ELEC 2012 SIGNALS AND SYSTEMS (WSTC ASSOCD)

Credit Points 10

Legacy Code 700241

Coordinator Abbas Ranjbar (https://directory.westernsydney.edu.au/search/name/Abbas Ranjbar/)

Description This unit aims to develop students understanding of continuous-time and discrete-time concepts and methods. It covers various signals and their analysis, as encountered in the fields of electrical, computer and telecommunication engineering.Offerings of alternate units are dependent on there being sufficient student enrolment numbers. If enrolments are low, the College may cancel delivery of the alternate unit.

School Eng, Design & Built Env

Discipline Communications Technologies

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 2 subject

Pre-requisite(s) MATH 1020 AND
ELEC 1004

Equivalent Subjects ELEC 2011 - Signals and Systems

Restrictions Students must be enrolled at Western Sydney University, The College in 7022 Associate Degree in Engineering

Learning Outcomes

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

1. Explain common signal types and properties in electrical engineering
2. Explain continuous-time, discrete-time, linear and non-linear systems
3. Describe concepts of power, energy, power spectral density, energy spectral density of signals
4. Determine impulse response, frequency response and stability of a system
5. Apply the principle of convolution to solve problems in linear systems
6. Perform Fourier analysis and Laplace analysis
7. Apply Z-transforms to discrete-time systems
8. Utilise MATLAB for solving signals and systems related problems

Subject Content

1. Classification of signals.
2. Time domain representations of linear-time invariant systems.
3. The Fourier series.
4. The Fourier transform and its applications.
5. The Laplace transform.
6. Discrete-time signals and systems and z-transforms.

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.

Item	Length	Percent	Threshold	Individual/ Group Task
Online Quizzes x 5	30 minutes x 5	15	N	Individual
Lab reports x 5	2 hours each	20	N	Both (Individual & Group)
Intra-session exam	1 hour	15	N	Individual
Final Exam	2 hours	50	N	Individual

Teaching Periods

Quarter 2

Nirimba Education Precinct

Composite

Subject Contact Abbas Ranjbar (https://directory.westernsydney.edu.au/search/name/Abbas Ranjbar/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ELEC2012_22-Q2_BL_C#subjects)