



**UNIVERSITY
CENTRE**
SOUTH DEVON



**UNIVERSITY OF
PLYMOUTH**

PROGRAMME QUALITY HANDBOOK 2020-2021

FdSc Biosciences



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1. Welcome and Introduction to FdSc Biosciences.

Welcome to the Foundation Degree in Biosciences delivered by University Centre South Devon. University Centre South Devon is a proud partner of University of Plymouth offering you the opportunity to study in state of the art facilities, located in the beautiful English Riviera. We are confident you will enjoy your time here.

This programme has been designed to equip you with the skills and knowledge base required to work in your chosen specialism or other graduate opportunities. It is also a platform from which you can undertake additional vocational and academic qualifications.

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 Institution & University Student Handbook which contains student support based information on issues such as finance and studying at HE
 - o Available in University News & Information on Moodle.
- University of Plymouth's Student Handbook
 - o available at:
<https://www.plymouth.ac.uk/your-university/governance/student-handbook>

1.1. Programme Management

Role	Person
Programme Manager and HE Lead	Luke Peakman
Programme Coordinator for Science	Janet Ellis
Section Head	James McCauley
Assistant Principal	Matt Burrows

1.2. Personal Tutor

Personal tutors are designated as a sustained and first point of reference for individual students on personal, domestic or academic matters; detailed information will be available in your teaching, learning and assessment handbooks.

Further information about personal tutoring at UCSD can be found by following this link to the [Student Development](#) policy.

The personal tutor for both Level 4 is Luke Peakman and for Level 5 is Kenneth Armstrong.

Luke Peakman: Programme Manager and Personal Tutor and Lecturer

Email: lukepeakman@southdevon.ac.uk

Tel: 01803 540668

I studied a degree in genetics at Sheffield University and went from there to research in the fields of immunology at Cambridge University and then biochemistry at Bristol University. I then moved to work in industry as an analytical chemist and microbiologist. For the last twelve years I have worked at South Devon College initially as the Laboratory Manager and then as a lecturer in biological sciences.



Module Leader:

- SOUD1494 Laboratory Techniques
- SOUD1271 Genes, Genetic Analysis and Evolution
- SOUD1498 Professional Practice
- SOUD2451 Molecular Genetics, Biotechnology and Cancer
- SOUD2451 Immunology
- SOUD2453 Work Experience

HE Qualifications:

- BSc (Hons) Genetics
- PGCE Further Education

Professional Membership:

- Member of the Royal Society of Biology
- Member of the Society for Experimental Biology
- Fellow of the Higher Education Academy

Research Interests and Subject Specialisms:

- Human evolution
- DNA-Protein interactions

Peakman, L. J., Szczelkun, M. D. (2009) '**S-adenosyl homocysteine and DNA ends stimulate promiscuous nuclease activities in the Type III restriction endonuclease EcoPI.**' *Nucleic Acids Research* 37(12):3934-45

Ramanathan Subramanian, P., van Aelst, K., Sears, A., Peakman, L. J., Diffin, F. M., Szczelkun, M. D., Seidel, R. (2009) '**Type III restriction enzymes communicate in 1D without looping between their target sites.**' *Proceedings of the National Academy of Sciences of the United States of America*, 106(6):1748-53.

Sears, A., Peakman, L. J., Wilson, G. G., Szczelkun, M. D. (2005) '**Characterization of the Type III restriction endonuclease PstII from *Providencia stuartii***' *Nucleic Acids Research*, 33(15): p4775 - p4787

Peakman, L. J., Szczelkun, M. D. (2004) '**DNA communications by Type III restriction endonucleases--confirmation of 1D translocation over 3D looping.**' *Nucleic Acids Research*, 32(14): p4166 - p4174

Peakman, L.J., Antognozzi, M., Bickle, T.A., Janscak, P. and Szczelkun, M.D. (2003) '**S-adenosyl methionine prevents promiscuous DNA cleavage by the EcoP1I type III restriction enzyme.**' *Journal of Molecular Biology*, 333(2), p321 – p335

Reljic R, Wagner S.D., Peakman L.J. and Fearon D.T. (2000) '**Suppression of signal transducer and activator of transcription 3-dependent B lymphocyte terminal differentiation by BCL-6.**' *Journal of Experimental Medicine*, 192 (12): p1841- p1848

1.3. Module Leaders

Janet Ellis: Programme Coordinator for Science and Lecturer

Email: jellis@southdevon.ac.uk

Tel: 01803 540503

I am the programme Co-ordinator for Science within the A Level Section, which is where the FdSc Biosciences programme sits. I have been teaching biological sciences for over 40 years and in that time I have taught across a wide range of levels and courses. Currently I teach on the Access to HE programme as well as teaching a Level 5 module on the FdSc Biosciences programme. I have driven forward lots of changes in the teaching of science at South Devon College including being instrumental in the development of several of the science degree programmes. I am acting as an External Examiner for the accreditation of a new programme at the University of Ulster.



Module Leader:

- SOUD2218 Cells and Adaptations

HE Qualifications:

- BSc (Hons) Agricultural Botany (Reading)
- Post-graduate teaching certificate (Southampton)
- HE Certificate in Teaching Forensic Science (Teesside University)
- MA Education (Open University)

Professional Membership:

- Member of the Biochemical Society

Research Interests and Subject Specialisms:

Although I started my career as a botanist I now teach mainly cell and human biology. I attend conferences whenever possible and have recently attended a number of conferences run by the Biochemical Society including, most recently, 'Dynamic Cell III' and 'New Horizons in ESCRT Biology'.

Matt Rossin: Lecturer in Biological Sciences

Email: mrossin@southdevon.ac.uk

Tel: 01803 540668

I have 14 years teaching experience in a wide range of courses from level 2 up to level 5. These include A-levels, BTEC (Level 3 and 2), GCSE, Access to HE, Level 2 and 3 Projects and HE Level 4 and 5. Subjects range from Human Biology, Ecology and Conservation, Evolution and Diversity, Science in Society, Statistics, Animal Science, Marine Science, Environmental Science and the Extended Project Qualification

Module Leader:

- SOUD1495 Cell Biology
- SOUD2220 Biodiversity and Speciation

HE Qualifications:

- MSc Environmental Biology
- Bsc (Hons) Ecology with Geography
- PGCE (PCET)

Research Interests and Subject Specialisms:

- General Surveyor for Operation Wallacea (Transylvania)
- Marine Mammal & Seabird Surveyor Training (MarineLife)
- Field surveyor for badgers as part of a joint study into the incidence and spread of bovine TB. (University of Warwick/DEFRA)
- Field Techniques for Surveying Invertebrates (Oxford University CPD department)



Kenneth Armstrong: Lecturer in Chemistry and Biological Sciences

Email: Kennetharmstrong@southdevon.ac.uk

Tel: 01803 540379

I studied a BSc (Hons) in Biological and Medicinal Chemistry before moving into industry. My industrial experience includes quality control using a range chromatography techniques and two years research as a laboratory scientist where my work was featured on the BBC programme Horizon. I moved back to academia to study an MPhil at the Peninsula School of Medicine and Dentistry, the project was based mainly in oxidative stress and focused on diabetes mellitus. Before going into teaching I worked for a year in an NHS Chemical Pathology Laboratory where alongside routine testing I processed samples for multiple clinical trials. Since obtaining a PGCE in secondary science I spent two years teaching science in secondary schools before teaching for a year at an international college in Spain. I now lecture at South Devon College where I have spent 5 years teaching courses including A-level chemistry, Access to HE science and leading the delivery of the biochemistry module at degree level. Recently my work with 2nd year degree project students has resulted in being awarded an honorary research fellowship at Exeter University Medical School, where I am currently involved in a collaborative project focusing on the link between oxidative stress and salivary peroxidase. This has now developed into PhD studies with Exeter University.



Module Leader:

- SOUD1496 Biochemistry Toolkit
- SOUD2450 Research Project

HE Qualifications:

- MPhil "High throughput assays of antioxidant capacity and oxidative damage: application to plasma samples from types I and II diabetes mellitus patients and healthy individuals" Peninsula College of Medicine and Dentistry
- PGCE Secondary Science specialising in Chemistry, University College Plymouth St Mark and St John
- BSc Biological and Medicinal Chemistry, Exeter University

Professional Membership:

- Member of the Biochemical Society

Research Interests and Subject Specialisms:

Currently undertaking a PhD project with Exeter University Medical School as an Honorary Research Fellow identifying and quantifying types of salivary peroxidase.

Taylor, E. L., Armstrong, K. R., Perrett, D., Hattersley, A. T. & Winyard, P. G. (2015) 'Optimisation Of An Advanced Oxidation Protein Products Assay: Its Application To Studies Of Oxidative Stress In Diabetes Mellitus.' *Oxidative Medicine and Cellular Longevity*, ID 496271

Armstrong, K., Knight, J., Reeves, J. & Winyard, P. (2008). 'Pholasin®-based chemiluminescent assay for the measurement of superoxide dismutase and SOD mimetics.'

Bioanalysis in Oxidative Stress.' A Biochemical Society focused meeting University of Exeter, UK, 2-3rd April 2008

Knight, J, Ganderton, M, Armstrong, K and Larkins, N (2003). 'The use of Pholasin®-based assays to evaluate anti- and pro- oxidant capacity of extracts of certain functional foods: the effect of these foods on leucocytes in blood.' *Free Radical Biology & Medicine* 35 supplement 1, S39 (92)

Dr Paul Hallas: Lecturer in Chemistry and Biological Sciences

Email: paulhallas@southdevon.ac.uk

Tel: 01803 540379

I have always had an interest in the natural world and the science that underpins it. This led me to undertake my undergraduate degree in Zoology with Marine Zoology at the University of Wales, Bangor, and later to follow this with a Masters and PhD in Marine Biology. My PhD research was entitled 'Ecology and genetics of the invasive alga, *Sargassum muticum*: a multidisciplinary approach to a management problem'. Whilst studying for my PhD I also designed, managed and delivered first, second and third year university level lectures and practical classes in the subject areas of biochemistry, molecular ecology and statistical analysis which were undertaken by students studying the Human Biology, Medical Science, Biology and Wildlife Biology degree programs. I later then became the module leader for the Experimental Design and Data Analysis module. I have also lectured at University of Plymouth in the subject areas of animal behaviour and welfare, animal physiology and parasitology.

Outside of academia I have continued to work within the science sector, including positions at one of the UK's largest environmental consultancies, Scott Wilson, and for the Scottish Environment Protection Agency (SEPA) and CEFAS (Centre for Environment, Fisheries and Aquaculture Science).

Module Leader:

- SOUD1497 Microbiology
- SOUD2221 Human Physiology

HE Qualifications:

- PGCE Secondary Science specialising in Chemistry
- PhD Invasive Marine Species Ecology
- MRes Marine Biology
- BSc (Hons) Zoology with Marine Zoology

Professional Membership:

- Member of the Marine Biological Association of the UK
- Member of The British Ecological Society
- Member of The British Phycological Society
- Member of The Porcupine Marine Natural History Society

Research Interests and Subject Specialisms:

Selected publications and research output include:

Goldstien, S.J., Dupont, L., Viard, F., **Hallas, J.P.**, Nishikawa, T., et al. (2011) 'Global Phylogeography of the Widely Introduced North West Pacific Ascidian *Styela clava*.' *PLoS ONE* 6(2)

Turner, L.M., **Hallas, J.P.** & Morris, S. (2011) 'Population structure of the Christmas Island Blue Crab, *Discoplax hirtipes* (Decapoda: Brachyura: Gecarcinidae) on Christmas Island, Indian Ocean.' *Journal of Crustacean Biology*, 31, 450-457

Turner, L.M., **Hallas, J.P.**, Smith, M. & Morris, S. (in review) 'Phylogeography of the Christmas Island Blue Crab, *Discoplax hirtipes* (Decapoda: Gecarcinidae) on Christmas Island, Indian Ocean.' *Journal of the Marine Biological Association of the UK*.



1.4. Course Contact List Support Staff

Name	Role	Phone number	Email
Alison Tyler	Laboratory Manager	01803 540318	alison Tyler@southdevon.ac.uk
Katrina McFadyen	Laboratory Technician	01803 540318	katrinamcfadyen@southdeovn.ac.uk

1.5. Preparing for your programme

At UCSD, we understand that degree level study is a big step up from previous studies. To help prepare you for the degree we recommend engaging with preparatory activities. Each year UCSD organise step up to HE workshops, with a focus on supporting you to develop your research and writing skills, alongside academic techniques. For more information on the workshops and resources available, please visit our website: <https://www.ucsd.ac.uk/the-first-year-at-university/>.

The Student Support Hub is available throughout the duration of your programme and offers a range of services, acting as a first port of call for academic, study, wellbeing, disability, fees/funding, employability and progression support. When progressing to the next level of study of your higher education, there are also workshops and activities available to support you with progressing your graduate skills.

Preparatory reading is a great way to develop your knowledge and skills to be ready for the next level of study in higher education. Please see below some recommended reading to undertake prior to the start of your course:

Preparatory Reading

Recommended books/ebooks:

The best two texts, that work as excellent companions to the course, and are accessible to students preparing to start higher studies of biological science, are these:

Campbell, N., Urry, L. A., Cain, M. L., Wasserman, S. A., Minorsky, P. V., Reece, J. B., (2020) *Biology: A Global Approach*. 12th edition. London: Pearson Education Inc. ISBN-13: 978-1292341637

Sadava, D., Berenbaum, M. & Hillis, D.M. (2017) *Life: The science of Biology*. 11th edn. London: WH Freeman ISBN-13: 978-1319126575

Please choose either one, they both cover the same core concepts. They are the core texts for both years of the degree. In preparation for your degree level studies please try to cover the early chapters on biochemistry and cell biology. These will stand you in good stead for the higher study to come.

Other materials:

There are many wonderful websites that support the higher level study of biological sciences but the best one to access in preparation for your studies is [Nature Scitable](#). Once you start to explore either cell biology or genetics (or any of the other topics) at the bottom of the page are links to the article library where you can start to explore around the different topics.

1.6. COVID19 Programme Planning

Covid 19 programme Planning									
General approach being undertaken	<p>We will follow government advice on social distancing and personal safety to ensure a 'Covid secure' working and learning environment.</p> <p>We know that we all may need to adapt if Covid conditions change. We will continue to provide a high-quality learning experience utilising technology solutions as may be required.</p> <p>We will continue to update our dedicated Covid 19 webpage if and when circumstances change. We encourage all new and returning students to review this page to better understand the approach we are taking.</p>								
Programme Teaching and Learning changes being undertaken	<p>In the event of COVID-19 impacting on planned face-to-face teaching, delivery of theoretical content will continue using live streamed lessons using Microsoft Teams. This will give the opportunity to ask questions and interact with the lecturer and your peers, as in a normal lesson. These live sessions will also be recorded for access at other convenient times.</p> <p>Practical sessions will be rescheduled when teaching labs are available and it is safe to attend. The development of practical skills remains a core focus of this programme.</p>								
Programme Assessment changes being undertaken	<p>In the event of COVID-19 impacting on planned teaching and assessment we will make the following changes to assessments in this programme and these changes will overwrite the module records presented later in this handbook.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 30%;">Module title and code</th> <th>Change</th> </tr> </thead> <tbody> <tr> <td>SOUD1271 Genes, Genetic Analysis and Evolution</td> <td>The tests will be adjusted to be completed from home within 24 hours. The test dates will not change.</td> </tr> <tr> <td>SOUD1271 Laboratory Techniques</td> <td>The dates of the coursework assignment (1) based on the laboratory practicals will be adjusted to allow for completion of the practicals. The dates and the methodology of the research project coursework assignment (2) will also be adjusted. Practical competencies will be demonstrated when it is safe to access the laboratory.</td> </tr> <tr> <td>SOUD1495 Cell Biology</td> <td>The tests will be adjusted to be completed from home within 24 hours. The test dates will not change. The coursework assignment (1) based on the laboratory practicals will be adjusted to allow for completion. Practical competencies will be demonstrated when it is safe to access the laboratory.</td> </tr> </tbody> </table>	Module title and code	Change	SOUD1271 Genes, Genetic Analysis and Evolution	The tests will be adjusted to be completed from home within 24 hours. The test dates will not change.	SOUD1271 Laboratory Techniques	The dates of the coursework assignment (1) based on the laboratory practicals will be adjusted to allow for completion of the practicals. The dates and the methodology of the research project coursework assignment (2) will also be adjusted. Practical competencies will be demonstrated when it is safe to access the laboratory.	SOUD1495 Cell Biology	The tests will be adjusted to be completed from home within 24 hours. The test dates will not change. The coursework assignment (1) based on the laboratory practicals will be adjusted to allow for completion. Practical competencies will be demonstrated when it is safe to access the laboratory.
Module title and code	Change								
SOUD1271 Genes, Genetic Analysis and Evolution	The tests will be adjusted to be completed from home within 24 hours. The test dates will not change.								
SOUD1271 Laboratory Techniques	The dates of the coursework assignment (1) based on the laboratory practicals will be adjusted to allow for completion of the practicals. The dates and the methodology of the research project coursework assignment (2) will also be adjusted. Practical competencies will be demonstrated when it is safe to access the laboratory.								
SOUD1495 Cell Biology	The tests will be adjusted to be completed from home within 24 hours. The test dates will not change. The coursework assignment (1) based on the laboratory practicals will be adjusted to allow for completion. Practical competencies will be demonstrated when it is safe to access the laboratory.								

	SOUD1496 Biochemistry	Practical competencies will be demonstrated when it is safe to access the laboratory.
	SOUD1497 Microbiology	The tests will be adjusted to be completed from home within 24 hours. The test date may change to another one within the scheduled week. The coursework assignment (1) based on the laboratory practicals will be adjusted to allow for completion. Practical competencies will be demonstrated when it is safe to access the laboratory.
	SOUD2218 Cells & Adaptations	The tests will be adjusted to be completed from home within 24 hours. The test date may change to another one within the scheduled week.
	SOUD2220 Biodiversity and Speciation	The tests will be adjusted to be completed from home within 24 hours. The test date may change to another one within the scheduled week.
	SOUD2450 Research Project	The methodology of the coursework assignment (2) and the practical assessment, based on the research project data collection, will be adjusted to allow for the inclusion of secondary data.
	SOUD2451 Molecular Genetics	The coursework assignment (1) based on the laboratory practicals will be adjusted to allow for completion. Practical competencies will be demonstrated when it is safe to access the laboratory.
	SOUD2452 Immunology	Practical competencies will be demonstrated when it is safe to access the laboratory.
	SOUD2453 Work Experience	Students who have not completed work experience will need to engage with work experience providers remotely to ensure completion of the required 80 hours.

2. Programme Specification

On the following pages you will find the specification for your programme; this provides a detailed overview of the programme as a whole. It explains what you will learn and how you will be assessed throughout the two stages of your Foundation Degree. The Programme Learning Outcomes Map specifies the knowledge and skills you will develop at each stage of your Foundation Degree.

2.1.1. Programme Specification

Awarding Institution: University of Plymouth
Teaching Institution: South Devon College
Accrediting Body: N/A
Final Award: FdSc Biosciences
Intermediate Awards: Certificate of Higher Education (CertHE)
Programme Title: FdSc Biosciences

UCAS Code: C900

JACS Code: C190
Benchmarks: Foundation Degree Qualification Benchmark.
Also informed by the relevant sections of the
QAA Benchmarks for Biosciences, and for Agriculture, forestry,
agricultural sciences, food sciences and consumer sciences.

Date of Approval: February 2010

Admissions Criteria:

Qualification(s) Required for Entry to the FdSc	Comments
Candidates must have at Level 2:	
At Level 2	
Key Skills requirement/Higher Level Diploma	Key Skills Communications Level 2 (or equivalent qualification) Key Skills Application of Number Level 2 (or equivalent qualification)
and/or	
GCSEs at Level 4 or above	English, Maths, and a Science subject

Plus at least one of the following Level 3 qualifications:

Ensure that entries in the following sections are equitable; use conversion tables to relate one qualification to another

A Levels required:	AS/A levels that should include a science subject, preferably a biological science. 48 UCAS points minimum.
Advanced Level Diploma	Pass or above in a related subject area.
BTEC National Certificate/Diploma	Diploma/Certificate in a related subject area. 48 UCAS points minimum..
HNC/D	Pass in a related subject area.
VDA: AGNVQ, AVCE, AVS	Pass or above in a related subject area.
Access to HE or Year 0 provision	Level 3 from a Science pathway.
International Baccalaureate	24 points
Irish/Scottish Highers/Advanced Highers	48 UCAS points minimum from Higher Certificate
Work Experience	Candidates with work experience in the science sector are encouraged to apply. They will be interviewed to determine their ability to study at this level, and whether the programme is appropriate for them. To inform this process, candidates may be asked to complete a written piece of work on a relevant subject and/or a learning needs assessment.
Other non-standard awards or experiences	Candidates will be interviewed to determine their ability to study at this level, and whether the programme is appropriate for them. To inform this process, candidates may be asked to complete a written piece of work on a relevant subject and/or a learning needs assessment
APEL/APCL possibilities	Given the wide experience of potential applicants to this course, applications for Accreditation of Prior Learning (APL) and

	Accreditation of Prior Experiential Learning (APEL) are welcomed in accordance with South Devon College and University of Plymouth Academic Regulations
Interview/portfolio requirements	Interview may be employed
Independent Safeguarding Agency (ISA) / Criminal Record Bureau (CRB) clearance required	No
Aims of the Programme:	
<p>The programme is intended to:</p> <ol style="list-style-type: none"> 1. Enable students to develop the knowledge and skills needed for employment, and for life-long learning, in the rapidly changing family of Bioscience disciplines. 2. Encourage students to engage with the complexities of study in the Biosciences and enable them to integrate and apply knowledge and skills from across the range of specialist topics taught on this programme. 3. Prepare students for employment in the Biosciences Sector by developing transferable skills in areas such as problem-solving, team-working, data handling and communication, including ICT. 4. Enable students to become confident and self-analytical independent learners. 5. Develop students' awareness of the complex relationship between expanding biological knowledge and society as a whole. 	
Programme Intended Learning Outcomes (LO):	
<p>By the end of this programme the student will be able to:</p> <ol style="list-style-type: none"> 1. Demonstrate a detailed knowledge of concepts central to understanding in each of the biological areas studied 2. Integrate concepts and skills from the specialist biological topics studied to enhance understanding and solve problems 3. Demonstrate the ability to apply in the programme, and the workplace, practical, communication, team working, and problem solving skills in both known and novel situations 4. Access and evaluate a variety of resources for continuing self-directed learning, and to solve both theoretical and practical problems 5. Analyse data using a variety of techniques appropriate to Biosciences, including the selection and use of computer applications and statistical tests 6. Communicate ideas and information clearly using terminology specific to Biosciences and a style and format appropriate to the discipline, and the audience 7. Show an awareness of the potential effects of advancing biological knowledge on society, and of the reciprocal impact of public and political concerns on the biological sciences. 	

2.1.2. Brief Description of the Programme

The Foundation Degree (FdSc) in Biosciences is designed to integrate college study and work experience. As you explore the sub-disciplines that make up the biosciences sector you will be encouraged to make links between the knowledge and methodologies acquired in different modules. The programme will also develop the skills you need to go on learning and improving your practice, whether you progress to an Honours Degree or to employment.

2.1.3. Programme Structure and Pathways

Partner: South Devon College
 Academic Year: 2019 - 2020
 Programme Code: 4130
 Programme Title: FdSc Biosciences
 Full/Part Time: Full Time

Level 4					
Module Code	Module Title	Credits	Year of Delivery	Semester/Term of Delivery	Core/Optional
SOUD1494	Laboratory techniques	20	Year 1	Semester 1	Core
SOUD1495	Cell Biology	20	Year 1	Semester 1 and 2	Core
SOUD1271	Genes, Genetic Analysis and Evolution	20	Year 1	Semester 2	Core
SOUD1496	Biochemistry Toolkit	20	Year 1	Semester 1 and 2	Core
SOUD1497	Microbiology	20	Year 1	Semester 1 and 2	Core
SOUD1498	Professional Practice	20	Year 1	Semester 1 and 2	Core

Partner: South Devon College
 Academic Year: 2019 - 2020
 Programme Code: 4130
 Programme Title: FdSc Biosciences
 Full/Part Time: Full Time

Level 5					
Module Code	Module Title	Credits	Year of Delivery	Semester/Term of Delivery	Core/Optional
SOUD2450	Research Project	20	Year 2	Semesters 1 and 2	Core
SOUD2218	Cells and Adaptations	20	Year 2	Semester 1	Core
SOUD2451	Molecular Genetics, Biotechnology, and Cancer	20	Year 2	Semester 1	Core
SOUD2220	Biodiversity and Speciation	20	Year 2	Semester 1 and 2	Core
SOUD2221	Human Physiology	20	Year 2	Semester 2	Core
SOUD2452	Immunology	20	Year 2	Semester 2	Core
SOUD2453	Work Experience	0	Year 2	Semester 1 and 2	Core

Academic Year: 2019 - 2020
 Programme Code: 5045
 Programme Title: FdSc Biosciences
 Full/Part Time: Part Time

Level 4 & 5					
Module Code	Module Title	Credits	Year of Delivery	Semester/Term of Delivery	Core/Optional
SOUD1494	Laboratory techniques	20	Year 1	Semester 1	Core
SOUD1495	Cell Biology	20	Year 1	Semester 1 and 2	Core
SOUD1271	Genes, Genetic Analysis and Evolution	20	Year 1	Semester 2	Core
SOUD1498	Professional Practice	20	Year 1	Semester 1 and 2	Core
SOUD1496	Biochemistry Toolkit	20	Year 2	Semester 1 and 2	Core
SOUD1497	Microbiology	20	Year 2	Semester 1 and 2	Core
SOUD2218	Cells and Adaptations	20	Year 2	Semester 1	Core
SOUD2221	Human physiology	20	Year 2	Semester 2	Core
SOUD2220	Biodiversity and Speciation	20	Year 3	Semester 1 and 2	Core
SOUD2450	Research Project	20	Year 3	Semester 1 and 2	Core
SOUD2451	Molecular Genetics, Biotechnology, and Cancer	20	Year 3	Semester 1	Core
SOUD2452	Immunology	20	Year 3	Semester 2	Core
SOUD2453	Work Experience	0	Year 3	Semester 1 and 2	Core

2.1.4. Progression Route(s)

The agreed progression routes at the University of Plymouth are:

- BSc (Hons) Biosciences
- BSc (Hons) Human Biosciences

The following progression routes are also available at the University of Plymouth however, at level 5 entry.

- BSc (Hons) Biological Sciences

2.1.5. Any Exceptions to University of Plymouth Regulations

Students studying for FdSc Biosciences must achieve a mark of 40% to pass a module along with a minimum of 30% in each element. The pass mark for modules delivered on FdSc Biosciences (Levels 4 and 5) is 40%. Where module assessment on this programme involves more than one element, a student is also required to achieve a minimum of 30% in each element.

2.1.6. Teaching Methods and Assessments

A: Development of Knowledge and Understanding	Learning and Teaching Strategy/Method
<p>By the end of the programme the student will be able to demonstrate knowledge and understanding of:</p> <ul style="list-style-type: none"> • Concepts central to the study of biology from molecular level to ecological systems • How the principles of genetics and gene expression underlie much of modern biology • The structure and function of various types of cell in unicellular and multicellular organisms • Cell metabolism including the main anabolic and catabolic pathways • How the structure of biological macro-molecules determine their biological properties, to include enzyme structure and function • The applied significance of species as resources and as disease-causing organisms • The need to maintain biodiversity and develop sustainable methods of exploiting the environment 	<p>Primary</p> <ul style="list-style-type: none"> • lectures, seminars • workshops • 1:1 and group subject centred tutorials • guided practical work • an independent practical project • work-based learning and mentoring <p>Secondary</p> <ul style="list-style-type: none"> • presentations for the group • peer review • oral and written feedback • directed study will involve a variety of resources including the intranet and internet.

<p>Additional learning opportunities will allow students to demonstrate knowledge and understanding of:</p> <ul style="list-style-type: none"> • The mechanisms of life processes and an appreciation of how the physiology of an organism fits it for its environment • The ways in which organisms interact with each other and the environment <p>Nutrients and energy flow through individuals, populations and communities</p>	
<p>NB: Benchmark References Foundation Degree Bench Marks</p> <p>And informed by: QAA Biosciences QAA Agriculture, horticulture, forestry, food and consumer sciences</p>	<p>Assessment</p> <p>A variety of methods will be used to assess students including essays, practical reports for both guided experiments and all stages of carrying out an independent project, competency in practical skills, work-based learning report, seminar presentations, poster presentations, peer assessment, tests and examinations.</p> <p>Assessment will be both formative and summative and will emphasise the link between theory and practice. It will also involve a synoptic element to show the inter-relationship of theories and methodologies across modules and levels.</p>

<p>B: Cognitive and Intellectual Skills</p>	<p>Learning and Teaching Strategy/Method</p>
<p>By the end of the programme the student will be able to:</p> <ul style="list-style-type: none"> • Access, evaluate and integrate several lines of subject-specific evidence to solve problems and to formulate and test hypotheses • Analyse, synthesise and summarise information with minimal guidance • Recognise the moral and ethical implications of investigations and appreciate the need for ethical standards and professional codes of conduct <p>Recognise the complexity and diversity of life processes and the inter-relationship of concepts and</p>	<p>Primary</p> <ul style="list-style-type: none"> • lectures, seminars • workshops • 1:1 and group subject centred tutorials • guided practical work • an independent practical project • work-based learning and mentoring <p>Secondary</p> <ul style="list-style-type: none"> • presentations for the group • peer review • oral and written feedback • directed study will involve a variety of resources including the intranet and internet.

methodologies across the sub-disciplines	
<p>NB: Benchmark References</p> <p>Foundation Degree Bench Marks</p> <p>And informed by:</p> <p>QAA Biosciences</p> <p>QAA Agriculture, horticulture, forestry, food and consumer sciences</p>	<p>Assessment</p> <p>A variety of methods will be used to assess students including essays, practical reports for both guided experiments and all stages of carrying out an independent project, work-based learning report, seminar presentations, poster presentations, peer assessment, tests and examinations.</p> <p>Assessment will be both formative and summative and will emphasise the link between theory and practice. It will also involve a synoptic element to show the inter-relationship of theories and methodologies across modules and Levels.</p>

C: Key Transferable Skills	Learning and Teaching Strategy/Method
<p>By the end of the programme the student will be able to:</p> <ul style="list-style-type: none"> • Collect, analyse, interpret and present data using appropriate qualitative and quantitative techniques, including the use of computer packages • Communicate using a range of formats, approaches, and scientific language appropriate to their subject and audience • Set targets and take responsibility for their own learning with minimum direction • Access and critically evaluate information from a variety of sources • Appreciate the inter-disciplinary nature of science and the validity of different points of view <p>Demonstrate the skills necessary for self-managed and lifelong learning</p>	<p>Primary</p> <ul style="list-style-type: none"> • lectures, seminars • workshops • 1:1 and group subject centred tutorials • guided practical work • an independent practical project • work-based learning and mentoring • Personal Development Planning portfolio <p>Secondary</p> <ul style="list-style-type: none"> • presentations for the group • peer review • oral and written feedback • Directed study will involve a variety of resources including the intranet and internet.
<p>NB: Benchmark References</p> <p>Foundation Degree Bench Marks</p> <p>And informed by:</p> <p>QAA Biosciences</p>	<p>Assessment</p> <p>A variety of methods will be used to assess students including essays, practical reports for both guided experiments and all stages of carrying out an independent project, competency in practical skills, work-</p>

<p>QAA Agriculture, horticulture, forestry, food and consumer sciences</p>	<p>based learning report, seminar presentations, poster presentations, peer assessment, tests and examinations.</p> <p>Assessment will be both formative and summative and will emphasise the link between theory and practice. It will also involve a synoptic element to show the inter-relationship of theories and methodologies across modules and Levels.</p>
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D: Employment Related Skills	Learning and Teaching Strategy/Method
<p>By the end of the programme the student will be able to:</p> <ul style="list-style-type: none"> • Relate theory to practice in the workplace • Perform a range of experimental techniques to industry standards with due regard to safety • Evaluate their performance as an individual and a team member, and evaluate the performance of others • Identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles <p>Recognise and respect the views and opinions of other team member</p>	<p>Primary</p> <ul style="list-style-type: none"> • lectures, seminars • workshops • 1:1 and group subject centred tutorials • guided practical work • an independent practical project • work-based learning and mentoring • Personal Development Planning portfolio <p>Secondary</p> <ul style="list-style-type: none"> • presentations for the group • peer review • oral and written feedback • Directed study will involve a variety of resources including the intranet and internet.
E: Practical Skills	Learning and Teaching Strategy/Method
<p>By the end of the programme the student will be able to:</p> <ul style="list-style-type: none"> • Select and apply a range of appropriate and relevant experimental techniques with minimal direction and supervision • Be able to plan, execute and report on investigations, working as an individual or as part of a team • Be able to record data accurately and carry out appropriate manipulation of data in order to 	<p>Primary</p> <ul style="list-style-type: none"> • lectures, seminars • workshops • 1:1 and group subject centred tutorials • guided practical work • an independent practical project • work-based learning and mentoring • Personal Development Planning portfolio <p>Secondary</p> <ul style="list-style-type: none"> • presentations for the group • peer review

<p>draw conclusions and test hypotheses Undertake field and/or laboratory investigations of living systems in a responsible, safe and ethical manner</p>	<ul style="list-style-type: none"> • oral and written feedback • Directed study will involve a variety of resources including the intranet and internet.
<p>NB: Benchmark References</p> <p>Foundation Degree Bench Marks</p> <p>And informed by:</p> <p>QAA Biosciences</p> <p>QAA Agriculture, horticulture, forestry, food and consumer sciences</p> <p>National Occupational Standards</p>	<p>Assessment</p> <p>A variety of methods will be used to assess students including essays, practical reports for both guided experiments and all stages of carrying out an independent project, competency in practical skills, work-based learning report, seminar presentations, poster presentations, peer assessment, tests and examinations.</p> <p>Assessment will be both formative and summative and will emphasise the link between theory and practice. It will also involve a synoptic element to show the inter-relationship of theories and methodologies across modules and Levels</p>

2.1.7. Distinctive Features of the Foundation Degree

- The programme is the first Foundation Degree to be accredited by the Royal Society of Biology.
- The programme was designed with the help of local employers to ensure the skills and knowledge you gain are appropriate for a career in the biosciences sector.
- You will be prepared for employment and supported to find work experience.
- The employers you work with may contribute to your Research Project module in the second year, ensuring that work experience is fully integrated into the programme.
- During your course you will normally take part in trips and visit to explore the bioscience sector. These activities will support your studies, and may help you refine your career choices.
- The University Centre provides a working environment, support resources and catering, dedicated to HE students.
- You will be part of University Centre South Devon that has been graded Gold by the Teaching Excellent Framework (TEF) and facilities that provide an excellent, modern learning environment to support your studies.

2.1.8. Learning Outcomes Maps for FdSc Biosciences at HE Levels 4 and 5

Learning Outcomes Map	Level 4		
Graduate Attributes and Skills			
Core Programme Intended Learning Outcomes	Programme Aim	Programme Learning Outcome	Related Core Modules
<p>Knowledge/ Understanding</p> <p>Students will be able to demonstrate a knowledge of the underlying concepts and principles associated with their area(s) of study, and an ability to evaluate and interpret these within the context of that (those) area(s) of study. In particular:</p> <ul style="list-style-type: none"> • Concepts central to the study of biology from molecular level to ecological systems • How the principles of genetics and gene expression underlie much of modern biology • The structure and function of various types of cell in unicellular and multicellular organisms • Cell metabolism including the main anabolic and catabolic pathways • How the structure of biological macro-molecules determine their biological properties, to include enzyme structure and function • The applied significance of species as resources and as disease-causing organisms • The need to maintain biodiversity and develop sustainable methods of exploiting the environment 	1,2,5	1,2,4,5,6,7	SOUD1495 SOUD1271 SOUD1497 SOUD1496

<p>Cognitive / Intellectual Skills (generic)</p> <p>Students will be able to demonstrate an ability to present, evaluate, and interpret qualitative and quantitative data, to develop lines of argument and make sound judgements in accordance with basic theories and concepts of their subject(s) of study. They will also be able to demonstrate the ability to evaluate the appropriateness of different approaches to solving problems related to their area(s) of study and/or work. In particular to:</p> <ul style="list-style-type: none"> • Access, evaluate and integrate several lines of subject-specific evidence to solve problems and to formulate and test hypotheses • Analyse, synthesise and summarise information • Recognise the moral and ethical implications of investigations and appreciate the need for ethical standards and professional codes of conduct • Recognise the complexity and diversity of life processes and the inter-relationship of concepts and methodologies across the sub-disciplines 	1,2,3,4,5	1,2,4,5,6,7	SOUD1498 SOUD1494 SOUD1495 SOUD1271 SOUD1497 SOUD1496
<p>Key / Transferable Skills (generic)</p> <p>Students will be able to demonstrate an ability to communicate accurately and reliably, and with structured and coherent arguments. Students will also be able to demonstrate an ability to take different approaches to solving problems. In particular to:</p> <ul style="list-style-type: none"> • Collect, analyse, interpret and present data using appropriate qualitative and quantitative techniques, including the use of computer packages • Communicate using a range of formats, approaches, and scientific language appropriate to their subject and audience • Set targets and take responsibility for their own learning with minimum direction • Access and critically evaluate information from a variety of sources • Appreciate the inter-disciplinary nature of science and the validity of different points of view • Demonstrate the skills necessary for self-managed and lifelong learning 	1,2,3,4,5	1,2,4,5,6,7	SOUD1498 SOUD1494 SOUD1495 SOUD1271 SOUD1497 SOUD1496

<ul style="list-style-type: none"> • Employment-related skills Students will be able to demonstrate an ability to undertake further training and develop new skills within a structured and managed environment and the qualities and transferable skills necessary for employment requiring the exercise of personal responsibility. In particular to: <ul style="list-style-type: none"> • Relate theory to practice in the workplace • Perform a range of experimental techniques to industry standards with due regard to safety • Evaluate their performance as an individual and a team member, and evaluate the performance of others • Identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles • Recognise and respect the views and opinions of other team members 	1,2,3,4	1,2,3,4,5,6,7	SOUD1498 SOUD1494 SOUD1495 SOUD1271 SOUD1497 SOUD1496
<p>Practical Skills (subject specific)</p> <ul style="list-style-type: none"> • Select and apply a range of appropriate and relevant experimental techniques with minimal direction and supervision • Be able to plan, execute and report on investigations, working as an individual or as part of a team • Be able to record data accurately and carry out appropriate manipulation of data in order to draw conclusions and test hypotheses • Undertake field and/or laboratory investigations of living systems in a responsible, safe and ethical manner 	1,2,3	2,4,5	SOUD1498 SOUD1494 SOUD1495 SOUD1271 SOUD1497 SOUD1496

Foundation Degree Intended Learning Outcomes Map	Level 5		
Graduate Attributes and Skills			
Core Programme Intended Learning Outcomes	Programme Aim	Programme Learning Outcome	Related Core Modules
<p>Knowledge/ Understanding <i>Knowledge and critical understanding of the well-established principles of their area(s) of study, and the way in which those principles have developed; knowledge of the main methods of enquiry in their subject(s) and ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study. They will also be able to demonstrate an understanding of the limits of their knowledge, and how this influences analyses and interpretations based on that knowledge. In particular:</i></p> <ul style="list-style-type: none"> • Concepts central to the study of biology from molecular level to ecological systems • How the principles of genetics and gene expression underlie much of modern biology • The structure and function of various types of cell in unicellular and multicellular organisms • Cell metabolism including the main anabolic and catabolic pathways • How the structure of biological macro-molecules determine their biological properties, to include enzyme structure and function • The applied significance of species as resources and as disease-causing organisms • The need to maintain biodiversity and develop sustainable methods of exploiting the environment 	1, 2, 5	1,2,4,5,6,7	SOUD2450 SOUD2218 SOUD2451 SOUD2220 SOUD2452

<p>Cognitive / Intellectual Skills (generic) <i>Students will be able to demonstrate an ability to apply underlying concepts and principles outside the context in which they were first studied. In particular to:</i></p> <ul style="list-style-type: none"> • Access, evaluate and integrate several lines of subject-specific evidence to solve problems and to formulate and test hypotheses • Analyse, synthesise and summarise information • Recognise the moral and ethical implications of investigations and appreciate the need for ethical standards and professional codes of conduct • Recognise the complexity and diversity of life processes and the inter-relationship of concepts and methodologies across the sub-disciplines 	1,2,3,4,5	1,2,4,5,6,7	SOUD2450 SOUD2218 SOUD2451 SOUD2220
<p>Key / Transferable Skills (generic) <i>Students will be able to demonstrate an ability to evaluate critically the appropriateness of different approaches to solving problems in the field of study; use a range of established techniques to initiate and undertake critical analysis of information, and to propose solutions to problems arising from that analysis and effectively communicate information, arguments, and analysis, in a variety of forms, to specialist and non-specialist audiences, and deploy key techniques of the discipline effectively. In particular to:</i></p> <ul style="list-style-type: none"> • Collect, analyse, interpret and present data using appropriate qualitative and quantitative techniques, including the use of computer packages • Communicate using a range of formats, approaches, and scientific language appropriate to their subject and audience • Set targets and take responsibility for their own learning with minimum direction • Access and critically evaluate information from a variety of sources • Appreciate the inter-disciplinary nature of science and the validity of different points of view • Demonstrate the skills necessary for self-managed and lifelong learning 	1, 2, 3, 4, 5	1,2,4,5,6,7	SOUD2450 SOUD2218 SOUD2451 SOUD2220

<p>Employment-related skills <i>Students will be able to demonstrate an ability to apply subject principles in an employment context possibly different from that in which they were first studied; undertake further training, develop existing skills and acquire new competencies that will enable them to assume significant responsibilities within organisations and demonstrate the qualities and transferable skills necessary for employment requiring the exercise of personal responsibility and decision making. In particular to:</i></p> <ul style="list-style-type: none"> • Relate theory to practice in the workplace • Perform a range of experimental techniques to industry standards with due regard to safety • Evaluate their performance as an individual and a team member, and evaluate the performance of others • Identify individual and collective goals and responsibilities and perform in a manner appropriate to these roles • Recognise and respect the views and opinions of other team members 	1, 2, 3, 4	1,2,3,4,5,6,7	SOUD2450 SOUD2218 SOUD2451 SOUD2220 SOUD2450
<p>Practical Skills (subject specific)</p> <ul style="list-style-type: none"> • Select and apply a range of appropriate and relevant experimental techniques with minimal direction and supervision • Be able to plan, execute and report on investigations, working as an individual or as part of a team • Be able to record data accurately and carry out appropriate manipulation of data in order to draw conclusions and test hypotheses • Undertake field and/or laboratory investigations of living systems in a responsible, safe and ethical manner 	1, 2, 3	2,4,5,	SOUD2450 SOUD2218 SOUD2451 SOUD2220

3. Module Records

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD1494

MODULE TITLE: Laboratory Techniques

CREDITS: 20

FHEQ LEVEL: 4

JACS CODE: C720

PRE-REQUISITES: None

CO-REQUISITES: None

COMPENSATABLE: Y

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This is a practical module providing an introduction to a large range of techniques that may be found in modern laboratories from industrial product testing to research facilities. It provides opportunities to develop skills that will be used in other modules and during work based learning.

ELEMENTS OF ASSESSMENT <i>[Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment</i>			
E1 (Examination)		C1 (Coursework)	100%
E2 (Clinical Examination)		A1 (Generic assessment)	
T1 (Test)		P1 (Practical)	Pass/Fail

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Biosciences

Professional body minimum pass mark requirement: NA

MODULE AIMS:

This module aims to provide a comprehensive set of basic laboratory skills such as knowledge of laboratory management systems, relevant ISO standards, GLP, H&S, quality assurance practices and many specific laboratory techniques and experimental procedures.

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Demonstrate the ability to use a range of laboratory chemicals and equipment in a competent manner.	PLO 3
LO2: Demonstrate theoretical and practical knowledge of a range of laboratory techniques.	PLO 3
LO3: Analyse and present the results of a piece of guided experimental work.	PLO 2, PLO 3, PLO 4, PLO 5, PLO 6
LO4: Describe the gross and microscopic structure of a range of plant species.	PLO 3, PLO 6

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: Semester 1

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Luke Peakman	OTHER MODULE STAFF:

Summary of Module Content

Understanding of health and safety, quality standards, GLP. Basic skills of working with chemicals and solutions will progress to techniques in biochemistry, molecular biology, microbiology and immunology amongst others. Biological drawing. Guided experimental project work. Designing and evaluating experimental methods, collecting and analysing data and drawing conclusions. Presenting experimental investigations in appropriate formats.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities <i>[KIS definitions]</i>	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Scheduled delivery	12	1 hour per week for 12 weeks
Practical classes and workshops	30	3 hours per week for 10 weeks
Tutorial	8	2 hours for 4 weeks
Project work	10	4 hours for 2.5 weeks
Guided independent study	140	Directed weekly reading, VLE based tasks and assessment development/revision
Total	200	(NB: 1 credit = 10 hours of learning; 20 credits = 200 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Portfolio of written up laboratory techniques and experimental work, including annotated plant drawings. LO2, LO4	75%
	Guided Research Project LO3	25%
Practical	Practical skills record LO1	Pass/Fail

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Portfolio of written up laboratory techniques and experimental work, including annotated plant drawings. LO2, LO3, LO4	100%
Practical	Practical skills record LO1	Pass/Fail

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Luke Peakman Date 03/06/2020	Approved by: James McCauley Date: 03/06/2020

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD1495

MODULE TITLE: Cell Biology

CREDITS: 20

FHEQ LEVEL: 4

JACS CODE: C130

PRE-REQUISITES: None

CO-REQUISITES: None

COMPENSATABLE: Y

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module is designed to link cell structure and ultra-structure to cell function in both prokaryotes and eukaryotes. It introduces key processes in cell chemistry, together with the structure of associated molecules and macro-molecules.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment			
E1 (Examination)		C1 (Coursework)	60%
E2 (Clinical Examination)		A1 (Generic assessment)	
T1 (Test)	40%	P1 (Practical)	Pass/Fail

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Biosciences

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

To develop knowledge of cell structure and cell processes.

To encourage students to relate and apply skills and knowledge gained in this module with those developed elsewhere in the programme.

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Describe the structure of typical prokaryotic and eukaryotic cells.	PLO 1
LO2: Relate cell structure to function.	PLO 1
LO3: Describe the structure of a range of biologically important molecules and how structure enables function.	PLO 1
LO4: Explain the relationship between enzyme structure and function, and the effect of the cell environment on their performance.	PLO 1, PLO 4, PLO 5, PLO 6
LO5: Describe and explain a range of key processes in prokaryotic and eukaryotic cells.	PLO 1, PLO 4, PLO 5, PLO 6
LO6: Demonstrate practical competence and team working skills when performing experiments and recording data, with some guidance.	PLO 3

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: Semester 1

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Matt Rossin	OTHER MODULE STAFF:

Summary of Module Content

Prokaryotic and eukaryotic cell ultra-structure; cell transport; transpiration; translocation; the functions of biological molecules and macromolecules, including an introduction to molecular structure and bonding; respiration and photosynthesis, including the importance of redox reactions; laboratory practice including microscopy, and the implementation, analysis and evaluation of experiments.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Scheduled delivery	54	Discussion based teaching
Practical classes and workshops	6	Laboratory classes will involve team working and assessment of practical skills in practical skills record
Guided independent study	140	Directed weekly reading, VLE based tasks and assessment development/revision
Total	200	(NB: 1 credit = 10 hours of learning; 20 credits = 200 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Portfolio of experimental reports and evaluations + peer and self-evaluation of team-working skills LO2, LO4, LO5	100%
Practical	Practical Skills Record LO6	Pass/Fail
Test	In-class test covering LO1, LO3	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Experimental reports and evaluations LO2, LO4, LO5	100%
Practical	Practical Skills Record LO6	Pass/Fail
Test	In-class test covering LO1, LO3	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Matt Rossin Date: 14/07/20	Approved by: Luke Peakman Date: 14/07/2020

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD1271	MODULE TITLE: Genes, Genetic Analysis and Evolution
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CREDITS: 20	FHEQ LEVEL: 4	JACS CODE: C900
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PRE-REQUISITES: N/A	CO-REQUISITES: N/A	COMPENSATABLE: Yes
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SHORT MODULE DESCRIPTOR:

This module provides an introduction to genetics and evolution. It includes the Mendelian laws of inheritance through to the molecular basis of inheritance, the structure of DNA, the nature of the gene, the maintenance of the genetic code and the behaviour of genes in populations, natural selection and the formation of species.

ELEMENTS OF ASSESSMENT

WRITTEN EXAMINATION		COURSEWORK	
T1 (in-class test)	40%	C1	60%

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

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

This module aims to provide an introduction to the concepts of genetics and inheritance from the whole species level to the molecular level.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

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

1. Recognise patterns of inheritance and describe the principles of heredity
2. Demonstrate knowledge and understanding of the nature of the gene, the structure of DNA, the genetic code and the sources of mutation and genetic variation
3. Discuss the key principles of the theory of evolution, natural selection and population genetics
4. Relate the concepts of molecular genetics to natural selection

DATE OF APPROVAL: 10/02/2010	FACULTY/OFFICE: AP
DATE OF IMPLEMENTATION: 09/2010	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE: N/A	TERM: 10/AY/AU/M

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 2020/21	NATIONAL COST CENTRE: 112
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MODULE LEADER: Luke Peakman	OTHER MODULE STAFF:
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Summary of Module Content

The development through history of the ideas of genetics leading to the modern understanding of genes as heritable units and as molecular structures. The structure of DNA and the genetic code is considered along with the molecular processes involved in its replication, translation and repair. Sources of DNA damage are looked at and how this relates to mutation and genetic variation and ultimately the role this plays in evolution and natural selection. Aspects of population genetics are also discussed. The module applies then applies this understanding to the evolution of hominins where current developments in this field of research are considered.

SUMMARY OF TEACHING AND LEARNING

Activities	Hours	Comments/Additional Information
Scheduled delivery	52.5	3.5 hours per week for 15 weeks
Practical classes and workshops	7.5	1 hour per week for 7.5 weeks
Guided independent study	140	Directed weekly reading, VLE based tasks and assessment development/revision
Total	200	

Category	Element	Component Name	Component weighting	Comments <i>Include links to learning objectives</i>
Written Exam	T1	In class Test 1 In class Test 2	50% 50% Total 100%	In-class test covering LO2 In-class test covering LO1
Coursework	C1	Written report	100%	2000 word assignment covering LO3, LO4

Updated by: Luke Peakman Date: 04/06/2020	Approved by: James McCauley Date: 04/06/2020
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UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD1497

MODULE TITLE: Microbiology

CREDITS: 20

FHEQ LEVEL: 4

JACS CODE: C500

PRE-REQUISITES: None

CO-REQUISITES: None

COMPENSATABLE: Y

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module will enable the student to demonstrate basic microbiological techniques. It will develop an awareness of the diversity and physiology of microbes. It will give an understanding of their involvement in nature, particularly with respect to human health and natural ecosystems.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment			
E1 (Examination)		C1 (Coursework)	60%
E2 (Clinical Examination)		A1 (Generic assessment)	
T1 (Test)	40%	P1 (Practical)	Pass/Fail

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Biosciences

Professional body minimum pass mark requirement: NA

MODULE AIMS:

To develop a knowledge of the types of micro-organisms, their physiology and reproduction.
 To outline the impact of micro-organisms on humans, and how micro-organisms and humans interact.
 To describe the impact of micro-organisms on the environment, and how micro-organisms interact with the environment. To develop competencies in microbiological laboratory techniques.

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Undertake a range of microbiological techniques competently	PLO 3
LO2: Describe the diversity of micro-organisms	PLO 1
LO3: Describe the physiology and reproductive strategies of micro-organisms	PLO 1
LO4: Discuss the ways in which micro-organisms interact with humans	PLO 1, PLO 2, PLO 4, PLO 6
LO5: Discuss the importance of micro-organisms in the environment	PLO 1, PLO 2, PLO 4, PLO 6

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: Semester 1

Additional notes (for office use only):

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Paul Hallas	OTHER MODULE STAFF:

Summary of Module Content

This will include: Laboratory practice of microbial techniques with respect to aseptic technique, culturing, examination and identification. Studies of microbial diversity, physiologies and reproduction. Studies of host defences, pathogenicity, disease transmission, antibiotics, microbial genetics and genetic engineering. Studies of microbial interactions with the environment, symbiosis and recycling of resources.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities <i>[KIS definitions]</i>	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Scheduled delivery	30	Key topics covered by lectures and seminar work which may be student led.
Practical classes and workshops	20	Practical skills to support technique and understanding.
Tutorial	4	Coursework development support and revision guidance
Project work	6	Project guidance including planning and practical implementation
Guided independent study	140	Directed weekly reading, VLE based tasks and assessment development/revision
Total	200	(NB: 1 credit = 10 hours of learning; 20 credits = 200 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written reports and presentation of experimental work LO4, LO5	100%
Test	In-class test covering LO2, LO3	100%
Practical	Practical Skills Record LO1	Pass/Fail

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written reports and presentation of experimental work LO4, LO5	100%
Test	In-class covering LO2, LO3	100%
Practical	Practical Skills Record LO1	Pass/Fail

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Paul Hallas Date: 03/06/2020	Approved by: Luke Peakman Date: 04/06/2020

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD1496	MODULE TITLE: Biochemistry Toolkit	
CREDITS: 20	FHEQ LEVEL: 4	JACS CODE: C720
PRE-REQUISITES: None	CO-REQUISITES: None	COMPENSATABLE: Y

SHORT MODULE DESCRIPTOR: (max 425 characters)

This module examines the chemistry of carbon compounds, especially in relation to the structure and properties of biologically important macro-molecules. Specific examples are taken from metabolic pathways in the liver, from enzyme activity, and from the structure and mutation of DNA.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions] – see <u>Definitions of Elements and Components of Assessment</u>			
E1 (Examination)		C1 (Coursework)	40%
E2 (Clinical Examination)		A1 (Generic assessment)	
T1 (Test)	60%	P1 (Practical)	Pass/Fail

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Biosciences

Professional body minimum pass mark requirement: NA

MODULE AIMS:

To provide sufficient understanding of carbon chemistry to allow students to identify molecular structures, and suggest mechanisms for their reactions.

To develop an appreciation of the relationship between the structure and functions of biological macromolecules, and the ways in which molecular damage may disrupt these functions.

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Identify and name carbon based molecules from empirical or structural formulae.	PLO 1
LO2: Apply knowledge of molecular structure to explain the functions and the metabolism of lipids, carbohydrates and proteins (including enzymes).	PLO 1, PLO 2
LO3: Demonstrate the ability to carry out a range of biochemical techniques competently.	PLO 3
LO4: Discuss the importance of the cell environment to the structure and functioning of biological molecules.	PLO 2, PLO 4, PLO 6
LO5: Explain the mechanisms by which the structure of DNA can be mutated.	PLO 2, PLO 4, PLO 6

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: Semester 1 and 2

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Kenneth Armstrong	OTHER MODULE STAFF:

Summary of Module Content

Bond formation. Functional groups. Bond energies and metabolic pathways. Redox reactions. Use of structural formulae and molecular modelling. pH and buffers. Stereo-chemistry and the significance of isomers. Enzyme kinetics. Metabolic pathways in the liver – synthesis and detoxification. Mutagens including free radicals and ionising radiation.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities <i>[KIS definitions]</i>	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Scheduled delivery	45	Teacher and student led active learning and discussions
Practical classes and workshops	15	Development of practical skills, and competency assessed in Practical Skills Record
Guided independent study	140	Directed weekly reading, VLE based tasks and assessment development/revision
Total	200	(NB: 1 credit = 10 hours of learning; 20 credits = 200 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written report LO4, LO5.	100%
Test	In-class test covering LO1 In-class test covering LO2	35% 65% Total 100%
Practical	Practical Skills Record LO3	Pass/Fail

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written report LO4, LO5.	100%
Test	In-class test covering LO1, LO2	100%
Practical	Practical Skills Record LO3	Pass/Fail

To be completed when presented for Minor Change approval and/or annually updated

Updated by: Kenneth Armstrong Date: 22/05/2020	Approved by: Luke Peakman Date: 22/05/2020
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UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD1498

MODULE TITLE: Professional Practice

CREDITS: 20

FHEQ LEVEL: 4

JACS CODE: X220

PRE-REQUISITES: None

CO-REQUISITES: None

COMPENSATABLE: Y

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module is designed to allow you to demonstrate the professional skills required for successful employment in the bioscience sector. The module will also provide the opportunity to reflect on and evaluate the development of those professional skills.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment			
E1 (Examination)		C1 (Coursework)	75%
E2 (Clinical Examination)		A1 (Generic assessment)	
T1 (Test)	25%	P1 (Practical)	

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Biosciences

Professional body minimum pass mark requirement: NA

MODULE AIMS:

To provide opportunities to develop and demonstrate professional skills required for successful employment in the bioscience sector including relevant mathematical skills. To provide opportunities for reflection and evaluation on the development of those professional skills

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Demonstrate the ability to effectively engage with bioscience sector employers in preparation for work based learning	PLO 3, PLO 4
LO2: Demonstrate professional skills required for employment in the bioscience sector including team working and problem solving.	PLO 3, PLO 4
LO3: Evaluate own strengths and weaknesses in relation to workplace role(s) in the bioscience sector	PLO 3, PLO 4
LO4: Demonstrate mathematical skills relevant to those of a professional bioscientist	PLO 5

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: Semester 1

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Luke Peakman	OTHER MODULE STAFF:

Summary of Module Content

This module will include aspects of the following: applying for work in the bioscience sector including CV writing and how to effectively communicate with employers; the requirements of professional practice including health and safety, team working skills, time management; informed reflection, self-evaluation and personal action planning; relevant ICT and mathematical competences to support professional practice; opportunities to demonstrate and evaluate professional skills.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities <i>[KIS definitions]</i>	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Scheduled delivery	40	Used to cover professional skills including laboratory management skills, team working and problem solving, basic maths and statistics.
Scheduled seminars	15	Discussion, often student led.
Tutorial	5	One-to-one or small group focus on assessment and feedback
Guided independent study	140	Directed weekly reading, Moodle based tasks, and assessment development/revision
Total	200	(NB: 1 credit = 10 hours of learning; 20 credits = 200 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Portfolio including preparation for employment activities, reflection on sector employment skills and evaluations of the student's professional skills. LO1, LO2, LO3	100%
Test	Basic maths and statistics test LO4	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Portfolio including preparation for employment activities, reflection on sector employment skills and evaluations of the student's professional skills. LO1, LO2, LO3	100%
Test	Basic maths and statistics test LO4	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Luke Peakman Date 22/05/2020	Approved by: James McCauley Date: 22/05/2020

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD2450

MODULE TITLE: Research Project

CREDITS: 20

FHEQ LEVEL: 5

JACS CODE: X210

PRE-REQUISITES: None

CO-REQUISITES: None

COMPENSATABLE: Y

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module will enable the student to demonstrate their ability to work independently to source information, formulate a hypothesis, design and carry out a piece of practically based research to test that hypothesis. The output of this research work will be communicated in a written report and oral presentation.

ELEMENTS OF ASSESSMENT [Use HESA KIS definitions] – see Definitions of Elements and Components of Assessment			
E1 (Examination)		C1 (Coursework)	75%
E2 (Clinical Examination)		A1 (Generic assessment)	
T1 (Test)		P1 (Practical)	25%

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Biosciences

Professional body minimum pass mark requirement: NA

MODULE AIMS:

To allow students to carry out all the stages involved in a research project, from literature reviews to final report and oral presentation, and where appropriate, the preparation and submission of a research paper. To encourage independent study in a field of their choice. To develop both practical and transferable skills, and allow students to integrate these with knowledge from across their programme of study.

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Independently access and evaluate information from a variety of appropriate sources.	PLO 4
LO2: Independently plan and carry out hypothesis-driven research, including collecting interpreting, communicating and evaluating data.	PLO 2, PLO 3, PLO 4, PLO 5, PLO 6
LO3: Orally present scientific research work.	PLO 3, PLO 6
LO4: Demonstrate an ability to select and apply, appropriate subject knowledge and transferable skills, from across the programme.	PLO 3, PLO 4

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: Semester 1 and 2

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Kenneth Armstrong	OTHER MODULE STAFF:

Summary of Module Content

The research project will provide opportunities for students to demonstrate a range of graduate and transferable skills relevant to the Bioscience sector. These will include: identifying sources of evidence, critical appraisal skills, presenting information, project management, problem solving, research methodologies and data collection methods and analysis.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities <i>[KIS definitions]</i>	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Scheduled delivery	9	1.5 hours including in-class discussions for 6 weeks
Tutorial	4	One-to-one and group tutorials
Project work	32	Project supervision
Guided independent study	155	Directed weekly reading, assessment development, completing research work
Total	200	(NB: 1 credit = 10 hours of learning; 20 credits = 200 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written structured report of research proposal LO1	40%
	Written structured report of work output LO2, LO4	60%
		Total 100%
Practical	Oral Presentation of research project work LO3	100%

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Written structured report of research proposal and work output LO1, LO2 LO4	100%
Practical	Oral Presentation of research project work LO3	100%

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Kenneth Armstrong Date: 04/06/2020	Approved by: Luke Peakman Date: 04/06/2020

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD2218	MODULE TITLE: Cells and Adaptations
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CREDITS: 20	FHEQ LEVEL: 5	JACS CODE: BX71
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PRE-REQUISITES: N/A	CO-REQUISITES: N/A	COMPENSATABLE: Yes
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SHORT MODULE DESCRIPTOR:

This module builds on knowledge gained at Stage 1 by looking in more detail at some essential cell processes, such as membrane transport, cell signalling and synthesis of macro-molecules. The adaptations of cells to perform specific functions are examined, using connective tissues as exemplars. The module introduces aspects of cell differentiation and apoptosis.

ELEMENTS OF ASSESSMENT

WRITTEN EXAMINATION		COURSEWORK	
T1 (in-class test)	30%	C1	70%

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

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

To develop a greater depth of knowledge about cell structure and function.
To examine in detail the processes of differentiation and tissue formation with particular emphasis on blood and other connective tissues.
To develop an appreciation of the importance of cell signalling in the control of growth, development and other processes.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

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

1. Critically evaluate the relationship of cell structure to function, with particular reference to connective tissues.
2. Analyse the importance of cell signalling molecules to the organisation and control of cells and organisms.
3. Identify mechanisms involved in membrane transport systems and analyse their roles in cell-surface and internal membranes.
4. Critically evaluate the properties and functions of stem cells and reflect on the ethical issues associated with their use.
5. Assess the importance of a range of chemical pathways involved in the synthesis and modification of biologically important macro-molecules.

DATE OF APPROVAL: 10/02/2010	FACULTY/OFFICE: AP
DATE OF IMPLEMENTATION: 09/2010	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE: N/A	TERM: 11/AY/AU/M

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 2020-21	NATIONAL COST CENTRE: 112
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MODULE LEADER: Janet Ellis	OTHER MODULE STAFF:
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Summary of Module Content

Cell structure related to function in connective tissues such as blood and bone. Stem cells and cell differentiation; cell signalling. Membrane transport through surface and internal membranes. Synthesis and modification of macromolecules such as proteins and lipids.

SUMMARY OF TEACHING AND LEARNING

Activities	Hours	Comments/Additional Information
Scheduled delivery	40	Lectures are delivered in a discursive style
Tutorial	3	Assessment support group and one-to-one
Practical classes	2	Laboratory based experiments
Guided independent learning	155	Directed weekly reading, Moodle based tasks, and assessment development/revision
Total	200	

Category	Element	Component Name	Component weighting	Comments <i>Include links to learning objectives</i>
Written in class test	T1	Test 1	50%	In-class test covering LO2 and LO5
		Test 2	50%	In class test covering LO1 and LO4
Coursework	C1	Essay	100%	1,750 words. Signalling transduction pathways and their effects on metabolic pathways. LO3

Updated by: Janet Ellis Date: 14/7/20	Approved by: Luke Peakman Date: 14/7/20
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UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD2451

MODULE TITLE: Molecular Genetics Biotechnology and Cancer

CREDITS: 20

FHEQ LEVEL: 5

JACS CODE: C440

PRE-REQUISITES: None

CO-REQUISITES: None

COMPENSATABLE: Y

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

DNA replication, repair and recombination are considered in great detail in order to facilitate an understanding of modern molecular biological techniques. Key methods in biotechnology are dealt with as well as their implications. Genetic engineering and gene therapy considered along with the impact this technology has/may have on human health. Molecular basis of cancer will be discussed with current and future therapies.

ELEMENTS OF ASSESSMENT <i>[Use HESA KIS definitions] – see <u>Definitions of Elements and Components of Assessment</u></i>			
E1 (Examination)		C1 (Coursework)	100%
E2 (Clinical Examination)		A1 (Generic assessment)	
T1 (Test)		P1 (Practical)	Pass/Fail

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Biosciences

Professional body minimum pass mark requirement: NA

MODULE AIMS:

This module aims to develop a deeper understanding of molecular genetics and recombinant DNA technologies and their impacts on human health and disease. Practical skills in molecular biology and bioinformatics are also developed and assessed.

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Critically reflect on methods of mapping genes in prokaryotic and eukaryotic organisms.	PLO 1, PLO 2, PLO 4, PLO 6
LO2: Demonstrate the ability to apply underpinning theory to current methods and techniques used in recombinant DNA technology and genetic engineering.	PLO 2, PLO 4, PLO 5, PLO 6
LO3: Identify and assess the ways in which molecular biology relates to human diseases, with a focus on cancer and its current and future therapies.	PLO 2, PLO 4, PLO 6, PLO 7
LO4: Demonstrate technical proficiency in molecular biological techniques.	PLO 3

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: Semester 1

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Luke Peakman	OTHER MODULE STAFF:

Summary of Module Content

The sources of genetic mutation, DNA repair mechanisms and recombination are discussed. The genetics of bacteria and bacteriophage are looked at leading into a study of recombinant DNA technology, genetic cloning in prokaryotes, PCR and other molecular biology techniques. Mapping and cloning human disease genes is considered along with current and future therapies developed by our understanding of molecular biology and genetic engineering. Practical skills are also developed and competency assessed. Finally, our current understanding of the pathology of cancer and treatments current and future including social implications.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities <i>[KIS definitions]</i>	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Scheduled delivery	27	Discussions with both teacher and student led activities.
Practical classes and workshops	12	Molecular biology practical skills developed and assessed.
Tutorial	6	Support with assessment preparation and revision.
Guided independent study	155	Directed weekly reading, VLE based tasks and assessment development/revision
Total	200	(NB: 1 credit = 10 hours of learning; 20 credits = 200 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Portfolio of applied molecular biology techniques LO1, LO2	65%
	Report discussing cancer therapies LO3	35%
		100%
Practical	Demonstrate competency in Practical Skills Record LO4	Pass/Fail

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Portfolio of applied molecular biology techniques LO1, LO2	65%
	Report discussing cancer therapies LO3	35%
		100%
Practical	Demonstrate competency in Practical Skills Record LO4	Pass/Fail

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Luke Peakman Date: 06/06/2020	Approved by: James McCauley Date: 06/06/2020

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD2220	MODULE TITLE: Biodiversity and Speciation
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CREDITS: 20	FHEQ LEVEL: 5	JACS CODE: BX71
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PRE-REQUISITES: N/A	CO-REQUISITES: N/A	COMPENSATABLE: Yes
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SHORT MODULE DESCRIPTOR:

This module introduces biodiversity. It examines the classification and diversity of the major groups or organisms, examining their varied biology and ecological roles. The module will also examine the distribution and variation of these organisms on a global scale as well as temporal changes in biodiversity. It will look in details at the ecological mechanisms behind speciation.

ELEMENTS OF ASSESSMENT

WRITTEN EXAMINATION		COURSEWORK	
T1 (in-class test)	40%	C1	60%

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

Professional body minimum pass mark requirement: N/A

MODULE AIMS:

The aim of this module is to provide a brief introduction to the major groups of organisms and their spatial and temporal diversity across the globe. The module also aims to provide an understanding of the mechanism of speciation and evolution and the influence of genetics on this process.

ASSESSED LEARNING OUTCOMES: (additional guidance below)

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

1. Critically analyse the key spatial and temporal patterns of biodiversity.
2. Analyse the significance of genetic variation to the process of natural selection.
3. Develop awareness of population genetics, microevolution and speciation.
4. Show awareness of the biodiversity of major groups of organisms.

DATE OF APPROVAL: 10/02/2010	FACULTY/OFFICE: AP
DATE OF IMPLEMENTATION: 09/2011	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE: N/A	TERM: 11/AY/AU/M

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 2020/21	NATIONAL COST CENTRE: 112
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MODULE LEADER: Matt Rossin	OTHER MODULE STAFF:
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Summary of Module Content

Scales of biodiversity (genetic to organism level). Classification, phylogenetics and cladistics. Global patterns of biodiversity and biogeography. Biodiversity and evolution of major animal classes. Population and evolutionary genetics: Mechanisms of speciation. History of evolutionary thought. Macro-evolution, co-evolution and adaptive radiation. Origin of life and abiogenesis. RNA hypothesis, endosymbiosis and multi-cellularity.

SUMMARY OF TEACHING AND LEARNING

Activities	Hours	Comments/Additional Information
Scheduled delivery	36	1.5 hours per taught lecture session
Practical classes and workshops	6	Discussion classes, workshops and case study seminars.
Scheduled Tutorials	3	Group and one-to-one sessions for assignment and learning support.
Guided independent study	155	Directed weekly reading, web-based tasks and reading, and assessment development/revision
Total	200	

Category	Element	Component Name	Component weighting	Comments <i>Include links to learning objectives</i>
Written Exam	T1	In-Class Test	100%	1.5 hours. LO2, LO3.
Coursework	C1	Essay	100%	2500 words. LO1, LO4

Updated by: Matt Rossin Date: 14/07/20	Approved by: Luke Peakman Date: 14/07/20
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SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD2221	MODULE TITLE: Human Physiology
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CREDITS: 20	FHEQ LEVEL: 5	JACS CODE: C900
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PRE-REQUISITES: N/A	CO-REQUISITES: N/A	COMPENSATABLE: Yes
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SHORT MODULE DESCRIPTOR: This module will introduce students to the major body systems and their integrated functions, with particular emphasis on homeostasis. It covers development from conception to old age.

ELEMENTS OF ASSESSMENT			
WRITTEN EXAMINATION		COURSEWORK	
T1 (in-class test)	50%	C1	50%

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

Professional body minimum pass mark requirement: N/A

MODULE AIMS: This module will introduce students to the major body systems and their integrated functions, with particular emphasis on homeostasis. It covers development from conception to old age.

ASSESSED LEARNING OUTCOMES: (additional guidance below) At the end of the module the learner will be expected to be able to: <ol style="list-style-type: none">1. Demonstrate an awareness of the functioning and integration of the major body systems.2. Develop awareness of the processes involved in maintaining homeostasis3. Appreciate the significance of body changes during the human life cycle

DATE OF APPROVAL: 10/02/2010	FACULTY/OFFICE: AP
DATE OF IMPLEMENTATION: 09/2010	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE: N/A	TERM: 11/AY/AU/M

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 2020/21	NATIONAL COST CENTRE: 112
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MODULE LEADER: Paul Hallas	OTHER MODULE STAFF:
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Summary of Module Content

Anatomical terminology, levels of organisation, cardiovascular system, respiratory system, renal system, digestive system, musculoskeletal system, nervous system, integumentary system. Homeostasis. Development of anatomy and physiology from conception to death.

SUMMARY OF TEACHING AND LEARNING

Activities	Hours	Comments/Additional Information
Scheduled delivery	36	Lectures with class discussion to cover the content specified above
Tutorial	3	No extra content covered, one-on-one and group sessions including assessment support
Practical	6	Dissection and experimental work to support lectures.
Guided independent learning	155	Directed weekly reading, Moodle based tasks, and assessment development/revision
Total	200	

Category	Element	Component Name	Component weighting	Comments <i>Include links to learning objectives</i>
Written Exam	T1	In-Class Test	50%	In-class test covering LO1, LO2
			100%	
Coursework	C1	Report	100%	Illustrated report covering LO3

Updated by: Paul Hallas Date: 12/07/2020	Approved by: Luke Peakman Date: 13/07/2020
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UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD2452	MODULE TITLE: Immunology	JACS CODE: C550
CREDITS: 20	FHEQ LEVEL: 4	COMPENSATABLE: Y
PRE-REQUISITES: None	CO-REQUISITES: None	

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module examines the cells, molecules and mechanisms involved in the immune response. It covers responses to a range of pathogens, including immunological memory. It also looks at diseases resulting from unwanted immune reactions. In addition, the module will explore the use of antibodies in the diagnosis and treatment of diseases and will develop practical skills in immunological techniques.

ELEMENTS OF ASSESSMENT <i>[Use HESA KIS definitions] – see <u>Definitions of Elements and Components of Assessment</u></i>			
E1 (Examination)		C1 (Coursework)	70%
E2 (Clinical Examination)		A1 (Generic assessment)	
T1 (Test)	30%	P1 (Practical)	Pass/Fail

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Biosciences

Professional body minimum pass mark requirement: NA

MODULE AIMS:

To develop understanding of the processes involved in the immune response by examining the cells and molecules involved, and by looking at responses to specific diseases. To encourage the independent application of this knowledge to explain malfunctions of the immune response and associated diseases. To investigate *in vivo* and *in vitro* uses of antibodies in diagnosis and treatment of diseases in a practical and theoretical context.

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Critically analyse the roles and interactions of cells and molecules involved in the immune response.	PLO 1 PLO 2
LO2: Critically evaluate the immune response in relation to a range of specific diseases, and to malfunctions of the immune system.	PLO 2, PLO 4, PLO 6
LO3: Appraise the significance of antibodies as tools for analysis, diagnoses, and treatment of disease.	PLO 1, PLO 2, PLO 7
LO4: Demonstrate competency in immunological techniques	PLO 3

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: Semester 1

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Luke Peakman	OTHER MODULE STAFF:

Summary of Module Content

The processes involved in the innate and adaptive immune response, including the role of leukocytes, antibodies, cytokines, and other molecules involved. The processes involved in the generation of immunological memory. The responses to a range of pathogens. Autoimmune diseases. The use of antibodies in immunofluorescence microscopy, ELISA, and other techniques for diagnosis and treatment of diseases and their impact on society. Practical competence in immunological techniques will also be developed and assessed.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities <i>[KIS definitions]</i>	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Scheduled delivery	35	Discussions and teacher and student led activities
Practical classes and workshops	7	Development and assessment of practical skills
Tutorial	3	Support in the development of assessment work and skills
Guided independent study	155	Directed weekly reading, VLE based tasks and assessment development/revision
Total	200	(NB: 1 credit = 10 hours of learning; 20 credits = 200 hours, etc.)

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Illustrated report LO1, LO2	100%
Test	In-class test covering LO3	100%
Practical	Demonstrate technical competency in immunological techniques LO4	Pass/Fail

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Coursework	Illustrated report LO1, LO2	100%
Test	In-class test covering LO3	100%
Practical	Demonstrate technical competency in immunological techniques LO4	Pass/Fail

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Luke Peakman Date: 22/05/2020	Approved by: James McCauley Date: 22/05/2020

UNIVERSITY OF PLYMOUTH MODULE RECORD

SECTION A: DEFINITIVE MODULE RECORD.

MODULE CODE: SOUD2453	MODULE TITLE: Work Experience	
CREDITS: 0	FHEQ LEVEL: 5	JACS CODE: C100
PRE-REQUISITES: None	CO-REQUISITES: None	COMPENSATABLE: N

SHORT MODULE DESCRIPTOR: *(max 425 characters)*

This module involves a practical approach to employment in the bioscience sector with a requirement for a number of days in employment within the industry to meet Royal Society of Biology accreditation.

ELEMENTS OF ASSESSMENT <i>[Use HESA KIS definitions]</i> – see Definitions of Elements and Components of Assessment			
E1 (Examination)		C1 (Coursework)	
E2 (Clinical Examination)		A1 (Generic assessment)	Pass/Fail
T1 (Test)		P1 (Practical)	

SUBJECT ASSESSMENT PANEL to which module should be linked: FdSc Bioscience

Professional body minimum pass mark requirement: NA

MODULE AIMS:

To provide an opportunity to engage with bioscience sector workplaces and develop professional and transferrable skills relevant to graduates of Biosciences. This module further aims to improve graduates' employability.

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

Assessed Module Learning Outcomes	Award/ Programme Learning Outcomes contributed to
LO1: Complete minimum of 80 hours work experience within the bioscience sector.	PLO3

DATE OF APPROVAL: 15/03/18	FACULTY/OFFICE: Academic Partnerships
DATE OF IMPLEMENTATION: 17/09/2018	SCHOOL/PARTNER: South Devon College
DATE(S) OF APPROVED CHANGE:	SEMESTER: AY

Additional notes (for office use only):

SECTION B: DETAILS OF TEACHING, LEARNING AND ASSESSMENT

ACADEMIC YEAR: 20-21	NATIONAL COST CENTRE: 112
MODULE LEADER: Luke Peakman	OTHER MODULE STAFF:

Summary of Module Content

This module will run over all years of the FdSc Biosciences programme. Students will be supported to gain a minimum of 80 hours appropriate sector work experience. In the workplace, students will put into practice professional and transferable skills from across the programme of study.

SUMMARY OF TEACHING AND LEARNING		
Scheduled Activities <i>[KIS definitions]</i>	Hours	Comments/Additional Information (briefly explain activities, including formative assessment opportunities)
Placement	80	Supported work experience in bioscience sector workplace
Total	80	

SUMMATIVE ASSESSMENT

Element Category	Component Name	Component Weighting
Generic Assessment	Completion of a minimum of 80 hours work experience including employer feedback LO1	Pass/Fail

REFERRAL ASSESSMENT

Element Category	Component Name	Component Weighting
Generic Assessment	Completion of a minimum of 80 hours work experience including employer feedback LO1	Pass/Fail

To be completed when presented for Minor Change approval and/or annually updated	
Updated by: Luke Peakman Date: 24/04/2020	Approved by: James McCauley Date: 24/04/2020