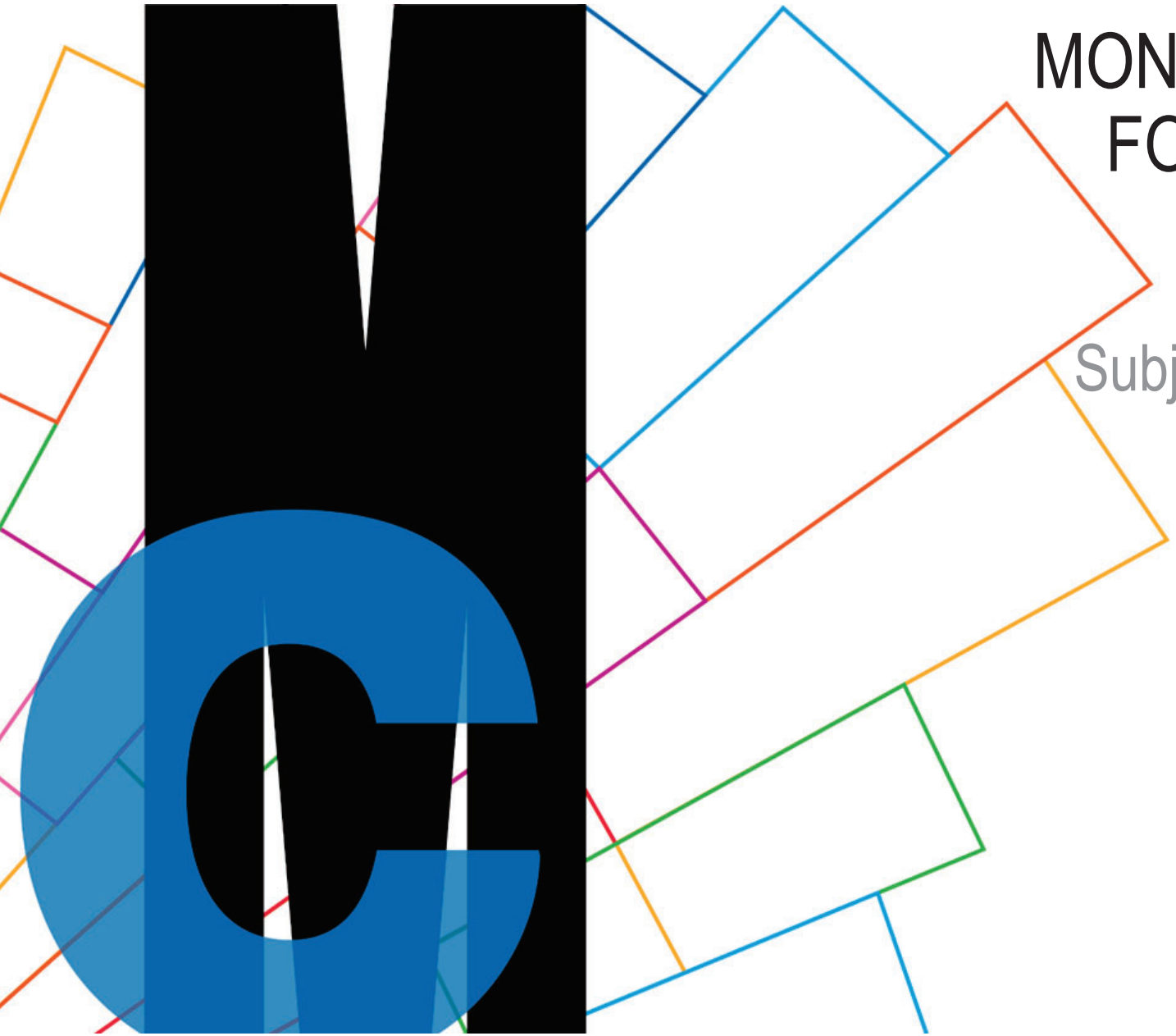
MONASH College



MONASH UNIVERSITY FOUNDATION YEAR

Subject guide for studies in

Semester 1, 2024

UPDATED November 2023

MUF0031 Biology Unit 1: The Basis For Life

Overview

Biology is the study of living things, their structures and functions. It includes the study of how living things interact with each other and with their environment. The study of Biology provides the student with an understanding of the natural world and the role that humans play within it. It also provides the student with a scientific framework upon which to build hypothesis and design valid, controlled experiments.

Prerequisites

Unit 1 Biology can be completed without completing Unit 2 Biology. However, Unit 2 cannot be undertaken without first completing Unit 1. The two units can be undertaken concurrently.

Biology uses its own, specific language. The development and utilisation of this new language is enhanced daily in Biology. It is recommended that students commencing the course are already familiar with some scientific and biological terms and concepts. Some skill using a light microscope would be advantageous.

Knowledge outcomes

At the end of this unit students will be able to:

- Demonstrate an understanding and appropriate use of the language of Biology
- Demonstrate an understanding of the scientific method and the features of a well-designed experiment
- Demonstrate an understanding the structure and function of biological molecules, enzymes and energy systems
- Compare and contrast different cells and relate cell structure to function
- Demonstrate an understanding of homeostasis, negative feedback and the roles of the nervous system and endocrine system
- Demonstrate an understanding of pathogens and the immune system, immunity and autoimmune diseases

Skills and behaviours outcomes

At the end of this unit students will be able to:

- Work independently or as a team to achieve outcomes
- Apply biological and general scientific knowledge to identify and analyse concepts
- Present data or other scientific information using an appropriate format
- Collect, record and analyse data and evaluate experimental design
- Research, interpret and communicate information accurately relevant to a scientific concepts
- Recognise the importance of ethics and safety in the laboratory and comply with safety procedures

Assessment	
Assessment Task	**Weighting**
Skills and Application Task	20%
Practical Assessment	20%
Research Project	20%
Participation	10%
Examination	30%

MUF0032 Biology Unit 2: The Blueprint for Life

Overview

Biology is the study of living things, their structures and functions. The study of Biology provides the student with an understanding of the natural world and the role that humans play within it. It also provides the student with a scientific framework upon which to build hypothesis and conduct valid, controlled experiments.

In this unit, students will develop their understanding of cellular reproduction; Mendelian genetics; mutation and its role in variation within populations; the mechanisms of evolution including primate adaptations and human evolution.

Prerequisites

Biology Unit 1 can be completed without completing Biology Unit 2. However, Unit 2 cannot be undertaken without first completing Unit 1. The two units can be undertaken concurrently.

Biology uses its own, specific language. The development and utilisation of this new language is enhanced daily in Biology. It is recommended that students commencing the course are already familiar with some scientific and biological terms and concepts. Some skill using a light microscope would be advantageous.

Knowledge outcomes

At the end of this unit students will be able to:

- Demonstrate an understanding and appropriate use of the language of Biology
- Compare and contrast sexual and asexual reproduction in terms of cellular processes and the effects of variation within a population
- Demonstrate an understanding of the mechanisms of inheritance and the effect of mutation on variation within a population and survival of a species
- Demonstrate an understanding of the processes of various biotechnologies and genetic engineering as well as the advantages, disadvantages and ethical concerns of their use
- Demonstrate an understanding of the evidence for and mechanisms of evolution
- Demonstrate an understanding of primate evolution, including the strengths and weaknesses of the models of hominin evolution

Skills and behaviours outcomes

At the end of this unit students will be able to:

- Work independently or as a team to achieve outcomes
- Apply biological and general scientific knowledge to identify and analyse concepts
- Present data or other scientific information using an appropriate format
- Collect, record and analyse data and evaluate experimental design
- Research, interpret and communicate information accurately relevant to a scientific concepts
- Recognise the importance of ethics and safety in the laboratory and comply with safety procedures

Assessment	
Assessment Task	**Weighting**
Skills and Application Task	20%
Practical Assessment 1	20%
Practical Assessment 2	20%
Participation	10%
Examination	30%