



# Course Outline (Higher Education)

<b>School:</b>	School of Science, Psychology and Sport
<b>Course Title:</b>	MEDICAL BIOPHYSICS
<b>Course ID:</b>	MONCI1001
<b>Credit Points:</b>	15.00
<b>Prerequisite(s):</b>	Nil
<b>Co-requisite(s):</b>	Nil
<b>Exclusion(s):</b>	Nil
<b>ASCED:</b>	019901

## Description of the Course:

This course 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: Student is not undertaking work experience in industry.

**Placement Component:** No

## Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 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.

**Course Content:**

This course 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:**

Learning 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

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