

PETROC



**UNIVERSITY OF
PLYMOUTH**

**ACADEMIC PARTNERSHIPS
PROGRAMME QUALITY
HANDBOOK
2021-22**

**Technician Scientist
Apprenticeship Standard
Level 5**

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Welcome and Introduction

Welcome to the Technician Scientist Apprenticeship Standard Level 5 (Foundation Degree in Human Biosciences) delivered at the North Devon Campus by Petroc.

The Human Biosciences FdSc offers an introduction to an exciting range of subjects including biochemistry, microbiology, genetics, human anatomy, physiology and immunology. This makes it ideal for students interested in human biology but who are not yet committed to a particular area of specialisation. Most students progress to complete their third year at the University of Plymouth to gain a BSc honours degree in Human Biosciences. Some choose to pursue alternative pathways, either at Plymouth or other universities.

This programme has been designed to equip you with the skills and knowledge base required to work in your chosen specialism or may lead to other graduate opportunities. As an integrated part of your programme you will participate in work-based learning in local industry. It is also a platform from which you can undertake additional vocational and academic qualifications.

We are fortunate to have some part-time lecturers with relevant areas of expertise who contribute to our programme, in addition to our core of college lecturers. We also invite guest lecturers to speak from time to time. Many lessons are practical based and students have the opportunity to develop practical skills and carry out experiments and investigations.

Throughout the course we encourage students to strengthen their links with the University of Plymouth through a series of visits to see the University campus and its fantastic facilities, meeting with staff responsible for delivery of third year modules. Our teaching staff liaise closely with colleagues at the University, working hard to ensure that you are well-prepared to succeed in the third year.

Former student, Debbie, studied the Foundation Degree in Human Biosciences at Petroc, obtaining a Distinction. She then went on to the University of Plymouth to complete the third year and obtained her BSc in Human Biosciences, with First Class Honours. Debbie is now employed as a Medical Laboratory Scientist at North Devon District Hospital.

A recent student, Nicola, describes how she fell in love with Human Biosciences, enjoying every aspect of her Foundation Degree and meeting some amazing people. Nicola progressed to the University of Plymouth to top up to a full BSc and gained a 2:1. Another student, Alison, says she found the Foundation Degree very challenging, requiring a lot of hard work and self-motivation. She also commented that it is great to have somewhere on your doorstep that allows you to study towards a degree. Alison, studied in the third year at the University of Plymouth and was awarded First Class Honours.

This Programme Quality handbook contains important information including the approved programme specification Module Records.

Note: The information in this handbook should be read in conjunction with the current edition of:

- Your Programme Institution & University Student Handbook which contains student support based information on issues such as finance and studying at HE
 - o available at:
https://my.petroc.ac.uk/moodle/moodle_3/course/view.php?id=682
- Your Module, Teaching, Learning and Assessment Guides
 - o available at: https://my.petroc.ac.uk/moodle/moodle_3/course/view.php?id=682
- Your University of Plymouth Student Handbook
 - o available at:
<https://www.plymouth.ac.uk/your-university/governance/student-handbook>

Programme Specification

2.1 Aims of the Programme:

The programme is intended to:

1. Provide students with the opportunity to acquire knowledge, skills and scientific knowledge relevant to a wide range of opportunities in the increasingly important area of human issues e.g. biomedical research, sports science, pharmaceutical industry, health counselling, exercise and leisure industry.
2. Provide a wide range of diverse modules all connected within the common theme of "Human Biosciences". This will ensure students are introduced to a wide range of concepts, learning experiences and situations. Where possible, the programme will take advantage of the unique geographical location of the college to maximize the regional benefits of the North Devon area.
3. Enrich curriculum content and teaching quality through the professional and/or research expertise of staff and through links with external organizations.
4. Encourage progressive development of the learners' scientific knowledge, subject specific skills, practical competence and generic attributes necessary for preparing for work; enhancing existing employment, in preparation for a career change.
5. Ensure that the work based learning placements are mutually productive and enhance the career prospects of students, the productivity of the employers, and the network links between Petroc and local industries.
6. Develop the underpinning skills for students to become independent learners in the constantly evolving field of Human Biosciences.
7. Provide an intellectually stimulating practical framework of study to allow skills development.

2.2 Programme Intended Learning Outcomes (LO):

By the end of this programme the student will be able to:

1. Analyse, critically evaluate and demonstrate knowledge and understanding of the processes and mechanisms of life, from molecular to cellular, and from organism to community;
2. Perform a range of practical and presentational techniques, including data analysis and statistics;
3. Demonstrate knowledge of the current developments in the Biosciences and their application, and the ethical issues involved;
4. Be aware of the contribution of Biosciences to debate and controversies;

Develop an understanding of new technologies in molecular and cellular biology, which are impacting on human welfare, health and disease and that have profound ethical implications, so that contributions to informed discussion can be made.

Progression to Further Study

Please note there is a deadline for progression applications (circa mid-November with the actual date determined annually) and places may be subject to availability.

Your Programme Manager is able to contact University staff in order to communicate your questions regarding progression to programmes at University of Plymouth.

Information on individual programme progression is available in your Programme Specification, on your Institution website and also on the University of Plymouth course web page (<https://www.plymouth.ac.uk/courses/undergraduate/bsc-human-biosciences>)

BSc (Hons) Human Biosciences Stage 3 (Plymouth University)

BSc (Hons) Biosciences Stage 3 (Plymouth University)

Programme Structure

Year	Modules	Credits
1	HB101 Foundation in biochemistry	20
	HB102 Microbiology	20
	HB106 Introduction to statistics	10 (Semester 2)
	HB107 Human life cycle	20
	HB108 Genes, organisms and populations	20
	HB110B Developing graduate skills	20
	HB112 Introduction to anatomy	10 (Semester 1 – exam in January)
2	HB209 Biochemistry: molecules, cells and the body	20
	HB210 Microbial world	20
	HB211 Genetic continuity and diversity	20
	PETR2121 Immunology and cell biology	20
	HB213 Human physiology	20
	HB214 Human bioscience research	20
3	See University of Plymouth course web page	

Module Records

SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB101	MODULE TITLE: Foundation in Biochemistry
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CREDITS: 20	FHEQ LEVEL: LEVEL 4	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: N
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module examines, at the molecular level, the essential features of living organisms starting with the chemical and biological properties of biological molecules and the assembly of supra-molecular biological structures. The catalysis and control of biochemical reactions are introduced as are some energy transduction systems and flow of genetic information.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

The aim of the module is to present an overview of the structural and functional aspects of living systems at molecular level by studying

- the ability of organisms to convert molecules into living systems
- the ability of organisms to extract energy from the environment
- the ability of organisms to replicate

ASSESSED LEARNING OUTCOMES: (additional guidance below)

At the end of the module the learner will be expected to be able to:

1. List the principal groups of biological molecules; identify their important chemical and structural systems at the molecular level
2. Demonstrate an understanding of the importance of different types of chemical bonding and their contributions to the properties and functions of biological molecules
3. Demonstrate an understanding of biocatalysts and mechanisms of biocatalysts
4. State the principles that underlie central metabolic pathways and the relationship of these pathways to the means by which organisms extract energy from the environment
5. Describe and demonstrate an understanding of the energy conversion processes that take place in cells and of the importance of membranes, membranes transport and ion gradients in these processes
6. Describe and demonstrate an understanding of the molecular mechanisms of genetic information storage, repair and transmission within and between generations of living cells 1-6
7. Evaluate biochemical data

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications
<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements
<http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE: 112
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MODULE LEADER: Debbie Bunker	OTHER MODULE STAFF:
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Summary of Module Content

Biochemistry underpins the study of biology and this module provides an introduction to the chemistry of life. Many concepts will already be familiar from previous study but will be taken to the next level in order to prepare for the study of metabolism next year. Practical work based on simple techniques provides an introduction to scientific investigation and report writing essential at higher levels. Once the major biological macromolecules have been studied the pathways of respiration are introduced as a lead in to the second year metabolic studies.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	37	
Practical work	8	
Private study/assessment	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	ALOS 1-7
	T_		0 %	
Coursework	C1	Practical report/essay	60%	ALO 1, 2 & 7
Practice	P_		0%	

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB102	MODULE TITLE: MICROBIOLOGY
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CREDITS: 20	FHEQ LEVEL: LEVEL 4	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*
 This module provides an opportunity to extend knowledge of basic microbiology, with an emphasis on the background and practice of laboratory techniques.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

- MODULE AIMS:**
- Define micro-organisms and describe how they are studied and classified
 - Describe prokaryotic cell structures and growth requirements
 - Discuss the role of micro-organisms in the environment and in human affairs

- ASSESSED LEARNING OUTCOMES:** (additional guidance below)
 At the end of the module the learner will be expected to be able to:
1. Understand what micro-organisms are and how they were discovered.
 2. Have knowledge of prokaryotic cell structure/function & compare this to eukaryotic cells.
 3. Know the requirements for microbial growth and laboratory methods used for culture.
 4. Name and characterise some bacteria of clinical/ environmental/industrial importance.
 5. Know what fungi, protists and viruses are and how they fit into the living world.
 6. Manipulate bacteria in the laboratory, using aseptic techniques & good laboratory practice.
 7. Carryout microbiological experiments and evaluate and report the results.
 8. Describe & communicate scientific information in a variety of formats.

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE:
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MODULE LEADER: Ruth Maclaren	OTHER MODULE STAFF:
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Summary of Module Content

The aim of this module is to introduce the student to microorganisms and the techniques used to study them, with a focus on prokaryotic microbial cells. Structures and characteristics of bacterial cells will be learnt together with growth dynamics, pathogenesis and antibiotics, including antibiotic resistance mechanisms. We take a look at our symbiotic relationship with bacteria and discuss media representation of them. The incredible diversity of these organisms will become evident through carefully planned laboratory sessions which provide training in the practical skills needed for microbiology in research or in the workplace.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*

Scheduled Activities	Hours	Comments/Additional Information
Lectures	35	
Practical work	10	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments <i>Include links to learning objectives</i>
Written exam	E_	Exam	40%	ALOs 1, 2, 3, 4, 5.
	T_		0%	
Coursework	C_	Essay/ Practical	60%	ALOs 1 – 6, 8
Practice	P_		0%	

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB106	MODULE TITLE: Introduction to Statistics
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CREDITS: 10	FHEQ LEVEL: 4	JACS CODE:
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PRE-REQUISITES: None	CO-REQUISITES: None	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*
 This module applies previously learned mathematical skills within a scientific context as well as building on these skills to allow students to apply statistics to testing scientific data.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	0%	C1	100%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Bioscience

Professional body minimum pass mark requirement: N/A

- MODULE AIMS:**
- Plan a scientific investigation and formulate a hypothesis
 - Present data in a clear and logical fashion and compare data sets
 - Test data in order to support or reject a hypothesis

- ASSESSED LEARNING OUTCOMES:** (additional guidance below)
 At the end of the module the learner will be expected to be able to:
1. Plot arithmetical and logarithmic graphs for a range of data (Cognitive / intellectual skills: analysis, evaluation)
 2. Compare groups of data and apply relevant statistical tests (Cognitive / intellectual skills: analysis, evaluation)
 3. Calculate SD and SE and appreciate the relevance of the tests (Cognitive / intellectual skills: analysis, evaluation)
 4. Plan sampling techniques to gain relevant sample sizes to test hypotheses (Cognitive / intellectual skills: analysis, evaluation, application)

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: Spring

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE: 112
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MODULE LEADER: Gemma Quick	OTHER MODULE STAFF:
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Summary of Module Content

The course involves a basic use of Statistics and Statistical testing which learners will be able to apply to their experimental results. Learners are encouraged to make full use of ICT in the form of presenting their work using word-processing and spread-sheet software. Spread-sheet software may also be used to check test results. Various statistical tests and their appropriate uses are considered together with basic work on statistical measures, different types of data and representation of data such as standard deviation and histograms. Hypothesis testing using tests which include the Mann-Whitney U test, Chi-Square test and t-test. Similar testing is considered using correlation and correlation coefficients. Assessment takes the form of five assessments each covering either a particular statistical test and an associated hypothesis test or use of data representation.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Classroom	30	
Private study/assignments	70	
Total	100	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E_		0%	
	T_		0%	
Coursework	C1		100%	Workbook covering statistical and hypothesis tests and use of data representation
Practice	P_		0 %	
Updated by: Megan Kavanagh Date: 09/09/2021				Approved by: Linda Rolfe Date: 09/09/2021

SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB107	MODULE TITLE: Human Life Cycle
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CREDITS: 20	FHEQ LEVEL: 4	JACS CODE:
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PRE-REQUISITES: None	CO-REQUISITES: None	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module focuses on the human life cycle from conception to old age and involves many areas that students may already have some prior knowledge of. Areas of study include contraception, infertility, as well as the stages undergone by an organism from one primary form, as a gamete, through the developmental stages that result in the adult. The module also deals with the nutritional requirements needed for these changes, and the results in under-nutrition.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Bioscience

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

The module aims to allow students to develop an understanding of the biological changes and processes involved in the human life cycle including reproduction, development and ageing.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

At the end of the module the learner will be expected to be able to:

1. Demonstrate an understanding of the biological changes involved in the human life cycle (Knowledge and understanding: knowledge base)
2. Explain the processes involved in reproduction, development and ageing of the human individual (Knowledge and understanding: knowledge base)
3. Recognise and illustrate stages of embryological development and ageing (Knowledge and understanding: knowledge base)
4. Carry out simple laboratory procedures (Cognitive / intellectual skills: application)

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE: 112
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MODULE LEADER: Linda Rolfe	OTHER MODULE STAFF:
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Summary of Module Content

Through anatomy, physiology and histology seminars and lectures you will learn about the development of the human from conception to old age. You will also learn about hormonal control of reproduction. Practical skills are developed in the use of microscopes and you will be expected to identify and draw relevant structures. Assessment is through one essay, with reference to histology.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	35	
Practical work	10	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	LO 1-3
	T1			
Coursework	C1	Essay with histology	60%	LO 1-3, 4

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB108	MODULE TITLE: Genes, Organisms and Populations
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CREDITS: 20	FHEQ LEVEL: LEVEL 4	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*

In this module you are introduced to the structure and function of genes and how these, together with environmental factors, affect the characteristics of populations. We look at how a copy of the genetic code is passed on every time a cell divides. Principles of protein synthesis and mutations are described. Mendelian inheritance is investigated and different patterns of inheritance are explained and predicted using a range of examples. We use the Hardy-Weinberg equation to look at expected frequencies of characteristics in populations, and some reasons why these do not always occur.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Describe replication of nucleic acids and processes involved in gene expression
- Illustrate the process of cell division and analysis and interpret patterns of inheritance
- Explain and review variation in population structure; discuss the theories of speciation

ASSESSED LEARNING OUTCOMES: (additional guidance below)

1. Describe DNA structure, replication and expression in general terms (Knowledge and understanding: knowledge base; cognitive/intellectual skills: synthesis)
2. Recognise and define the basic genetic terms; e.g. gene, allele, genotype, phenotype, etc. (Knowledge and understanding: knowledge base)
3. Give a brief account of the principal events in a eukaryotic cell cycle (Knowledge and understanding: knowledge base)
4. Describe and communicate scientific information in a variety of formats. (Key transferable skills: communication)
5. Undertake analysis of genetic crosses/ predict outcomes (Cognitive/intellectual skills: synthesis, key transferable skills: problem solving.)

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
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- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
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SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE: 112
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MODULE LEADER: Sue Clarke	OTHER MODULE STAFF:
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Summary of Module Content

In this module you are introduced to the structure and function of genes and how these, together with environmental factors, affect the characteristics of populations. Principles of protein synthesis and mutations are described. Control of gene expression is illustrated in the lab practical. Mendelian inheritance is investigated and different patterns of inheritance are explained and predicted using a range of examples. We use the Hardy-Weinberg equation to look at expected frequencies of characteristics in populations, and some reasons why these do not always occur.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	40	
Practical work	5	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	LO 1,2,3 and 5
	T_		0%	
Coursework	C1	Report	60%	LO 4

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB110B	MODULE TITLE: Developing Graduate Skills
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CREDITS: 20	FHEQ LEVEL: LEVEL 4	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*
 This module is designed to enable students to demonstrate that they have all the qualities and transferable skills necessary for appropriate academic work and employment requiring the exercise of responsibility and decision making, including the ability to relate their professional practice to underlying theory and principles.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	0%	C1	100%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

- MODULE AIMS:**
- To enable students to develop a comprehensive portfolio of evidence that supports their career development and practice.
 - To enable students to demonstrate an approach to their practice that is informed by up to date and relevant theoretical perspectives.
 - To support students in developing as autonomous learners.

- ASSESSED LEARNING OUTCOMES:** (additional guidance below)
 At the end of the module the learner will be expected to be able to:
1. Demonstrate how relevant theoretical perspectives have informed and enhanced your practical experience and/or knowledge within your subject area (LO1)
 2. Plan for, reflect upon, and demonstrate with evidence from own practice, the ability to work independently and in a team, using effective communication skills (LO2)
 3. Evaluate your weaknesses and strengths in relation to your experiential learning. Plan for the development of skills towards your career goals. Reflect upon fulfilling your potential role within the work place/organisation (LO3)
 4. Demonstrate an ability to identify, locate, analyse, correctly acknowledge, and use information within their subject area (LO4)

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications
<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements
<http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE: 112
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MODULE LEADER: TBC	OTHER MODULE STAFF: Linda Rolfe
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Summary of Module Content

Good graduate skills are essential in today's competitive society. The developing graduate skills module helps build and polish these skills. Time management, reflection, research, planning and organisation, communication, and studying are just some of the skills covered. This module also includes an extensive library induction facilitated by one of our specialist librarians, helping students develop excellent research and referencing skills, and provides training on the extremely useful Plymouth University Portal. Workshops are provided on CV writing, self-assessment auditing, mini skills presentations, lesson planning and essay writing. The development of critical thinking and communication skills are furthered through discussions and debates on topical subjects relevant to human bioscience. Work experience is integral to this module.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	45	
Work Based Learning	55	
Private study/assignments	100	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Coursework	C1	Work Based Learning Portfolio	100%	LO 1-4

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB112	MODULE TITLE: Introduction to Anatomy
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CREDITS: 10	FHEQLEVEL: 4	JACS CODE: B110
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PRE-REQUISITES: N	CO-REQUISITES: N	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*
 This module addresses definitions and concepts; anatomical language and terminology organisation of the human body; cell function; body communication; integumentary system; endocrine and nervous systems; musculoskeletal system; digestive system; urinary system; cardiovascular system; respiratory system. Artificial tissues and prostheses.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0%
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

- MODULE AIMS:**
- Demonstrate a basic understanding of anatomical position and terminology.
 - Describe the gross anatomy of human body systems.
 - Identify the histology of the major tissue types within the body.
 - Investigate current and future alternative anatomical devices (biomechanics) and artificial tissues (tissue engineering).

- ASSESSED LEARNING OUTCOMES:** (additional guidance below)
 At the end of the module the learner will be expected to be able to:
1. Identify human body structures
 2. Describe the body systems
 3. Identify a wide range of histological specimens and be able to explain how their properties suit them for biological function
 4. Have knowledge of current artificial replacements for a range of anatomical structures including analysis of function
 5. Have knowledge of current research into tissue engineering and future areas of interest

DATE OF APPROVAL: 2012/13	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 2013/14	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: Autumn

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
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SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE: 112
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MODULE LEADER: TBC	OTHER MODULE STAFF: Linda Rolfe
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Summary of Module Content

This module introduces the student to the fundamentals of gross anatomy and histology, and explores man-made alternatives on a gross and cellular level. Anatomy is an important branch of biology and this module will include an introduction into modern methods of viewing the body externally and internally. This module will investigate current and future research into a range of prostheses, including dentures, hearing aids, artificial eyes and gastric bands. Tissue engineering research and its current abilities and failings will be discussed. This module will underpin the physiology module in the second year with relevant links to the cell biology and immunology module in the second year.

SUMMARY OF TEACHING AND LEARNING *[Use HESA KIS definitions]*

Scheduled Activities	Hours	Comments/Additional Information
Lectures	15	This will include student presentations and formative assessment in the form of 'spot' tests using anatomical models, as used in most medical schools for anatomy teaching.
Practical work	8	Animal dissection - one-day session to prevent long term storage of dissected material. Histology sessions, to include microscope work and the completion of a workbook, including drawings on a cellular level.
Guided Independent study	77	Students should explore areas of interest and current research publications
Total	100	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	Learning outcomes 1-5
	T_			
Coursework C1		Histology and/or dissection workbook	60%	Learning outcomes 1, 2 and 3

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB209	MODULE TITLE: Biochemistry: Molecules, cells and the body
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CREDITS: 20	FHEQ LEVEL: LEVEL 5	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*

The module illustrates how the complex collection of chemical reactions required for human life is coordinated on a range of levels: control of pathways; compartmentalisation of metabolic processes between organelles and tissues and the sharing of metabolic load between tissues.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- To show how the mass of chemical reactions that make up human metabolism are integrated and controlled from the level of individual enzymes and enzyme complexes to the level of the whole body
- To provide sufficient grounding in metabolic organisation and strategies for students to be able to recognise and to understand these when presented with novel sections of metabolism
- To illustrate, through practical experience, selected aspects of primary metabolism and the methodology used in the study of metabolism

ASSESSED LEARNING OUTCOMES: (additional guidance below)

At the end of the module the learner will be expected to be able to:

1. Explain in terms of energetics and control, why paired anabolic and catabolic pathways differ (Knowledge and understanding: knowledge base)
2. Describe the primary pathways of human carbohydrate, fatty acid and nitrogen metabolism in terms of inputs and outputs; key metabolic transformations; key metabolites that form junction points; and the role of enzyme co-factors and vitamins (Knowledge and understanding: knowledge base)
3. Use examples of the pathways of primary metabolism and their response to changing physiological circumstances to demonstrate their understanding of the hierarchy of metabolic control in humans (Knowledge and understanding: knowledge base)
4. Recognise examples of metabolic compartmentalisation, both at the cellular and at the cellular and at the tissue level, using examples from human primary metabolism (Knowledge and understanding: knowledge base)
5. Describe the theoretical basis of some analytical and preparative biochemical methods including spectrophotometers (Knowledge and understanding: knowledge base, cognitive / intellectual skills: analysis)
6. Describe and communicate scientific information in a variety of formats (Key transferable skills: communication)

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications
<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements
<http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE:
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MODULE LEADER: Linda Rolfe	OTHER MODULE STAFF:
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Summary of Module Content

This exciting module builds on the foundations of biochemistry established in the first year to explore the essential metabolic pathways that maintain life. The subtitle (molecules, cells and the body) reflects the fact that although the starting point may be molecules, the cellular level and the whole organism must be considered.

As well as understanding the correct operation of these pathways, the consequences of malfunction are also considered and students are encouraged to research the medical aspects of genetic disorders that disrupt normal metabolism. A clinical biochemist from our local hospital laboratory is usually invited to give a lecture to support this aspect of study.

Practical investigations at this level are mainly 'virtual'.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	35	
Practical work	10	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	ALO 1- 5
	T_		0% 0%	
Coursework	C1	Essay	60%	ALO 1-4, 6

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB210	MODULE TITLE: MICROBIAL WORLD
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CREDITS: 20	FHEQ LEVEL: LEVEL 5	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*
 The module reviews the diversity of the microbial work including bacteria, fungi, protists and viruses. It emphasizes their importance in the natural environment and in human affairs.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0%
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

- Develop the students' knowledge of the diversity of the microbial world
- Emphasise the role of micro-organisms in the natural environment and in human affairs

ASSESSED LEARNING OUTCOMES: (additional guidance below)
 At the end of the module the learner will be expected to be able to:

1. Know the diversity of structure and function in the bacteria, fungi, protists and viruses
2. Explain the use of bacteria, fungi, protists and viruses in Industrial Microbiology and their role in the natural environment.
3. Apply common techniques used in the laboratory to study microorganisms.
4. Formulate and carry out an individually selected research project in the areas of microorganisms in the natural environment or in human affairs.
5. Interpret and analyse data to demonstrate an understanding of your acquired knowledge.
6. Write up and present the research project as a scientific report.

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE:
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MODULE LEADER: Ruth Maclaren	OTHER MODULE STAFF:
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Summary of Module Content

In this module you will discover the amazing world of microorganisms, how they help create the biosphere and support life on earth. Microbes are a source of useful products and our exploitation of them to benefit us underpins this module. We explore fungi, mycorrhiza, rhizobia and Protista, and their roles in nutrient cycles and symbiosis. The chemical language by which bacteria communicate is introduced. We look at astrobiology alongside extremophiles and archaea, and we discuss viruses and prions. A variety of experiments are planned which build upon the techniques learnt in the first year, but they are designed to offer ideas for the research project. The research project comes in the latter part of this module. Lasting several weeks, it comprises an experiment designed and carried out by you, culminating in a presentation and written report.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	30	
Practical work	15	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	ALOs 1 and 2.
	T_		0%	
Coursework	C1	Research Project	60%	ALOs 3-6

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB211	MODULE TITLE: Genetic Continuity and Diversity
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CREDITS: 20	FHEQ LEVEL: LEVEL 5	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module considers the processes that maintain genetic stability and promote genetic diversity at different levels of biological organisation. It then develops a broad range of applications which have resulted from increasing awareness of the genome, its structure, and interaction with the environment

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

This module aims to develop an understanding of genetic processes from the molecular to the population level of biological organisation, and to illustrate selected applications of these.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

At the end of the module the learner will be expected to be able to:

1. Build upon understanding of genetics/inheritance covered in stage 1
2. To develop an understanding of Gene Structure and expression
3. Describe the process of replication of genetic material
4. Explain models of mutagenesis
5. Demonstrate an understanding of genetic instructions and illustrate how they are involved in the evolution of genetic systems
6. Detail applications of genetics resulting from an increasing awareness of the genome
7. Interpret and analyse data
8. Describe and communicate scientific information in a variety of formats

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
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- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE:
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MODULE LEADER: TBC	OTHER MODULE STAFF: Linda Rolfe
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Summary of Module Content

This module focuses on genetics from the molecular to the population level, with a particular focus on medical genetics, biotechnology and informed ethical debate. Students will learn about DNA replication and the control of gene expression in both prokaryotes and eukaryotes. The origins and consequences of mutations at the single gene and chromosomal level will then be explored, leading on to topics such as evolution and oncology.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	40	
Practical work	5	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	LOs 1-7
	T_		0%	
Coursework	C1	Essay	60%	LOs 1, 7 & 8

Updated by: Megan Kavanagh

Date: 09/09/2021

Approved by: Linda Rolfe

Date: 09/09/2021

SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: PETR2121	MODULE TITLE: Immunology and Cell Biology
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CREDITS: 20	FHEQ LEVEL: LEVEL 5	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*
 This module covers the basic structures and functions of eukaryotic cells together with the principles underlying the major techniques used in modern studies of cellular biology. It contains a comprehensive introduction to fundamental immunology with particular reference to cellular and humoral responses.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]					
WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:
 The module aims to explore the structure/function relationships of cell components and to outline some of the mechanisms by which cellular activity is regulated. It will also introduce cellular and humoral aspects of classical immune responses. To encourage wider reading on subject areas and promote the need to constantly keep up with current research.

ASSESSED LEARNING OUTCOMES: (additional guidance below)
 At the end of the module the learner will be expected to be able to:

1. Describe the structure and function of membranes and membranous organelles
2. Recognise the importance of the cell cycle and the changes in DNA and chromosomes which accompany it
3. Understand and interpret data from multiple cell biology techniques
4. Describe the major components of the cytoskeleton and identify a range of functions which it performs
5. Demonstrate knowledge and understanding of recombinant DNA techniques
6. Demonstrate understanding and knowledge of cellular and humoral aspects of classical immune responses

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

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ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE:
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MODULE LEADER: Sue Clarke	OTHER MODULE STAFF:
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Summary of Module Content

This module covers the basic structures and functions of eukaryotic cells, this includes a variety of methods used to visualize cells and other major techniques used in modern cellular biology. Cell biology will provide a more in depth look at cellular structure touched on in the first year anatomy module. Where possible and relevant a clinical aspect is included in both cell biology and immunology teaching. Student presentations and regular group discussions on current research is a key part of this module.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	40	
Practical work	5	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	LO 1-6
Coursework	C1	Research exercise including data analysis	60%	<i>Learning outcome 1, 3 and 6</i>

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB213	MODULE TITLE: Human Physiology
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CREDITS: 20	FHEQ LEVEL: LEVEL 5	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*

Human physiology is the study of the functions of the various systems of the human body and the changes that occur during activity. It is a largely experimental science – knowledge being based on direct experimental evidence, and where this may not exist, using evidence from animals closely related to man. This module is predominantly classroom based with lectures, seminars and exploring case studies, as well as some practical work.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	40%	C1	60%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

This module aims to develop an understanding of the physiological processes involved in human respiration, circulation, osmoregulation, excretion and digestion. It provides experience of physiological measurement, data acquisition and analysis.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

At the end of the module the learner will be expected to be able to:

1. Describe the fundamental principles involved in these systems (Knowledge and understanding: knowledge base)
2. Explain in detail the mechanisms of operation of these systems (Knowledge and understanding: knowledge base, cognitive / intellectual skills: synthesis)
3. Carry out a physiological measurement, data acquisition and analysis (Cognitive / intellectual skills: analysis, practical skills: application)
4. Describe and communicate scientific information in a variety of formats (Key transferable skills: communication)

DATE OF APPROVAL: May 2003	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2003	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications <http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements <http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE:
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MODULE LEADER: Linda Rolfe	OTHER MODULE STAFF:
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Summary of Module Content

Physiology is the science of life. It involves an understanding of how the body works from the molecular basis of cell function to the integrated behaviour of the whole body. Some major body systems will be covered in this module, together with the mechanisms that are involved in their control and co-ordination. Research in physiology not only helps an understanding of how the body works; it also helps develop a realisation of what goes wrong in disease and sometimes facilitates the identification of new treatments.

SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]

Scheduled Activities	Hours	Comments/Additional Information
Lectures	40	
Practical work	5	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E1	Exam	40%	LO 1 and 2
	T_		0%	
Coursework	C1	Data analysis	60%	LO 1, 2, 3 and 4

Updated by: Megan Kavanagh Date: 09/09/2021	Approved by: Linda Rolfe Date: 09/09/2021
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SECTION A: DEFINITIVE MODULE RECORD. *Proposed changes must be submitted via Faculty Quality Procedures for approval and issue of new module code.*

MODULE CODE: HB214	MODULE TITLE: Human Bioscience Research
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CREDITS: 20	FHEQLEVEL: LEVEL 5	JACS CODE:
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PRE-REQUISITES: NONE	CO-REQUISITES: NONE	COMPENSATABLE: Y
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SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module focuses on core skills and techniques in laboratory studies and data analysis essential to Human Biosciences. Practical work needs to be performed safely and efficiently within an appropriate experimental design, results described and analysed competently, and outcomes effectively presented. Students complete a chosen research project and a literature review of a topic addressing wider issues.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions]

WRITTEN EXAMINATION		COURSEWORK		PRACTICE	
E1 (Formally scheduled)	0%	C1	100%	P1	0% or Pass/Fail
E2 (OSCE)	0%	A1	0%		
T1 (in-class test)	0%				

SUBJECT ASSESSMENT PANEL Group to which module should be linked: Human Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

To develop competence in the design and execution of a biology-related research study, data gathering and interpretation, and an ability to communicate their findings by means of oral and written reports. To encourage students to carry out self-directed study of current issues and concepts relevant to their degree programme.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

At the end of the module the learner will be expected to be able to:

1. As part of a biology-related research study, design and execute the collection of data via any combination of laboratory work, field work, questionnaire and reference to scientific literature.
2. Analyse, interpret and critically evaluate data in the context of contemporary subject-specific practice and literature.
3. Discuss their study in the context of related literature.
4. Demonstrate familiarity with good laboratory practice and relevant safety codes.
5. Communicate their findings in an appropriate scientific manner.

DATE OF APPROVAL: 07/02/2014	FACULTY/OFFICE: Academic Partnership
DATE OF IMPLEMENTATION: September 2014	SCHOOL/PARTNER: Petroc
DATE(S) OF APPROVED CHANGE: XX/XX/XXXX	TERM: All Year

Additional notes (for office use only):

Additional Guidance for Learning Outcomes:

To ensure that the module is pitched at the right level check your intended learning outcomes against the following nationally agreed standards

- Framework for Higher Education Qualifications
<http://www.qaa.ac.uk/Publications/InformationAndGuidance/Documents/FHEQ08.pdf>
- Subject benchmark statements
<http://www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/SUBJECT-GUIDANCE/Pages/Subject-benchmark-statements.aspx>
- SEEC level descriptors <http://www.seec.org.uk/academic-credit/seec-credit-level-descriptors-2010>
(scroll to pdf link at bottom of page)
- Professional, regulatory and statutory (PSRB) accreditation requirements (where necessary e.g. health and social care, medicine, engineering, psychology, architecture, teaching, law)
- QAA Quality Code <http://www.qaa.ac.uk/AssuringStandardsAndQuality/quality-code/Pages/default.aspx>

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

Items in this section must be considered annually and amended as appropriate, in conjunction with the Module Review Process. Some parts of this page may be used in the KIS return and published on the extranet as a guide for prospective students. Further details for current students should be provided in module guidance notes.

ACADEMIC YEAR: 2021-22	NATIONAL COST CENTRE:
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MODULE LEADER: Lizzie Grew	OTHER MODULE STAFF:
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<p>Summary of Module Content Highly varied, but must include: consideration of experimental or sampling design and execution; data gathering, analysis and interpretation, literature search and review; report writing; science communication.</p>
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SUMMARY OF TEACHING AND LEARNING [Use HESA KIS definitions]		
Scheduled Activities	Hours	Comments/Additional Information
Lectures/workshops	6	
Practical	6	
Research Project	33	
Private study/assignments	155	
Total	200	(NB: 1 credit = 10 hours of learning; 10 credits = 100 hours, etc)

Category	Element	Component Name	Component weighting	Comments Include links to learning objectives
Written exam	E		0%	
	T		0%	
Coursework	C1	Literature Review and Project Report	100%	LO 1 – 5

<p>Updated by: Megan Kavanagh Date: 09/09/2021</p>	<p>Approved by: Linda Rolfe Date: 09/09/2021</p>
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