be asked to leave the class.

Academic Information

COVID19 - Important Health Related Notice

Your health and the health of those in your class is critically important. You must stay at home if you are sick or have been advised to self-isolate by NSW health or government authorities. Current alerts and a list of hotspots can be found here. **You will not be penalised for missing a face-to-face activity due to illness or a requirement to self-isolate**. We will work with you to ensure continuity of learning during your isolation and have plans in place for you to catch up on any content or learning activities you may miss. Where this might not be possible, an application for fee remission may be discussed.

If you are required to self-isolate and/or need emotional or financial support, please contact the Nucleus: Student Hub. If you are unable to complete an assessment, or attend a class with an attendance or participation requirement, please let your teacher know and apply for special consideration through the Special Consideration portal. To advise the University of a positive COVID-19 test result or if you suspect you have COVID-19 and are being tested, please fill in this form.

UNSW requires all staff and students to follow NSW Health advice. Any failure to act in accordance with that advice may amount to a breach of the Student Code of Conduct. Please refer to the Safe Return to Campus guide for students for more information on safe practices.

Dates to note

Important Dates available at: https://student.unsw.edu.au/dates

Student Responsibilities and Conduct

Students are expected to be familiar with and adhere to all UNSW policies (see https://student.unsw.edu.au/policy), and particular attention is drawn to the following:

Workload

It is expected that you will spend at least **15 hours per week** studying a 6 UoC course, from Week 1 until the final assessment, including both formal classes and *independent, self-directed study*. In periods where you need to complete assignments or prepare for examinations, the workload may be greater. Over-commitment has been a common source of failure for many students. You should take the required workload into account when planning how to balance study with employment and other activities.

Attendance

Regular and punctual attendance at all classes is expected. UNSW regulations state that if students attend less than 80% of scheduled classes they may be refused final assessment.

Work Health and Safety

UNSW policy requires each person to work safely and responsibly, in order to avoid personal injury and to protect the safety of others.

Special Consideration and Supplementary Examinations

You must submit all assignments and attend all examinations scheduled for your course. You can apply for special consideration when illness or other circumstances beyond your control interfere with an assessment performance. If you need to submit an application for special consideration for an exam or assessment, you must submit the application **prior to the start** of the exam or before the assessment is submitted, except where illness or misadventure prevent you from doing so. Be aware of the "fit to sit/submit" rule which means that if you sit an exam or submit an assignment, you are declaring yourself well enough to do so and cannot later apply for Special Consideration. For more information and how to apply, see https://student.unsw.edu.au/special-consideration.

Administrative Matters

On issues and procedures regarding such matters as special needs, equity and diversity, occupational health and safety, enrolment, rights, and general expectations of students, please refer to the School and UNSW policies:

https://student.unsw.edu.au/guide

https://www.engineering.unsw.edu.au/electrical-engineering/resources

Disclaimer

This Course Outline sets out description of classes at the date the Course Outline is published. The nature of classes may change during the Term after the Course Outline is published. Moodle should be consulted for the up-to-date class descriptions. If there is any inconsistency in the description of activities between the University timetable and the Course Outline (as updated in Moodle), the description in the Course Outline/Moodle applies:

Image Credit

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Acknowledgement of Country

We acknowledge the Bedegal people who are the traditional custodians of the lands on which UNSW Kensington campus is located.