

# ELEC 7008 INSTRUMENTATION AND MEASUREMENT (PG)

**Credit Points** 10

**Legacy Code** 300515

**Coordinator** Gaetano Gargiulo ([https://directory.westernsydney.edu.au/search/name/Gaetano Gargiulo/](https://directory.westernsydney.edu.au/search/name/Gaetano%20Gargiulo/))

**Description** This subject covers topics associated with the measurement and presentation of physical parameters. A wide range of transducers are presented in detail, while instrumentation includes a detailed analysis of a multitude of analogue and digital circuits used to amplify, transmit, and display electrical signals. The application of these modules in modern measurement equipment is presented in details.

**School** Eng, Design & Built Env

**Discipline** Electronic Engineering

**Student Contribution Band** HECS Band 2 10cp

Check your fees via the Fees ([https://www.westernsydney.edu.au/currentstudents/current\\_students/fees/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Postgraduate Coursework Level 7 subject

## Restrictions

Students must be enrolled in a postgraduate program.

## Assumed Knowledge

Instrumentation and Measurement (PG).

## Learning Outcomes

On successful completion of this subject, students should be able to:

1. Explain limitations of and apply a wide range of transducers
2. Design and analyse systems used for process control
3. Explain the techniques and trade-offs involved in A/D and D/A conversion
4. Design and specify requirements for interfacing a large number of analogue signals to a digital controller
5. Design complete instrumentation systems

## Subject Content

Transducers

Amplification techniques (signal conditioning)

Digital-to-analogue conversion

Analog-to-digital conversion

Digital devices

## Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task	Mandatory
Presentation	20 minutes	30	N	Individual	Y
Quiz	1 hour	20	N	Individual	Y
Applied Project	5 A4 pages	30	N	Individual	Y
Applied Project	5 A4 pages	20	N	Individual	Y

Teaching Periods

## Autumn (2025)

**Parramatta City - Macquarie St**

### On-site

**Subject Contact** Gaetano Gargiulo ([https://directory.westernsydney.edu.au/search/name/Gaetano Gargiulo/](https://directory.westernsydney.edu.au/search/name/Gaetano%20Gargiulo/))

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