



Unit Outline (Higher Education)

Institute / School:	Institute of Innovation, Science & Sustainability
Unit Title:	Medical Biophysics
Unit ID:	MONCI1001
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED:	019901

Description of the Unit:

This unit introduces the student to the fundamental role of physics in how the body functions. Throughout the semester, students will learn key principles of physics, and apply this knowledge to physiological processes. The concepts will be explored through experimentation and creation of simple models. The concepts studied include the flow of fluids (such as blood and air) in the body, the mechanics of the musculoskeletal system, electrical signals within the brain and nervous system, and the optics involved in vision. These concepts will be explored through a range of scales - from atomic through to whole body systems. By understanding the key principles which govern how our bodies function, students will have gained a solid foundation for further study in the biomedical sciences.

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Work Experience:

No work experience

Placement Component: No

Supplementary Assessment: No

Supplementary assessment is not available to students who gain a fail in this Unit.

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Introductory	■	■	✓	■	■	■
Intermediate	■	■	■	■	■	■

Level of Unit in Course	AQF Level of Course					
	5	6	7	8	9	10
Advanced	■	■	■	■	■	■

Learning Outcomes:

Knowledge:

- K1.** Explain and apply relevant physics principles to human physiology and biomedical contexts
- K2.** Identify physical factors that should be considered when analysing physiological systems

Skills:

- S1.** Perform basic experiments, conduct reliable measurements, analyse data and interpret results
- S2.** Accurately communicate scientific information in written and graphical forms

Application of knowledge and skills:

- A1.** Use critical thinking to apply physics principles and models to physiological problems.

Unit Content:

This unit introduces the student to the fundamental role of physics in how the body functions. Throughout the semester, students will learn key principles of physics, and apply this knowledge to physiological processes. The concepts will be explored through experimentation and creation of simple models. The concepts studied include the flow of fluids (such as blood and air) in the body, the mechanics of the musculoskeletal system, electrical signals within the brain and nervous system, and the optics involved in vision. These concepts will be explored through a range of scales - from atomic through to whole body systems. By understanding the key principles which govern how our bodies function, students will have gained a solid foundation for further study in the biomedical sciences.

Learning Task and Assessment:

Assessment Tasks	Assessment Type	Weighting
Hurdle task	Written Examination	40
Practical Work	Practical Work	30
In class activities and online tests	In class activities and online tests	30

Adopted Reference Style:

Australian Harvard

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)