

# PHYS 0003 FOUNDATION PHYSICS 2 (WSTC PREP)

**Credit Points** 10

**Legacy Code** 700145

**Coordinator** Ben Kelley ([https://directory.westernsydney.edu.au/search/name/Ben Kelley/](https://directory.westernsydney.edu.au/search/name/Ben%20Kelley/))

**Description** This unit provides students with the background knowledge and skills in physics needed for Engineering courses. Students will cover more advanced content in Mechanics, Electricity, Magnetism and waves.

**School** Western Sydney The College

**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/](https://www.westernsydney.edu.au/currentstudents/current_students/fees/)) page.

**Level** Undergraduate Level 0 Preparatory subject

**Pre-requisite(s)** Students enrolled in 7066 Diploma in Engineering Extended must have passed PHYS 0001 Foundation Physics

**Equivalent Subjects** PHYS 0004 - Foundation Physics 2 (UWSC)

**Incompatible Subjects** LGYB 1383 - Physics (UWSC) PHYS 0006 - Physics (UWSCFS)

**Restrictions** Students must be enrolled at Western Sydney University, The College.

**Assumed Knowledge**

Year 10 Mathematics and Science or equivalent.

## Learning Outcomes

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

1. Use graphical and computer methods to analyse data and draw conclusions
2. Identify and calculate the characteristics of uniformly accelerated motion and predict variables of motion based on past or current conditions including projectile motion
3. Use Newtonian dynamics to quantitatively analyse objects in equilibrium in two dimensions
4. Use the concepts of work and conservation of energy to quantitatively solve complex problems
5. Use Newtonian dynamics to quantitatively analyse objects experiencing circular motion
6. Demonstrate an ability to describe and apply quantitative relationship between charge, current, resistance, voltage and electrical power in the complex combined circuits
7. Analyse quantitatively the properties of waves
8. Perform experiments to demonstrate and measure physics principles and concepts

## Subject Content

1. Mechanics Dynamics and Statics ? Vectors in 2D and higher, motion in 2D, projectile motion
2. Mechanics ? Circular motion, momentum and impulse, work, energy, power and efficiency

3. Electricity ? Ohm's Law, electric current and circuits, circuits, electrical power, advanced circuit components
  4. Magnetism ? Electric charge, Magnetic forces, electricity and magnetism, solenoids and electromagnets, the motor effect, electromagnetic induction, transformers
  5. Waves ? Properties and behaviour, the wave equation, superposition, electromagnetic spectrum, properties of light
1. Mechanics Dynamics and Statics ? Vectors in 2D and higher, motion in 2D, projectile motion
  2. Mechanics ? Circular motion, momentum and impulse, work, energy, power and efficiency
  3. Electricity ?

## 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
Intra-Session Exam 2	1 hour	20	N	Individual
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Quizzes x 5 (1% each)	20 minutes each	5	N	Individual
Log/Workbook	400 words each of the 5 Practicals	15	N	Individual
Final Exam	2 hours	40	N	Individual

Teaching Periods

## Term 1

### Penrith (Kingswood)

**Day**

**Subject Contact** Ben Kelley ([https://directory.westernsydney.edu.au/search/name/Ben Kelley/](https://directory.westernsydney.edu.au/search/name/Ben%20Kelley/))

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=PHYS0003\\_22-T1\\_KW\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=PHYS0003_22-T1_KW_D#subjects))

### Parramatta City - George St

**Day**

**Subject Contact** Ben Kelley ([https://directory.westernsydney.edu.au/search/name/Ben Kelley/](https://directory.westernsydney.edu.au/search/name/Ben%20Kelley/))

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=PHYS0003\\_22-T1\\_PG\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=PHYS0003_22-T1_PG_D#subjects))

## Term 2

### Penrith (Kingswood)

**Day**

**Subject Contact** Ben Kelley ([https://directory.westernsydney.edu.au/search/name/Ben Kelley/](https://directory.westernsydney.edu.au/search/name/Ben%20Kelley/))

View timetable ([https://classregistration.westernsydney.edu.au/even/timetable/?subject\\_code=PHYS0003\\_22-T2\\_KW\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=PHYS0003_22-T2_KW_D#subjects))