ENGR 7023 ADVANCED BIOMEDICAL DATA AND IMAGES

Credit Points 10

Legacy Code 301211

Coordinator Upul Gunawardana (https://directory.westernsydney.edu.au/search/name/Upul Gunawardana/)

Description This subject will cover advanced biomedical signal and data analysis including electrocardiography, electroencephalography, human-computer-interface, electromyography, machine learning and biomedical images. This subject will have a strong practical design focus with laboratories and tutorials focused on the design of usable software packages dealing with real biomedical signals.

School Eng, Design & Built Env

Discipline Biomedical Engineering

Student Contribution Band HECS Band 2 10cp

Level Postgraduate Coursework Level 7 subject

Restrictions

Students must be enrolled in a postgraduate program

Assumed Knowledge

Signals theory; computer skills including use of MATLAB.

Learning Outcomes

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

1. Process biomedical signals.
2. Write user-interface to automatically/aid expert scoring signals.
3. Analyse and process biomedical images.
4. Develop complex signal manipulation strategies.

Subject Content

Introduction to Biomedical Signals
Digital filters for Biomedical Signals
Automated scoring of Biomedical Signals
Biomedical images: production and processing
Advanced techniques for data manipulations

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
Professional Task	Three submissions required (see schedule of activities for due dates)	80	N	Individual
Presentation	15 minutes	20	N	Individual

Prescribed Texts

- Semmlow, JL 2004, Biosignal and biomedical image processing MATLAB-based applications, Marcel Dekker, New York.

Teaching Periods

Autumn (2022)

Parramatta City - Macquarie St

Day

Subject Contact Upul Gunawardana (https://directory.westernsydney.edu.au/search/name/Upul Gunawardana/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ENGR7023_22-AUT_PC_D#subjects)

Autumn (2023)

Parramatta City - Macquarie St

On-site

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