



BTEC HUMAN BIOLOGY

AMBITIOUS

COLLABORATIVE

HAPPY

INTEGRITY

ENDURANCE

VERSATILITY

EXCELLENCE

What is a BTEC?

BTEC is an established and highly successful qualification which is designed to provide learners with a more practical, real-world approach to learning together with specialist knowledge, understanding and skills that they need to prepare them for employment or higher education.



Future Pathways of Study

Applied Human Biology forms the foundation of the Health and Science sectors:

- Health and Social Care
- Sport Science
- Nursing
- Midwifery
- Occupational Health



There is the opportunity to work in a range of settings including hospitals, private clinics, industry, research institutes and community healthcare.

Entry Requirements

At least a grade 4 in GCSE Maths and at least a grade 4 in GCSE Biology (if doing Separate Sciences) or at least a grade 4/4 in Combined Science.

You need to be prepared to work hard, work independently (only a limited amount of teacher input is permitted) and meet stringent deadlines.

This is not an easy option!

The BTEC Award

The Extended Certificate is a two year course that is equivalent to one A-level and as such, attracts UCAS tariff points.

- Comprises 58% assessment and 42% coursework.
- BTEC units are graded individually; each unit is graded Pass, Merit or Distinction, according to how you perform against a set of criteria.
- Once you have completed all units, Pearson calculates an overall Pass, Merit, Distinction or Distinction* grade.

Time Commitments

There will be 9 hours of contact time (teaching) per fortnight.

You will be expected to commit to at least 5 additional hours PER WEEK outside of your timetabled lessons.

Course Structure

Year 1

Unit 1: Principles of Applied Human Biology

Unit 2: Practical Microbiology and Infectious Diseases

Year 2

Unit 3: Human Biology and Health Issues

Unit 5: Diseases, Disorders, Treatment and Therapies

Transferable skills valued by employers and universities:

- Self-reflection
- Critical thinking
- Collaborative work
- Presentation skills
- Analytical skills

Unit 1 - Content Areas

A Fundamentals of Human Biology

A1 Cells, tissues and biological molecules

A2 Nervous system

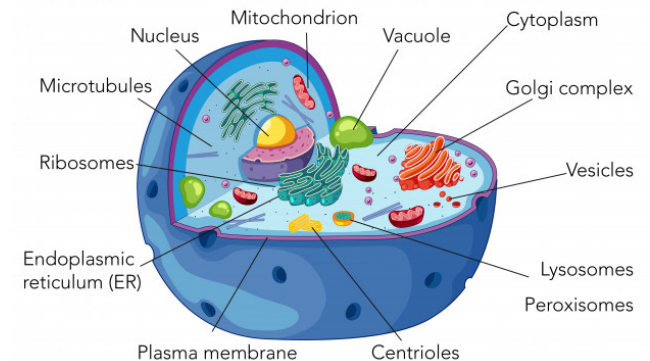
A3 Cardiovascular and respiratory system

A4 Digestive and excretory system

A5 Cellular injury and repair

A6 Diagnostic techniques

ANIMAL CELL ANATOMY



Unit 1 - Content Areas

B Immune response, dysfunction and treatment of immune disorders

B1 Immune response

B2 Immune dysfunction

C Genetics and Health

C1 Gene expression

C2 Genetic disorders and diagnosis



Unit 1 - Assessment

This unit will be assessed through an **external written examination** worth 80 marks. The examination will last 1 hour and 30 minutes.

Exam dates: January or May/June.

The paper will include a range of question types, including multiple choice, calculations, short answer and open response.

Unit 2 - Content Areas

Learning aim	Key content areas	Recommended assessment approach
A Understand the classification and nature of microorganisms	A1 Characteristics of different microorganisms A2 Methods of pathogenicity A3 Classification strategies	<p>A portfolio of evidence to include a flow diagram.</p> <p>Details should include annotations of the classification and characterisation of each type of microorganism, including growth patterns and how pathogens can cause damage to tissues and cells in the body.</p>
B Examine the transmission and treatments of infectious diseases	B1 Classification overview of infectious disease B2 Transmission of infectious agents B3 Infectious diseases, signs, symptoms and progression B4 Prevention and treatment of infectious diseases	<p>A report that includes details of how the chosen diseases are transmitted, how the pathogen attaches to and invades tissue, and how it causes damage to the host.</p> <p>Appropriateness of treatments and future developments should be included in the report.</p> <p>The effectiveness of the treatments should be examined in relation to the type of pathogen, including transmission and control.</p>

Unit 2 - Content Areas

<p>C Explore the application of techniques to culture and identify microorganisms</p>	<p>C1 Health and safety C2 Microscopy and staining techniques C3 Culture of microorganisms</p>	<p>Laboratory notebooks recording the practical work completed plus observations of practical work carried out by suitably qualified staff.</p> <p>Details should include a written report on the practical work that learners have carried out, detailing all of the outcomes, health and safety requirements and an evaluation of the procedures used.</p> <p>Practical work will be supported by appropriate research into the techniques used.</p>
<p>D Investigate the effects of antimicrobial agents on the growth of microorganisms</p>	<p>D1 Investigating the substances that inhibit the growth of microorganisms D2 Interpretation, analysis and evaluation</p>	<p>A written report that includes a hypothesis, preliminary work, method, variables, results, analysis and evaluation.</p>

Unit 2 - Assessment

There is a maximum number of three assignments for this unit.

The assignments will take the form of a portfolio of evidence, written reports and recordings made in laboratory notebooks.

All assignments will be internally assessed and externally verified.

Unit 3 - Content Areas

A Contemporary health issues

A1 Understand health issues and associated initiatives and research

A2 Understand the influence of organisations/individuals on health issues

B Interpretation, analysis and evaluation of scientific information

B1 Interpret, analyse and evaluate scientific information

Unit 3 - Content Areas

C Scientific reporting

C1 Understand how health issues and initiatives are reported in different media and for different audiences



World Health Organization

Unit 3 - Assessment

This unit will be assessed under supervised conditions.

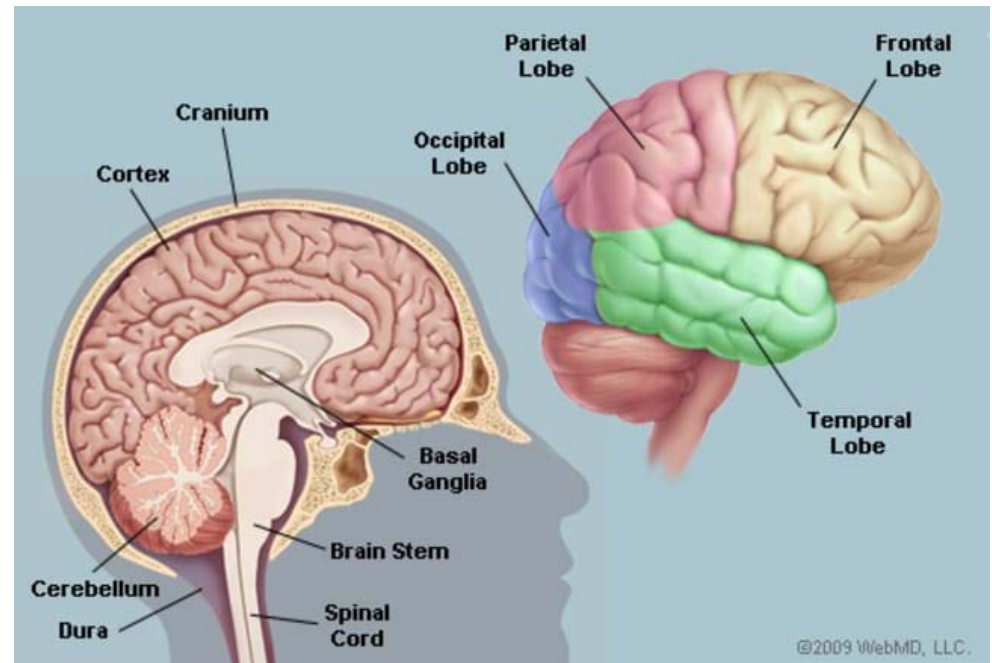
The supervised assessment task must be completed in a **single session of 3 hours**, on a day timetabled by Pearson.

During the supervised assessment session, learners will be given a stimulus in the form of a scientific article. Learners will analyse and interpret this article in the context of how the health issue is being reported.

Pearson sets and marks the task. The number of marks for the unit is 60.

Unit 5 - Content Areas

Diseases, Disorders, Treatments and Therapies



Unit 5 - Content Areas

Learning aim	Key content areas	Recommended assessment approach
A Understand biological molecules and pathways and their effect on the body	A1 Structure and function of biological molecules A2 Roles of proteins and lipids in maintaining physiological and psychological health A3 Disruption of biological processes in living organisms	A report on biological molecules and how their structure affects their role, and how structural disruption can lead to physiological and psychological diseases and disorders.
B Understand the effects of physiological diseases and disorders and associated treatments	B1 Physiological diseases and disorders B2 Treatments for physiological diseases and disorders B3 Effects on the body	A report on causes, effects and treatments of physiological and psychological disorders.

Unit 5 - Content Areas

<p>C Understand the causes and effects of psychological diseases and disorders and associated treatments</p>	<p>C1 Overview of brain structure and function</p> <p>C2 Psychological diseases and disorders</p> <p>C3 Causes of psychological diseases and disorders</p> <p>C4 Treatments for psychological diseases and disorders</p> <p>C5 Effects of treatments for psychological disorders</p>	
<p>D Examine the development of innovative and future types of treatment for physiological and psychological diseases and disorders</p>	<p>D1 Drug and medicine discovery and development</p> <p>D2 Innovative treatments</p> <p>D3 Ethical, legal and moral issues</p>	<p>A report or case study on the development and testing of drugs and medicines and associated ethical, moral and legal issues relating to treatments of physiological and psychological diseases and disorders.</p>

Unit 5 - Assessment

There is a maximum number of three assignments for this unit.

The assignments will take the form of a portfolio of evidence, written reports and recordings made in laboratory notebooks.

All assignments will be internally assessed and externally verified.

School Trips

We will endeavour to run at least one trip a year to a laboratory facility so that you can see Science in action. You are expected to fund your place on the trip.

We are also hoping to involve numerous employers in the delivery of the course (e.g. guest speakers, practical sessions, local opportunities).

