

ENGR 7025 HUMAN PHYSIOLOGY AND BIOMEDICAL TECHNOLOGIES

Credit Points 10

Legacy Code 301210

Coordinator Titus Jayarathna ([https://directory.westernsydney.edu.au/search/name/Titus Jayarathna/](https://directory.westernsydney.edu.au/search/name/Titus%20Jayarathna/))

Description This subject aims to introduce a wide range of biomedical technologies and how they are used in medical practice. Topics will span from data acquisition technologies such as ECG, EEG, body plethysmography, to large imaging diagnostics such as CT scanner, PET scanner and bio-mechanical assisting devices often used for rehabilitation and support. The first part of this subject will include a module on human physiology and bio-mechanics. This module gives a basic understanding of the human body and introduces the scientific and medical terminology used for anatomy, physiology and biochemistry and bio-mechanics.

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

Computer skills; basic concepts of electronics i.e. amplifiers and filters; knowledge of signal theory

Learning Outcomes

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

1. Apply basic principles of human physiology to biomedical engineering.
2. Apply the process of development of medical devices from inception to commercialization.
3. Apply principles relating to the functioning of major biomedical technologies.

Subject Content

Biomedical technologies: Signals based devices i.e. ECG, EMG etc
Biomedical technologies: Imaging based devices i.e. MRI, X-rays etc
Principles of human physiology

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	Submission 1 Part A: 20 questions; Submission 2 Part B: 3000 words	80	N	Individual
Presentation	15 minutes	20	N	Individual

Prescribed Texts

- Becchetti, C & Neri, A 2013, Medical instrument design and development : from requirements to market placements, John Wiley & Sons, Chichester, West Sussex.

Teaching Periods

Autumn (2022)

Parramatta City - Macquarie St

Day

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

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=ENGR7025_22-AUT_PC_D#subjects)

Autumn (2023)

Parramatta City - Macquarie St

On-site

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