

SUBJECT: HUMAN BIOLOGY

AWARD RECEIVED: HIGHER

Biology, the study of living organisms, plays a crucial role in our everyday life, and is an increasingly important subject in the modern world. Biology affects everyone, and biologists work to find solutions to many of the world's problems. Advances in technology have made human biology more exciting and relevant than ever.

The Higher Human Biology course gives candidates the opportunity to understand and investigate the living world in an engaging and enjoyable way. It develops candidates' abilities to think analytically, creatively and independently, and to make reasoned evaluations. The course provides opportunities for candidates to acquire and apply knowledge to evaluate biological issues, assess risk, make informed decisions and develop an ethical view of complex issues. Candidates are able to develop their communication, collaborative working and leadership skills, and are able to apply critical thinking in new and unfamiliar contexts to solve problems.

ENTRY LEVEL

Students should ideally have N5 Biology, at A or B. It could be possible for a student without previous experience of Biology to follow this course, in which case they should speak to Mrs McDowell (Principal Teacher of Biology & Chemistry) for advice.

COURSE CONTENT

The course content includes the following areas of human biology:

Human cells

The key areas covered are:

- ❖ division and differentiation in human cells
- ❖ structure and replication of DNA
- ❖ gene expression
- ❖ mutations
- ❖ human genomics
- ❖ metabolic pathways
- ❖ cellular respiration
- ❖ energy systems in muscle cells

Physiology and health

The key areas covered are:

- ❖ gamete production and fertilisation
- ❖ hormonal control of reproduction
- ❖ the biology of controlling fertility
- ❖ antenatal and postnatal screening
- ❖ the structure and function of arteries, capillaries and veins
- ❖ the structure and function of the heart
- ❖ pathology of cardiovascular disease (CVD)
- ❖ blood glucose levels and obesity

Neurobiology and immunology

The key areas covered are:

- ❖ divisions of the nervous system and neural pathways
- ❖ the cerebral cortex
- ❖ memory
- ❖ the cells of the nervous system and neurotransmitters at synapses
- ❖ non-specific body defences
- ❖ specific cellular defences against pathogens
- ❖ immunisation
- ❖ clinical trials of vaccines and drugs

ASSESSMENT

To gain an overall Award for this Course, students need to pass the:

Course Assessment components, marked by the SQA:

1. **Assignment** (represents 20% of the overall marks for the course assessment)
2. **Exam** (represents 80% of the overall marks for the course assessment)

CONDITIONS OF AWARD

Candidates' overall grades are determined by their performance across the course assessment. The course assessment is graded A-D on the basis of the total mark for all course assessment components.

HOMEWORK

Homework is an essential part of the course. Homework will include practice problems, questions from a textbook and regular revision of all the material covered in the course.

TRANSFERABLE SKILLS

There are many very useful and valuable transferable skills gained by studying Higher Biology, including: researching, ICT, reporting, numeracy, literacy, graphing, investigating, practical experimental skills, analysing, presentation, evaluating, to name a few.

PROGRESSION

There is very good progression from this Course on to Advanced Higher Biology.