



# ELEC881

## Telecommunications Performance Management

S1 Day 2018

*Dept of Engineering*

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#### **Disclaimer**

Macquarie University has taken all reasonable measures to ensure the information in this publication is accurate and up-to-date. However, the information may change or become out-dated as a result of change in University policies, procedures or rules. The University reserves the right to make changes to any information in this publication without notice. Users of this publication are advised to check the website version of this publication [or the relevant faculty or department] before acting on any information in this publication.

## General Information

Unit convenor and teaching staff

Unit Convener

Robert Abbas

[robert.abbas@mq.edu.au](mailto:robert.abbas@mq.edu.au)

E6B Room 126

Mondays & Thursdays 3-4 PM

Credit points

4

Prerequisites

Admission to MEng

Corequisites

Co-badged status

Unit description

This unit will develop the knowledge of the modern and future Networks performance management and optimization analysis skills and gives an understanding of Key Performance Indicators Analysis of modern Communication Networks multi-layer multi-technology networks, QoS (Voice and Data all IP, E2E everywhere, any time) , Networks Accessibility, Retain ability, Mobility, Throughput, Integrity, O&M, Load balancing , Web Engineering Analysis.

## Important Academic Dates

Information about important academic dates including deadlines for withdrawing from units are available at <https://www.mq.edu.au/study/calendar-of-dates>

## Learning Outcomes

On successful completion of this unit, you will be able to:

Ability to describe the Information Communication Technology (ICT) networks such as internet networks, mobile networks concept 2G,3G and 4G networks, data centres, clouds, etc.) and end-to-end architecture.

Demonstrate hands-on learning key performance indicators for Information communications Technology networks, measurement and monitoring approach.

Ability to run daily routines and tasks for network operations, troubleshooting and network security.

Demonstrate competence in the information communication Technology network performance management, analysis and network tools.

Working ability to apply skills for group-based learning projects.

## **General Assessment Information**

Formal notification of assessment tasks, grading rubrics and due dates will be posted on iLearn. Although all reasonable measures are taken to ensure the information is accurate, The University reserves the right to make changes without notice. Each student is responsible for checking iLearn for changes and updates.

### **Report and Assignment Submissions**

In Class Test solutions will be posted within a week after the test date. Submissions will not be accepted once the solution is posted.

All reports and assignments must be submitted electronically through iLearn (in pdf format). Submissions will undergo plagiarism checkers using the turnitin software and any work deemed to have 20% or higher similarity score may incur academic penalty. For more details on the policies of academic penalties relating to academic honesty, please refer to the policies and procedures section below.

Submissions are expected to be typed set in a logical layout and sequence. The expected workload includes preparation of final copies and clear diagrams.

### **Late submissions**

Late submissions will not be accepted without prior arrangement made at least one week before the submission date. Extenuating circumstances will be considered upon lodgement of a formal notice of disruption of studies.

### **Grading and passing requirement for unit**

For further details about grading, please refer below in the policies and procedures section.

In order to pass this unit a student must obtain a mark of 50 or more for the unit (i.e. obtain a passing grade P/ CR/ D/ HD).

### **Student Responsibilities**

Be familiar with University policy and College procedures and act in accordance with those policy and procedures.

It is the responsibility of the student to retain a copy of any work submitted. Students must produce these documents upon request. Copies should be retained until the end of the grade appeal period each term.

Student is to perform the required due diligent for their assessment grade and rectify as soon as possible upon finding any errors.

## Assessment Tasks

Name	Weighting	Hurdle	Due
<a href="#"><u>Inclass Test 1</u></a>	20%	No	W4
<a href="#"><u>Inclass Test 2</u></a>	20%	No	W8
<a href="#"><u>Inclass Test 3</u></a>	20%	No	W12
<a href="#"><u>Group Project Report</u></a>	15%	No	W13
<a href="#"><u>Group based learning Research</u></a>	15%	No	W3,W6 ,W9
<a href="#"><u>Group research project PPT</u></a>	10%	No	W13

### Inclass Test 1

Due: **W4**

Weighting: **20%**

Inclass Test

On successful completion you will be able to:

- Ability to describe the Information Communication Technology (ICT) networks such as internet networks, mobile networks concept 2G,3G and 4G networks, data centres, clouds, etc.) and end-to-end architecture.

### Inclass Test 2

Due: **W8**

Weighting: **20%**

Inclass Test 2

On successful completion you will be able to:

- Demonstrate hands-on learning key performance indicators for Information communications Technology networks, measurement and monitoring approach.

### Inclass Test 3

Due: **W12**

Weighting: **20%**

In Classtest 3

On successful completion you will be able to:

- Demonstrate hands-on learning key performance indicators for Information communications Technology networks, measurement and monitoring approach.
- Ability to run daily routines and tasks for network operations, troubleshooting and network security.
- Demonstrate competence in the information communication Technology network performance management, analysis and network tools.

## Group Project Report

Due: **W13**

Weighting: **15%**

This report will be based on the findings of a research project that students will undertake. The project will be based on measurement of live network live data in order to analyse network performance measurements and key performance indicators (KPI).

Detailed guidelines and rubric will be provided on iLearn. 50% of the total marks for this assessment will be for individual work for each of the group member and 50% for the group work.

On successful completion you will be able to:

- Ability to describe the Information Communication Technology (ICT) networks such as internet networks, mobile networks concept 2G,3G and 4G networks, data centres, clouds, etc.) and end-to-end architecture.
- Demonstrate hands-on learning key performance indicators for Information communications Technology networks, measurement and monitoring approach.
- Ability to run daily routines and tasks for network operations, troubleshooting and network security.
- Demonstrate competence in the information communication Technology network performance management, analysis and network tools.
- Working ability to apply skills for group-based learning projects.

## Group based learning Research

Due: **W3,W6 ,W9**

Weighting: **15%**

Group based learning Research Project Progress check W3 :5%,W6:5% ,W9:5%

On successful completion you will be able to:

- Demonstrate hands-on learning key performance indicators for Information

communications Technology networks, measurement and monitoring approach.

- Ability to run daily routines and tasks for network operations, troubleshooting and network security.
- Demonstrate competence in the information communication Technology network performance management, analysis and network tools.
- Working ability to apply skills for group-based learning projects.

## Group research project PPT

Due: **W13**

Weighting: **10%**

Group research project Presentation

On successful completion you will be able to:

- Working ability to apply skills for group-based learning projects.

## Delivery and Resources

The aim of this unit is to enable the students to become job-ready and to have the skills which satisfy current and future ICT industry requirements.

Lectures will be interactive with students encouraged to participate and engage in discussions through Q&A, industry examples and scenarios, case studies, smart mobile applications, Problem solving and students presentations.

This unit will be taught from practice point of view, hands on measurements monitoring. and simulations. The unit will explore the current and future ICT networks architectures, services from the point of view of performance requirements and optimization as well as analysis.

Students will be required to carry out a Research project in form of group based learning utilising simulation, modelling or measurement of live data, in order to provide performance measurements and analysis of key performance indicators for ICT networks.

Unit will not use theoretical books it will have more lab and practical approach , Student are free to use and book or reference of their choices.

## Learning and Teaching Activities

### Lecturers f

Lecturers for ICT key performance indicators and fundamentals for Network Management and optimisation

### Group-based learning Project

Group based learning Project in any area of information communication technology Computer networks , data centers , cloud, wifi ....., with hands on approach.

## Policies and Procedures

Macquarie University policies and procedures are accessible from [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central). Students should be aware of the following policies in particular with regard to Learning and Teaching:

- [Academic Appeals Policy](#)
- [Academic Integrity Policy](#)
- [Academic Progression Policy](#)
- [Assessment Policy](#)
- [Fitness to Practice Procedure](#)
- [Grade Appeal Policy](#)
- [Complaint Management Procedure for Students and Members of the Public](#)
- [Special Consideration Policy](#) (**Note:** *The Special Consideration Policy is effective from 4 December 2017 and replaces the Disruption to Studies Policy.*)

Undergraduate students seeking more policy resources can visit the [Student Policy Gateway \(https://students.mq.edu.au/support/study/student-policy-gateway\)](https://students.mq.edu.au/support/study/student-policy-gateway). It is your one-stop-shop for the key policies you need to know about throughout your undergraduate student journey.

If you would like to see all the policies relevant to Learning and Teaching visit [Policy Central \(https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central\)](https://staff.mq.edu.au/work/strategy-planning-and-governance/university-policies-and-procedures/policy-central).

## Student Code of Conduct

Macquarie University students have a responsibility to be familiar with the Student Code of Conduct: <https://students.mq.edu.au/study/getting-started/student-conduct>

## Results

Results shown in *iLearn*, or released directly by your Unit Convenor, are not confirmed as they are subject to final approval by the University. Once approved, final results will be sent to your student email address and will be made available in [eStudent](#). For more information visit [ask.mq.edu.au](http://ask.mq.edu.au).

## Student Support

Macquarie University provides a range of support services for students. For details, visit <http://students.mq.edu.au/support/>

## Learning Skills

Learning Skills ([mq.edu.au/learningskills](http://mq.edu.au/learningskills)) provides academic writing resources and study strategies to improve your marks and take control of your study.

- [Workshops](#)

- [StudyWise](#)
- [Academic Integrity Module for Students](#)
- [Ask a Learning Adviser](#)

## Student Services and Support

Students with a disability are encouraged to contact the [Disability Service](#) who can provide appropriate help with any issues that arise during their studies.

## Student Enquiries

For all student enquiries, visit Student Connect at [ask.mq.edu.au](http://ask.mq.edu.au)

## IT Help

For help with University computer systems and technology, visit [http://www.mq.edu.au/about\\_us/offices\\_and\\_units/information\\_technology/help/](http://www.mq.edu.au/about_us/offices_and_units/information_technology/help/).

When using the University's IT, you must adhere to the [Acceptable Use of IT Resources Policy](#). The policy applies to all who connect to the MQ network including students.

## Graduate Capabilities

### PG - Capable of Professional and Personal Judgment and Initiative

Our postgraduates will demonstrate a high standard of discernment and common sense in their professional and personal judgment. They will have the ability to make informed choices and decisions that reflect both the nature of their professional work and their personal perspectives.

This graduate capability is supported by:

#### Learning outcome

- Working ability to apply skills for group-based learning projects.

#### Assessment task

- Group based learning Research

### PG - Discipline Knowledge and Skills

Our postgraduates will be able to demonstrate a significantly enhanced depth and breadth of knowledge, scholarly understanding, and specific subject content knowledge in their chosen fields.

This graduate capability is supported by:

#### Learning outcomes

- Ability to describe the Information Communication Technology (ICT) networks such as internet networks, mobile networks concept 2G,3G and 4G networks, data centres,



clouds, etc.) and end-to-end architecture.

- Demonstrate competence in the information communication Technology network performance management, analysis and network tools.

## **Assessment tasks**

- Inclass Test 1
- Inclass Test 2

## **PG - Critical, Analytical and Integrative Thinking**

Our postgraduates will be capable of utilising and reflecting on prior knowledge and experience, of applying higher level critical thinking skills, and of integrating and synthesising learning and knowledge from a range of sources and environments. A characteristic of this form of thinking is the generation of new, professionally oriented knowledge through personal or group-based critique of practice and theory.

This graduate capability is supported by:

### **Learning outcomes**

- Demonstrate hands-on learning key performance indicators for Information communications Technology networks, measurement and monitoring approach.
- Ability to run daily routines and tasks for network operations, troubleshooting and network security.
- Demonstrate competence in the information communication Technology network performance management, analysis and network tools.
- Working ability to apply skills for group-based learning projects.

## **Assessment tasks**

- Inclass Test 1
- Inclass Test 2
- Inclass Test 3
- Group based learning Research

## **PG - Research and Problem Solving Capability**

Our postgraduates will be capable of systematic enquiry; able to use research skills to create new knowledge that can be applied to real world issues, or contribute to a field of study or practice to enhance society. They will be capable of creative questioning, problem finding and problem solving.

This graduate capability is supported by:

## Learning outcome

- Demonstrate competence in the information communication Technology network performance management, analysis and network tools.

## Assessment tasks

- Group Project Report
- Group based learning Research

## PG - Effective Communication

Our postgraduates will be able to communicate effectively and convey their views to different social, cultural, and professional audiences. They will be able to use a variety of technologically supported media to communicate with empathy using a range of written, spoken or visual formats.

This graduate capability is supported by:

## Learning outcomes

- Ability to run daily routines and tasks for network operations, troubleshooting and network security.
- Working ability to apply skills for group-based learning projects.

## Assessment tasks

- Inclass Test 2
- Group based learning Research
- Group research project PPT

## PG - Engaged and Responsible, Active and Ethical Citizens

Our postgraduates will be ethically aware and capable of confident transformative action in relation to their professional responsibilities and the wider community. They will have a sense of connectedness with others and country and have a sense of mutual obligation. They will be able to appreciate the impact of their professional roles for social justice and inclusion related to national and global issues

This graduate capability is supported by:

## Learning outcome

- Working ability to apply skills for group-based learning projects.

## Assessment task

- Group based learning Research

## Changes from Previous Offering

Students have requested in S2 2017 (40% in class tests and 60% for the project) to increase the weight for in class tests and reduce the percentage for project so in response I am following the request and feedback to have in S1 2018 (60% for in class tests and 40% for project)

## Assessment change

60% for in class tests and 40% for project

## Change based on students feedback

60% for in class tests and 40% for project