NATS 0005 FOUNDATIONS OF SCIENCE (WSTC)

Credit Points 10

Legacy Code 900053

Coordinator Phillip Newman (https://directory.westernsydney.edu.au/search/name/Phillip Newman/)

Description This subject aims to provide students with sufficient knowledge of scientific facts and theories to provide the basis for further studies in science, engineering and technology. Emphasis is placed on developing the key competencies of scientific inquiry - collecting, analysing, organising and communicating information as well as solving problems, particularly when related to using mathematical ideas and techniques. Major areas of science - physics, chemistry and biology are represented within the subject and presented in context within an integrated framework.

School Western Sydney The College

Student Contribution Band HECS Band 2 10cp

Check your fees via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 0 Preparatory subject

Restrictions

Students must be enrolled in a Western Sydney University The College Foundation Studies program.

Learning Outcomes

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

1. Recognise, recall and display an understanding of specific scientific facts, terminology, principles, concepts and practical techniques;
2. Display an understanding of the benefits and drawbacks of applications of science;
3. Represent scientific information appropriately as diagrams, graphs, tables, reports and equations;
4. Describe, explain and interpret phenomena and ideas in terms of scientific principles;
5. Carry out relevant calculations;
6. Interpret data to draw conclusions which are consistent with the evidence, recognising patterns and relationships where they exist.

Subject Content

1. The Nature of Science
Observations; Physical Quantities and Units; International System of Units and Measurement;
Graphs.
2. Force and Motion
Motion Graphs; Accelerated Motion; Free Fall Motion; Forces; Weight; Friction; Newton's Laws.
3. Elements, Compounds and Mixtures
Understanding of Chemistry; Pure and impure substances - properties; Examples of elements, mixtures and compounds; Particles in solids, liquids and gases.
4. Atomic Structure and the Periodic Table
Current atomic theory; Subatomic particles and arrangement; Atomic structure and position on periodic table; Metals and non-metals.
5. The Chemical Reaction
Physical and chemical changes - evidence; Ionic and covalent bonds; Common reactions - word equations - formula equations (balanced only); Common compounds and properties.
6. Cell Theory
Characteristics and requirements of living things; Cell Theory.
7. Body Systems
Major organ systems - organs and functions; Diseases - causes and cures.

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
Physics assignment-short answer	300 words	20	N	Individual
Chemistry Short Answer	1 hour	20	N	Individual
Biology Short Answer	1 hour	20	N	Individual
End-of-session Exam	2 hours and 20 minutes	40	N	Individual