

# PHYS 0001 FOUNDATION PHYSICS 1 (WSTC PREP)

**Credit Points** 10

**Legacy Code** 700144

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

**Description** This subject replaces 700026 - Physics (UWSCFS) from Term 1 2014. This subject provides a brief introduction to the essentials of Physics. This subject is focused on skills and knowledge that students from a variety of science, construction and engineering courses need in their first year of study. Students cover introductory topics in Mechanics, Energy and Power, Electricity and waves.

**School** Western Sydney The College

**Discipline** Physics

**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

**Equivalent Subjects** PHYS 0002 - Foundation Physics 1 (UWSC)

**Incompatible Subjects** PHYS 0006 - Physics (UWSCFS) PHYS 0005 - Physics (UWSC)

**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
2. Identify the characteristics of uniform motion and calculate variables of motion in one dimension
3. Identify the characteristics of uniformly accelerated motion and predict variables of motion based on past or current conditions in one dimension
4. Use Newtonian dynamics to quantitatively analyse objects in equilibrium and acceleration
5. Use the concepts of work and conservation of energy to explain the behaviour of different systems
6. Demonstrate an ability to describe and apply quantitative relationship between charge, current, resistance and electrical power in the combined circuits
7. Quantitatively analyse reflection and refraction of waves
8. Perform experiments to demonstrate and measure physics principles and concepts

## Subject Content

1. Mechanics ? Energy and Power ? Work and energy, conservation of energy, power and efficiency  
 addition and subtraction of force vectors, motion in a straight line, graphing motion, Newton's Law of Motion, momentum and impulse, conservation of momentum

2. Mechanics ? Energy and Power ? Work and energy, conservation of energy, power and efficiency  
 3. Electricity ? Ohm's Law, electric current and circuits, electrical power, using electricity safety  
 4. Waves ? Description of wave motion, mechanical waves, sound waves

1. Mechanics Dynamics and Statics ? SI units and their relationship, addition and subtraction of force vectors, motion in a straight line, graphing motion, Newton's Law of Motion, momentum and impulse, conservation of momentum

2. Mechanics ? Energy and Power ? Work and energy, conservation of energy, power and efficiency

3. Electricity ? Ohm's Law, electric current and circuits, electrical power, using electricity safety

4. Waves ? Description of wave motion, mechanical waves, sound waves

## 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
Numerical Problem Solving	2 x 1 hr	30	N	Individual
Log/Workbook	5 x 2 hr/~100 words	30	N	Individual
Report	<1000 words	30	N	Individual
Quiz	6 x 15 min	10	N	Individual

Teaching Periods

## Term 1 (2022)

### 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=PHYS0001\\_22-T1\\_KW\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=PHYS0001_22-T1_KW_D#subjects))

## Term 2 (2022)

### 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/))

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## Term 3 (2022)

### 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=PHYS0001\\_22-T3\\_KW\\_D#subjects](https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=PHYS0001_22-T3_KW_D#subjects))

## **Term 1 (2023)**

### **Penrith (Kingswood)**

#### **On-site**

**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/odd/timetable/?subject\\_code=PHYS0001\\_23-T1\\_KW\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=PHYS0001_23-T1_KW_1#subjects))

## **Term 3 (2023)**

### **Penrith (Kingswood)**

#### **On-site**

**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/odd/timetable/?subject\\_code=PHYS0001\\_23-T3\\_KW\\_1#subjects](https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=PHYS0001_23-T3_KW_1#subjects))