

## **Introduction**

### **What is in this Study Guide?**

We hope that this Life Sciences Study Guide will:

- Summarise important essential information, guidance and advice on issues of teaching, learning and student support
- Help you achieve your maximum potential taking modules and/or degrees offered by the College of Life Sciences

### **Key Dates in Academic Year 2013-2014**

#### **Semester 1**

Freshers' Week:

2-6 September 2013

Teaching Weeks 1-5 & 7-12

9 September – 11 October 2013

21 October – 29 November 2013

Unscheduled Teaching Week

14 – 18 October 2013

Semester 1 Exam Weeks 13 & 14

2 – 12 December 2013 inclusive

4 weeks Christmas Vacation:

16 December 2013 – 10 January 2014

#### **Semester 2**

Teaching Weeks 15-25

13 January – 28 March 2014

3 weeks Easter Vacation:

31 March – 18 April 2014

Semester 2 Exam Weeks 26-30

21 April – 23 May 2014 inclusive

Graduation ceremonies:

17 – 20 June 2014

Single resit diet for Semesters 1&2

4 – 15 August 2014 inclusive

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## SECTION 1: Management of undergraduate teaching

### 1.1 Key contacts

Some key members of staff in the SLSL&T are listed to the right. In addition, each module has academic staff responsible for its academic content and for running the module (the Module Meader). Module Managers have teams of academic, clerical and technical staff to help them run the various component parts of the modules for which they are responsible. The names and E-Mails of the module Managers in Section 4 which provides descriptions of individual undergraduate modules run by the College of Life Sciences.

#### Key Contacts in SLSL&T

**Dean:** Professor David Coates  
**Phone:** 01382 385111  
**Email:** [d.coates@dundee.ac.uk](mailto:d.coates@dundee.ac.uk)

**School Secretary:** Mrs Brenda Murphy  
**Phone:** 01382 386438  
**Email:** [b.m.murphy@dundee.ac.uk](mailto:b.m.murphy@dundee.ac.uk)

**Head of L3:** Dr Linda Morris  
**Phone:** 01382 384682  
**Email:** [l.a.z.morris@dundee.ac.uk](mailto:l.a.z.morris@dundee.ac.uk)

### 1.2. Our responsibilities in the provision of teaching

The Module Manager is responsible for:

- o producing a module handbook to explain the teaching aims and learning objectives of the Module;
- o explaining the procedures by which you will be taught and examined;
- o providing opportunities for you to judge your progress in the Module e.g. in the form of diagnostic or formative assessments;
- o monitoring your attendance in classes, ask you to explain any unauthorised absence or other failure to participate in the work of the Module, and report you to the relevant Head or Year any failure to attend and/or participate, or for poor academic performance.

### 1.3. Seeking help, advice and information from SLSL&T

The SLSL&T Office reception is in **Room C.G.14** of the Carnelley Building and is a “one-stop-shop”, manned from 9am – 4.30pm, Monday to Friday if you wish to drop by in person.

**To make an appointment to see the School Secretary or the Dean**  
**Phone:** 01382 384182 or  
**Email:** [SchoolOffice-LS@dundee.ac.uk](mailto:SchoolOffice-LS@dundee.ac.uk)

#### Contact details

**L3 Teaching Support**  
**Phone:** 01382 388178  
**Email:** [lsuglevel3@dundee.ac.uk](mailto:lsuglevel3@dundee.ac.uk)

## 1.4. MY DUNDEE

*My Dundee* is the University of Dundee's web-based student portal, giving you access to your learning materials, your student clubs and societies and many other College and discipline specific resources.

### Logging into *My Dundee*

<http://my.dundee.ac.uk/>

The URL above takes you to the login page for *My Dundee* and requires the same username and password as your login to the University computer system. Alternatively, follow links to it from the University of Dundee Homepage, via Current Students > *My Dundee*. Your use of *My Dundee* is subject to University Regulations for the Use of Computer Facilities.

- *The My Dundee screen*: The initial screen that appears once you log on provides access to your modules, announcements, calendar, tasks and additional areas. You can customise your *My Dundee* page by adding extra features, and changing the colours and layout.
- *My Modules*: All modules you are enrolled in are available from the Course List under My Modules tab, or from My Modules on the right hand side of the *My Dundee* screen.
- *My Files*: This tab gives access to a personal file store on *My Dundee* which you will need if your course or module is making use of electronic portfolios.
- *My Webmail*: This tab gives access to your University GroupWise e-mail account.
- *PC Requirements*: You can access *My Dundee* using PCs in the University's IT suites. However, if you wish to logon from outside the University please follow the links below:

Browser and platform compatibility checks:

<http://kb.blackboard.com/pages/viewpage.action?pageId=71860304>

We also provide a link to a browser checker so that users can check their own setup:

<http://www.dundee.ac.uk/elearning/browserchecker/>

**Life Sciences Undergraduate Students: Useful Information** is the module where general useful information such as Degree Regulations and various important school documents such as Student Notification of Absence Form is stored for your information and use.

### Further Help

If you have any problems using *My Dundee*, consult the Help tab, or try:

- ✓ *visiting* the IT Service Desk in the Tower Basement IT Suite or Main Library.
- ✓ *e-mailing* a description of your problem to [elearning@dundee.ac.uk](mailto:elearning@dundee.ac.uk).

- ✓ *telephoning* – use the ‘Service Desk’ button on a phone in an IT Suite or on other phones dial extension 88000 (or 01382 388000 externally).

### 1.5. Help with academic matters

- Help from staff or Module Managers: If you have queries regarding module content or you wish one of the teaching staff or Module Managers to provide a reference or special letter, email the staff member specifying your query or requesting an appointment.
- Help from your Adviser of Studies: It is imperative that you speak to your Adviser of Studies if you are intending to make changes to your programme of study whether it is changing modules or changing degree programme. Your Adviser of Studies can also provide references for you. In addition, if you are having problems that are affecting your ability to study, it is advisable to report these to your Adviser of Studies and the Head of Year.
- Help from Heads of Years: You can also seek help from your relevant Head of Year who are Dr Linda Morris [l.a.z.morris@dundee.ac.uk](mailto:l.a.z.morris@dundee.ac.uk), for levels 1, 2 and 3.

### 1.6. Help with regulatory matters from the School Secretary:

Occasionally health or personal problems have such a debilitating effect that you may have to consider withdrawing temporarily from your studies if you are continuously absent from your studies for **3 weeks or more**. In this event you should discuss the matter with the School Secretary, who can advise on issues relating to Regulations and funding. Such discussions will be kept confidential, unless there are circumstances in which your interest would be best served by divulging the confidential information to other staff. Your permission would be sought in this event.

#### Degree examination timetables

Please note that Registry publish degree exam timetables on the University web site in November for semester 1, in March for semester 2 and in July for the resit diet. The examinations only take place on Campus and only at the particular times published in the exam timetables. There are no exceptions so beware when booking holidays or flights home within the semester dates given on the back cover of this booklet.

#### Degree examination results

Provisional semester 1 degree examination results will be available via eVision from the second week in January. The official results for both semester 1 and 2 will be available via eVision and also sent by post in June following the examination board meetings. The resit results will be available via eVision and by post in late August. Please note that examination results will **NOT** be conveyed via the telephone. Therefore, please **do not** telephone the SLSL&T office secretaries requesting this information,

## SECTION 2: Your responsibilities as a student - learning, attendance and communication

### 2.1. Communication

It is your responsibility to keep yourself informed about the modules you are taking by reading and referring to the individual module handbooks available on-line via *My Dundee* and checking the following at least **once per day** for any urgent updates or rescheduling notices. You must use your University e-mail address for all communications with staff.

**Check the following at least once per day for urgent updates or rescheduling notices**

✓ **Your Dundee university Email account**

✓ ***My Dundee* 'Announcements'**

**From week 4 on a regular basis check**

✓ **eVision**

**and report any discrepancies, by email, to [lsuglevel3@dundee.ac.uk](mailto:lsuglevel3@dundee.ac.uk) address asap**

### 2.2. Student attendance and participation

#### 2.2.1 Attendance at compulsory classes and coursework submissions

You are encouraged to attend all lectures and scheduled classes in the timetables for all School of Life Science modules. However, for all modules, attendance at workshop and practical classes is **COMPULSORY** attendance registers are taken and it is your responsibility to ensure your attendance is noted each time.

At the end of the second week of teaching in both Semester 1 and 2 you will receive a general E-Mail reminding you of the importance of attending classes and submitting compulsory coursework. This is the only formal reminder you will receive about your attendance and submission of coursework.

Your attendance and course work submissions are strictly monitored and you should notify the School Office of any non-attendance or non-submissions using the appropriate procedure described in Section 2.2.3 below.

An accumulation of more than **one** unauthorised absence (AB) for either non-attendance and/or non-submission of coursework may result in your Duly Performed (DP) status being withdrawn for the affected module. DP status is a requirement for eligibility to take the degree examination, so withdrawal of your DP means that you are debarred from taking the degree examination for the module at both the first and second diet of exams. If your affected module is assessed by 100% coursework you will not be eligible to receive a grade for this module. You will receive a formal letter advising you of your DP withdrawal and offered an opportunity to meet with the School Secretary and Head (or Deputy Head) of Year.

#### 2.2.2 Submitting your course work

Submission of all course work assignments (paper-based or electronic) are **COMPULSORY** and should be submitted according to the instructions given in the

Assessment and Submission Deadline sections in individual module handbooks. Unless otherwise informed, **ALL** coursework should be submitted in the black boxes in the basement level of the Carnelley Building. You will have your marked paper-based assessments returned to you through the School Office Reception in Carnelley room C.G.14. Students will be notified by email that coursework is ready for collection. Extensions to a submission deadline can only be given by a Module Manager and must be recorded by the School Office

### 2.2.3 What to do when absent from compulsory classes or examinations

If you are absent from classes, it is important that you complete a **Student Notification of Absence form**, available from the Life Sciences School Office reception in Carnelley room C.G.14, either before or within **SEVEN DAYS** following the class and/or assessment. Depending upon the circumstances, as outlined below, you may also be required to provide a medical certificate or letter explaining your absence.

- **Absences of up to 5 days:** You can self-certify by completing a Student Notification of Absence form. For minor illnesses, an MC grade will be entered into your assessment record. If your absence is due to a cause other than illness and the reason given on the Student Notification of Absence form is considered legitimate, then a certified absence (CA grade) will be granted.
- **Absences of more than 5 days:** If an illness results in an absence of more than 5 days, then, in addition to the Student Notification of Absence form, a medical certificate signed by a GP will also be required. If the absence is for reasons other than illness, then you must submit a letter explaining the prolonged absence. In the latter case, you will be informed if your reason for absence is deemed to be certified.
- **Absence requests for extra curricula activities** must be made in writing to the School Office well in advance of the event **not after**. You are unlikely to be retrospectively awarded a Certified Absence.
- **Self Certification :** Please note that in the interest of ensuring you receive the optimum learning experience and reach your full potential on your modules, only two occasions of self-certified absences/non-submission of course work can be sustained. If your attendance record shows more than two MC's (Medical related) or CA's (non-medical related) you will be invited to meet with the School Secretary and Head (or Deputy Head) of Year, to review your position with regard to missed classes and/or course work.

### 2.2.4. Absence from exams (in-course tests as well as degree exams)

Email [SchoolOffice-LS@dundee.ac.uk](mailto:SchoolOffice-LS@dundee.ac.uk) or telephone 01382 384182 as soon as possible. In addition, if you miss the examination due to illness, you must send in a medical certificate within **SEVEN DAYS** following the examination. Self-certification is not allowed for absence from examinations. If you miss an examination, through no fault of your own, for reasons other than illness, then you must submit corroborative documentation within **SEVEN DAYS** following the examination.



### 2.2.5. Life Sciences Scrutiny Committee procedure

If, during the course of your studies, you experience unforeseen and unavoidable circumstances that you believe have had a **significant negative impact** on your performance in coursework and/or examinations, you should submit your case (including supporting evidence where possible) in confidence for consideration by the College of Life Sciences Scrutiny Committee. The Scrutiny Committee meets in advance of the examination boards for modules to consider submissions made to the committee and makes recommendations to the Board of Examiners on the level of support that should be given in each case. In accordance with the Data Protection Act, no significant details of any submission to the Scrutiny Committee are revealed to the Board of Examiners.

#### How to report mitigating circumstances to the Scrutiny committee

- Fill in a Scrutiny Committee Form, which you can download from the module BSG275 Life Sciences Undergraduate Students: Useful Information on *My Dundee*. or obtain from the Life Sciences School Office reception in Carnelley room C.G.14, giving brief details of how your work was affected - e.g. unable to concentrate for revision etc.
- Provide documentary evidence of the problem giving some indication of the period of time involved e.g. doctor's note, a statement of support from a third party (e.g. Adviser of Studies, parents) to support your case.
- The Scrutiny Committee Form will have the submission dead-line clearly identified and it is your responsibility to ensure that this form is submitted to the Life Sciences School Office on or before the dead-line provided. It may not be possible to consider late submissions.

**Please note that you will not normally receive feedback on your submission from the Scrutiny Committee.**

### 2.2.6. Consequences of absence and/or failure to submit coursework

**Prolonged absence** - In the event of prolonged absence from classes for a period of more than 3 weeks, for any cause including legitimate reasons, you may require the consent of the Academic Senate for you to be allowed to enter the Degree examinations.

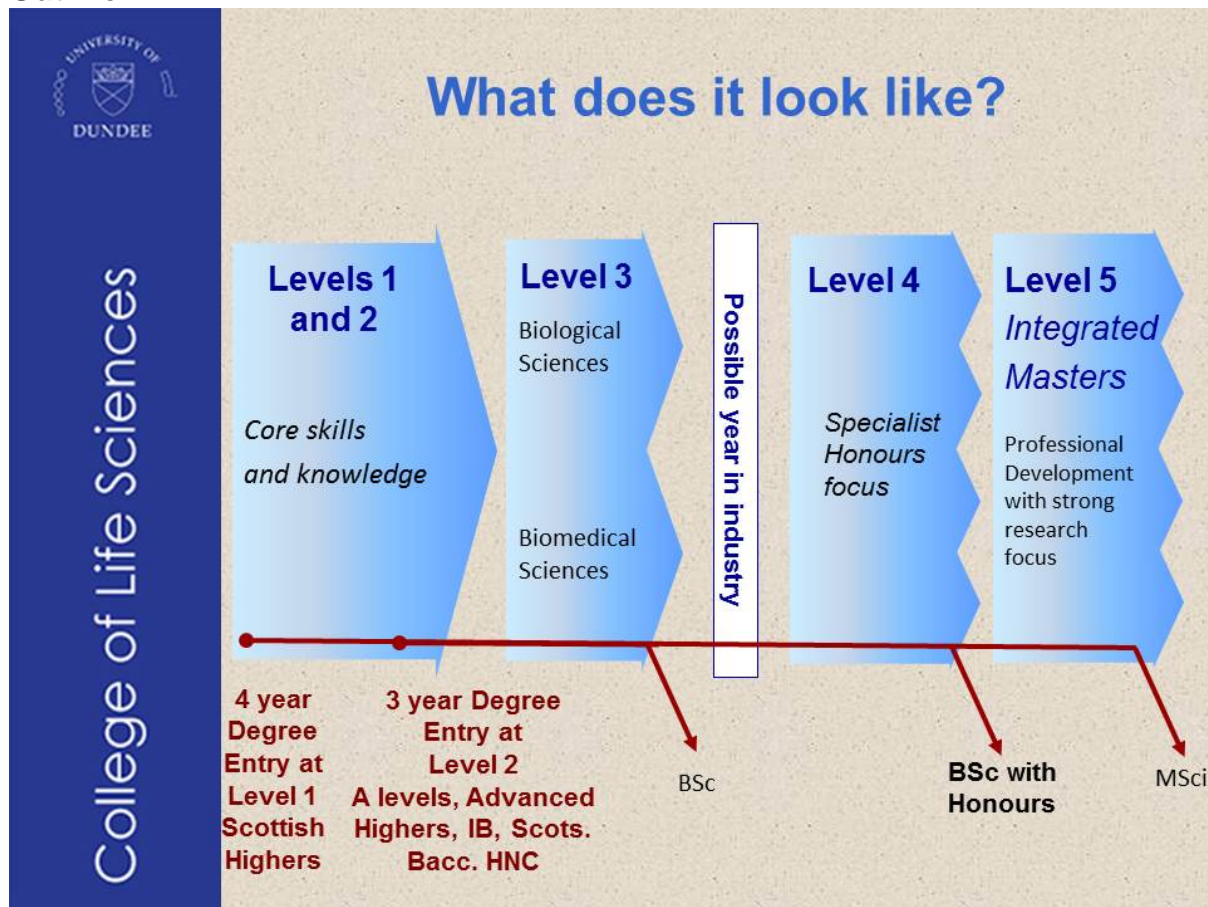
**Withdrawal of DP** – In the event that you have unexplained absences from compulsory scheduled classes for a module and/or have failed to submit compulsory coursework for no good reason, you may have your Duly Performed (DP) certificate removed which debars you from sitting the degree examination.

**Discounted year** - In the event that you are prevented from engaging with your study for legitimate reasons over a prolonged period, you may apply through the Life Sciences School Office to have the year discounted. An application for a discounted year should be submitted to the Life Science School Secretary as soon as possible and in any event not later than the end of semester 2 (before the Easter break). It is possible to retain credits already accrued from modules completed in the discounted year.



## SECTION 3: Degrees in Life Sciences and Modular Structure

### College of Life Sciences Degree Programme Outline



#### 3.1. Level 1 Life Sciences core curriculum

Students are automatically enrolled on modules essential for their degree but you may wish to check which modules these are by referring to the degree regulations available on the module Life Sciences Undergraduate Students: Useful Information on *My Dundee*.

#### 3.1.2. How will you be assessed?

We use a variety of assessment types as listed below:

Module type	Assessment type	Learning outcomes assessed
Theory and practical	<b>On-line examination and tests</b> (using QMP and EOL) <b>Written examinations</b> (SAQs and essay type questions)	Core knowledge, numerical skills, problem solving and critical thinking.
Practical and theory	<b>Presentations</b> (oral and poster)	Communication skills and presentation of data.
Practical and theory	<b>Scientific writing</b> (reports, case studies, literature review, essays)	Written communication, presentation and analysis of data, critical thinking and problem solving

### **3.1.3. Feedback**

You will receive feedback on all your coursework submissions which may be provided in a variety of forms e.g. hard copy feedback sheets, electronic feedback sheets, oral feedback (individual or group).

3.1.4. Life Science modules at Level 3

<b>LEVEL 3 Biomedical Science Modules</b>	
<b>SEMESTER 1 BLOCK A</b>	<b>SEMESTER 2 BLOCK C</b>
<b>BS31007: Neurophysiology (15 Credits)</b>	<b>BS32013: Respiratory &amp; Renal Physiology (15 Credits)</b>
<b>BS31009: Molecular Pharmacology (15 Credits)</b>	<b>BS32015: Systems Pharmacology (15 Credits)</b>
<b>BS31011: Clinical Exercise Science 1 (15 Credits)</b>	<b>BS32017: Clinical Exercise Science (15 Credits)</b>
<b>SEMESTER 1 BLOCK B</b>	<b>SEMESTER 2 BLOCK D</b>
<b>BS31004: Biochemistry &amp; Cell Biology** (15 Credits)</b>	<b>BS32009: Immunology (15 Credits)**</b>
<b>BS31008: Endocrine Control of Body Homeostasis (15 Credits)</b>	<b>BS32014: Gastrointestinal Physiology and Nutrition (15 Credits)</b>
<b>BS31010: Neuropharmacology (15 Credits)</b>	<b>BS32016: Systems Pharmacology 2 (15 Credits)</b>
<b>BS31012: Sport &amp; Exercise Training Science 1: Physiological Testing and Monitoring (15 Credits)</b>	<b>BS32018: Sports &amp; Exercise Training Science 2: Science of Training (15 Credits)</b>

\*\* Options from the Biological stream

### 3.1.5. Level 3 module descriptions

#### Semester 1 Block A Modules

##### BS31007: Neurophysiology (15 credits)

Module Managers: Dr Alexander Harper

##### Brief description of module:

Students will acquire a good understanding of the physiology of the central and peripheral nervous systems. Topics covered in the module are as follows:-

- Techniques for investigating the molecular and cellular physiology of neurones
- Organisation of the nervous system and cellular neuroanatomy
- Electrical properties of neurones and homeostasis
- Active propagation of neural signals
- Synaptic transmission and ligand-gated ion channels
- Metabotropic transmission and neuromodulation
- Sensory transduction
- Sensory systems
- Motor systems

##### Intended learning outcomes

After successful completion of this module students should be able to demonstrate knowledge and understanding of how nervous systems are built and function, using examples from all stages of neural organization (from signalling pathways to integrated reflex pathways).

##### Skills

- Students will develop and apply skills of problem solving and data analysis in critical evaluation of scientific literature and in scientific writing.
- Students will be able to apply practical physiological techniques to study the nervous system.

##### BS31009: Molecular Pharmacology (15 credits)

Module Manager: Dr A. J. Irving

##### Brief description of module:

This module emphasises core knowledge and its application and development of transferable skills. Students should acquire a good understanding of molecular pharmacology including receptor theory and downstream biochemical signalling pathways. Topics include:

- Receptor theory
- The nature of receptors
- Signalling *via* G-protein coupled receptors
- Signalling *via* small G-proteins
- Regulation of GPCR function and trafficking
- GPCRs in drug discovery
- Signalling *via* adenylate and guanylate cyclase (cAMP, cGMP)
- Phosphodiesterases
- Signalling *via* phospholipases A & C
- Signalling *via* Ca<sup>2+</sup> and cellular Ca<sup>2+</sup> homeostasis

### **Intended learning outcomes**

- Students should understand the relationship between receptor occupancy and effect for agonists and how antagonists act to block receptors.
- Using examples from various signalling pathways (specified below), students should be able to describe and explain the cellular actions of neurotransmitters and exogenous agents and how these may be modulated by pharmacological agents.

### **BS31011: Clinical Exercise Science 1 (15 credits)**

*Module Manager:* Dr Anna Campbell

#### **Brief description of module:**

This module aims to develop the students' understanding of the relationship between physical activity, health and disease and examines the benefits of exercise in the prevention and treatment of a wide range of chronic conditions.

#### **Intended learning outcomes**

After successful completion of this module students should be able to:

- Report the aetiology and prevalence of a number of chronic diseases and the function of physical activity in the prevention and treatment of these conditions.
- Discuss current evidence based guidelines for exercise prescription of chronic diseases such as cardiovascular disease, obesity, stroke, diabetes osteoporosis etc

#### **Skills**

- Critically analyse data from research studies on exercise and health and deduce potential sources of errors.

## **Semester 1- Block B Modules**

### **BS31004: Biochemistry & Cell Biology (15 credits)**

*Module Manager:* Dr Linda Morris

#### **Brief description of module:**

The aim of this Module is to introduce students to specific topics within the area of Biochemistry and Cell Biology that will underpin the more specialised areas that the students will encounter in Semester 2 of Level 3 and in Level 4. The Module also aims to strengthen students' skills in scientific writing, critical analysis of scientific literature and in self-directed learning.

#### **Intended learning outcomes -**

Topics covered in the module are as follows:-

- How proteins function at the molecular level
- Protein folding, targeting, posttranslational modification and turnover
- The cytoskeleton, molecular motors, cell division and how cells form tissues
- Cell signalling and regulation of metabolism
- Bioenergy and photosynthesis
- Systems Biology approaches

#### **Skills**

Students will develop and apply skills in problem solving and numeracy in critical analysis of scientific literature and in scientific writing and communication.

### **BS31008: Endocrine Control of Body Homeostasis (15 credits)**

Module Managers: Professor Hari Hundal

#### **Brief description of module:**

This module outlines the physiological importance of the endocrine system in maintaining body homeostasis. Topics covered will include: the role of hypothalamic/pituitary axis; thyroid hormone and regulation of metabolic rate; hormonal control of growth and calcium homeostasis; insulin and its impact on fuel metabolism; obesity, appetite control and diabetes; the function of adrenal hormones; hormonal control of reproduction

#### **Intended learning outcomes**

Students should be able to demonstrate knowledge and understanding of the endocrine system and its impact upon control of key processes such as:

- Regulation of blood sugar
- Calcium balance
- Appetite/satiety
- Reproduction

#### **Skills**

Students will develop and apply skills of problem solving and data analysis in critical evaluation of scientific literature and in scientific writing.

### **BS31010: Neuropharmacology (15 credits)**

Module Manager: Dr. C.A. Stewart

#### **Brief description of module:**

This is a module that emphasises core knowledge and its application and development of transferable skills.

Students should acquire a good understanding of the pharmacology of the central and peripheral nervous systems.

#### **Intended learning outcomes**

After successful completion of this module:

- Using examples from various neurotransmitter systems, ranging from aspects of synaptic transmission to animal behaviour, students should be able to describe and explain chemical transmission within the nervous system and how this may be modulated to achieve therapeutic benefit in several disorders of nervous system function.

#### **Skills**

- Students will learn how to perform complex data analyses and solve problems related to neuropharmacology.
- Students will be competent in practical physiological techniques involved in study of the nervous system.



## **BS31012: Sport & Exercise Training Science 1: Physiological Testing and Monitoring (15 Credits)**

*Module Manager:* Dr Audrey Duncan

### **Brief description of module:**

The aim of this module is to develop the student's understanding and practice of the applied sports science support process, physiological testing and monitoring of performance. Topics include:

- The applied sports science support process
- Introduction to physiological testing and monitoring
- The research process in Sports Biomedicine
- Body composition
- Flexibility
- Energy systems
- Testing aerobic power
- Testing anaerobic power
- Monitoring tools
- Designing a test session
- Drug testing in sport
- Testing as part of an integrated approach

### **Intended learning outcomes**

After successful completion of this module students should be able to:

- Describe the applied sports science support process and illustrate how an integrated approach is an important part of this process.
- Classify the parameters of fitness and relate how they can be tested and monitored.
- Design a physiological testing and monitoring programme, based on scientific knowledge gained.

Skills

- Interpret test data, design an associated client report and relate this information to a "client group".

## **Semester 2- Block C Modules**

### **BS32013 Respiratory & Renal Physiology [15 Credits]**

Module Managers: Dr Graham Christie

### **Brief description of module:**

Student completing this module should acquire a good understanding of the physiology of the respiratory and renal systems. Topics will include the following: the structure/function of epithelia, introduction to respiration, carriage of O<sub>2</sub>/CO<sub>2</sub> in the blood mechanics of breathing, alveolar gases/ventilation-perfusion relationships, regulation of breathing, neural and chemical control of breathing, pathophysiology (e.g. CF, COPD, asthma), body fluid compartments, kidney: Structure and function, Glomerular filtration and renal blood flow, the proximal tubule, the Loop of Henle, the distal tubule and collecting ducts, control of body fluid volume and composition, pathophysiology (e.g. diabetes insipidus, Dent's disease, Fanconi syndrome, kidney stones)

### **Intended learning outcomes**

After successful completion of this module students should be able to demonstrate knowledge and understanding of the functions of respiratory and renal systems in human physiology.

#### **Skills**

Students will develop and apply skills of problem solving and data analysis in critical evaluation of scientific literature and in scientific writing. They will also be able to apply practical physiological techniques involved in study of respiratory and renal physiology.

### **BS32015 Systems Pharmacology 1 [15 Credits]**

Module Manager: Dr Graham Rena

#### **Brief description of module:**

This module emphasises core knowledge and its application and development of transferable skills.

Students should acquire a good understanding of aspects of Systems Pharmacology that particularly involve signalling by hormones. Topics include:- Thyroid hormones; Endocrine pancreas and signalling by insulin; Signalling via kinase-linked receptors; Obesity; The adrenal cortex (glucocorticoids); Sex steroids; Signalling via nuclear receptors; Anti-inflammatory and immunosuppressant drugs; Haemostasis and thrombosis; and Atherosclerosis and lipoprotein metabolism

#### **Intended learning outcomes**

- Describe the role of the endocrine system in the control of numerous physiological processes
- Explain how many commonly prescribed drugs act to modify, or mimic the actions of hormones.
- Demonstrate knowledge of lipid metabolism and the blood coagulation cascade and drugs that are used in dyslipidaemias and blood disorders.

#### **Skills**

- Students will learn how to perform complex data analyses and solve problems in the field of systems pharmacology.

### **BS32017 Clinical Exercise Science 2 [15 Credits]**

Module Managers: Dr Anna Campbell

#### **Brief description of module:**

This module aims to give students an understanding of how to develop appropriate exercise programmes for specialist populations and the mechanisms by which exercise prevents chronic conditions. Topics include: Clinical Fitness testing; Exercise prescription; Exercise consultations; Exercise and psychosocial outcomes; Programme design; Prevention and treatment of exercise complications; Cardiac, stroke, diabetes rehabilitation; Exercise and the immune system; Exercise and inflammation; Changing behaviour; Exercise – public health policies

#### **Intended learning outcomes**

After successful completion of this module students should be able to:

- Devise safe and effective exercise programmes for various clinical populations
- Discuss the protective effects of exercise on inflammation and the immune system

#### **Skills**

- Carry out health related and clinical exercise tests

## **Semester 2- Block D Modules**

### **BS32009 Immunology [15 Credits]**

Module Manager: Dr Linda Morris

#### **Brief description of module:**

- This module will provide students with a broad understanding of key topics in immunology. This module will underpin more specialised areas of immunology that the students will encounter in their Level 4 laboratory projects and in Semester 2 of Level 4. The module aims to strengthen students' skills in problem solving, critical analysis of scientific literature and will be able to explain central concepts in the field of immunology and relate this to protection against infectious disease.
- Intended learning outcomes
- Students will be able to explain central concepts in the field of immunology and relate this to protection against infectious disease.
- Innate immune mechanisms that sense and eliminate pathogens
- Processing and presentation of antigenic material to drive immune responses
- Antibody-mediated protection
- Development and activation of B and T lymphocytes
- Lymphocyte function
- Mucosal immune defences
- Immunological memory and vaccination
- Immunity to viruses
- Immunodeficiency diseases
- Autoimmune diseases
- Immune hyperreactivity

### **BS32014 Gastrointestinal Physiology and Nutrition [15 Credits]**

Module Managers: Dr Peter Taylor

#### **Brief description of module:**

This module emphasises core knowledge and its application and development of transferable skills. Students should acquire a good understanding of the physiology of the gastrointestinal tract (GIT) and nutrition. Topics include:- structure/function of the GIT and accessory organs; salivary glands and deglutition; the stomach; digestion and absorption of carbohydrate, protein, lipids; dietary requirements and micronutrients; ion, solute and fluid balance: How it is regulated and what happens when it goes wrong; Integration of function and disorders of GIT function; evacuation from the GIT: Emesis and the large intestine; metabolic rate, the effect of exercise, fasting/growth and endocrine influences; and the measurement of energy expenditure and body composition.

#### **Intended learning outcomes**

After successful completion of this module students should be able to demonstrate knowledge and understanding of gastrointestinal physiology and the basic principles of human nutrition.

#### **Skills**

Students will develop and apply skills of problem solving and data analysis in critical evaluation of scientific literature and in scientific writing. They will also learn to apply practical physiological techniques in the study of human nutrition.

### **BS32016 Systems Pharmacology 2 [15 Credits]**

Module Manager: Professor J. A. Peters

**Brief description of module:**

This module emphasises core knowledge and its application and development of transferable skills.

Students should acquire a good understanding of aspects of Systems Pharmacology that particularly involve the respiratory, gastrointestinal and renal systems and also elements of clinical pharmacology. Topics include: Drugs acting on the respiratory system; Drugs acting on the kidney; Drugs acting on the G.I. tract; Drug disposition; Drug metabolism; Pharmacokinetics; Pharmacogenomics; Drug discovery and development

**Intended learning outcomes**

- Explain the molecular and cellular actions of drugs that act upon the respiratory, gastrointestinal and renal systems.
- Demonstrate a knowledge of drug disposition, pharmacokinetics, pharmacogenetics and the drug discovery/development process.

**Skills**

- Students will gain further experience in complex data analyses and problem solving in the field of systems pharmacology.

**BS32018 Sport & Exercise Training Science 2: Science of Training [15 Credits]**

Module Managers: Miss Helen Weavers

**Brief description of module:**

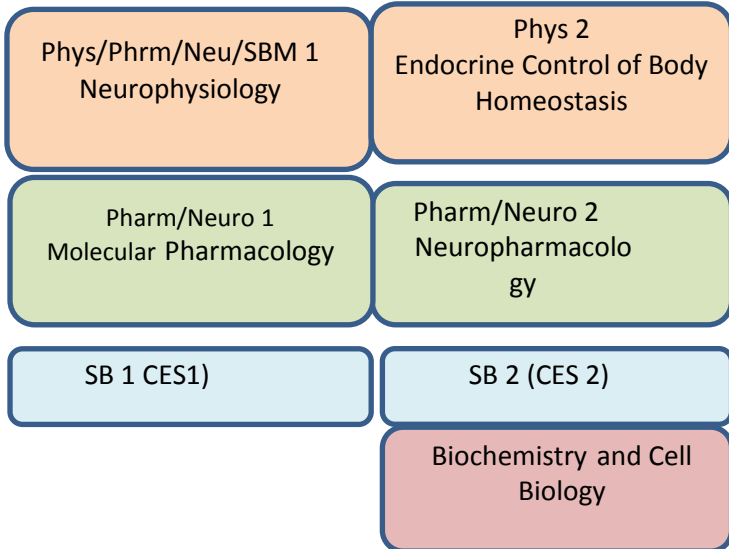
- This module leads on from SETS 1 (which is based on physiological testing and monitoring) by using the knowledge gained to develop training programmes based on scientific theory and application. Topics include: Principles of training; Designing a training programme; Changing body composition; Sports nutrition supplementation; Flexibility and warm up; Energy systems; Strength and power; Speed and agility; Rest and recovery; Training for disability sports; The female athlete triad; Environmental considerations; An integrated approach to programming

**Intended learning outcomes**

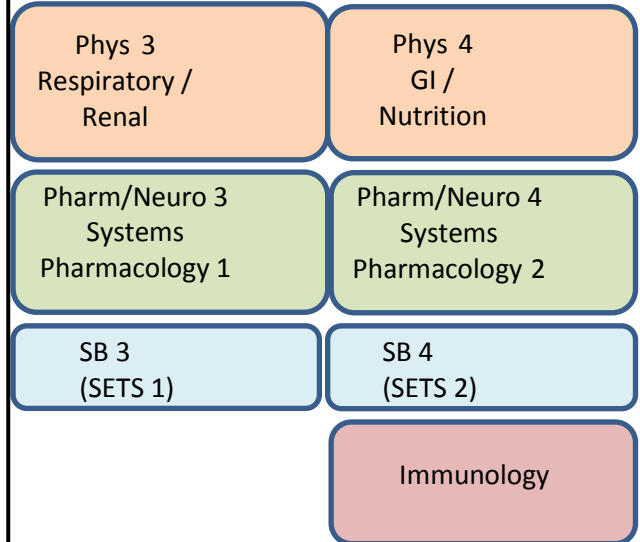
- Describe the principles of training.
- Investigate the parameters of fitness and how they can be trained.
- Explain how rest, recovery and supplementation have an impact on training and performance.
- Devise a detailed training programme based on scientific knowledge gained and how an integrated approach is important in this process.
- Develop an awareness of different sporting groups/specialist populations and additional considerations (such as the environment) that may impact on programming.

## Biomedical Sciences Structure at Level 3

### SEMESTER 1



### SEMESTER 2



## SECTION 4: Important regulatory information

### 4.1. The SCQF Credit Scheme and the Student Workload

The SCQF scheme envisages 1200 hours of work by you each year, based upon 40 hours a week for 30 weeks, successful completion of which will give you a total of 120 credits. The module credit rating indicates the total number of hours of effort that is required of you in that module e.g. a 20 credit module requires 200 hours of effort. Such a module could contain 30 hours of lectures, 25 hours of laboratory practicals and 5 hours of tutorials. The balance of the 200 hours (in this example 140 hours) must be spent by you on independent learning including background reading, getting your notes into shape, completing coursework, revision etc. If you obtain an overall pass grade for that module, you will be awarded 20 credits. If you fail, no credits will be awarded.

If you are a full-time student, you are expected to pass modules totalling 120 credits each year. Failure to do so may impact on the type of degree you achieve and the number of years it will take you to gain a degree.

### 4.2. Advisers of Studies – choosing your programme of study

You will meet Your Adviser of Studies when you first matriculate. They will help you to select modules to ensure that you gain the Modules necessary to proceed to the next year of study or to gain your intended degree. Your Adviser of Studies can also act as a Personal Tutor. This means that you are welcome to meet with your Adviser to discuss any matter giving rise for concern.

#### 4.2.1. Changing modules and/or your programme of study

You must seek the permission of your Adviser of Studies if you wish to make any changes to your programme of study. Your Adviser is the only person authorised to agree changes. This could include substituting one Module for another, simply dropping one or more Modules (provided that you understand and accept the consequences of a reduced workload) or changing your degree in view.

**You must make any changes to your module selection within 2 weeks of the start of Semester 1 or Semester 2.**

### 4.3. Studying abroad and eligibility criteria

You may wish to spend a period of study overseas (a semester or year) as part of a University of Dundee degree and so should check out the information on one or other of the following at [http://www.dundee.ac.uk/undergraduate/studying\\_abroad/](http://www.dundee.ac.uk/undergraduate/studying_abroad/)

- **ERASMUS Life Long Learning Programme** - study and work placement in Europe 2nd or 3rd year for one or two semesters.
- **Transatlantic student exchange** - spend your 2nd year of study in either the USA or Canada.
- **Australasia student exchange** - spend one or two semesters of your 3rd year of study in Australia, New Zealand or Hong Kong.



#### 4.3.1. Eligibility criteria

You must ensure that the programme of study you intend to take, at the host institution, is appropriate grounding for continuing with your chosen degree when you return to Dundee. Please note that, to have your application authorised by the Dean of the School of Life Sciences Learning & Teaching, you **MUST** satisfy the following criteria:

- ✓ You must have passes in all modules and a minimum of a **B3** grade average for the year of study prior to that during which you wish to go on the exchange.
- ✓ You must also have a good record of attendance and submission of in-course work for all years of study to date.

#### 4.4. Prizes and Life Sciences award ceremony

- **Core Curriculum Prizes for Level 1 and 2** – This prize goes to the top student(s) with the highest academic achievement and sustained attendance to all level 1 modules.
- **Other Prizes** – There are various other prizes and bursaries awarded by the School and College each year.
- **Awards Ceremony** – Students who have won module, School and College prizes are presented with certificates and prizes at a special Awards Ceremony which normally takes place in November of the new session.

#### 4.5. Assessment and examinations

##### 4.5.1. MC (medical certificate) and/or CA (certified absence) grades

Adjustments for MC/CA grades depend upon the element of assessment as follows:

- For assessed certified absence or non-submission of coursework, suitable adjustment will be made to the overall module grade to take these into account. Where this adjustment results in an upgrading, your overall module grade will be duly amended following the examiners meeting for the module.
- For certified absence from Degree examinations, your overall module grade will be amended to reflect 0 MC such that your coursework marks will go forward to the next diet of examinations for which your result will be recorded as a first attempt and not a resit on your official transcript.

### 4.5.2. Grade conversion tables used in summative assessment

Dependent upon the complexity and stakes of the assessment task a standard or stringent grade conversion is applied:

Examinations Standard % to Grade - conversion				Coursework Stringent % to Grade conversion			
%	GRADE	%	GRADE	%	GRADE	%	GRADE
0	AB	50	C3	0	AB	55	C3
1	BF	51	C3	1	BF	56	C3
2	BF	52	C3	2	BF	57	C3
3	BF	53	C2	3	BF	58	C3
4	BF	54	C2	4	BF	59	C3
5	BF	55	C2	5	BF	60	C2
6	BF	56	C1	6	BF	61	C2
7	BF	57	C1	7	BF	62	C2
8	BF	58	C1	8	BF	63	C2
9	BF	59	C1	9	BF	64	C2
10	BF	60	B3	10	BF	65	C1
11	BF	61	B3	11	BF	66	C1
12	BF	62	B3	12	BF	67	C1
13	BF	63	B2	13	BF	68	C1
14	BF	64	B2	14	BF	69	C1
15	BF	65	B2	15	BF	70	B3
16	BF	66	B1	16	BF	71	B3
17	BF	67	B1	17	BF	72	B3
18	BF	68	B1	18	BF	73	B3
19	BF	69	B1	19	BF	74	B3
20	CF	70	A3	20	CF	75	B2
21	CF	71	A3	21	CF	76	B2
22	CF	72	A3	22	CF	77	B2
23	CF	73	A3	23	CF	78	B2
24	CF	74	A3	24	CF	79	B2
25	CF	75	A3	25	CF	80	B1
26	CF	76	A3	26	CF	81	B1
27	CF	77	A3	27	CF	82	B1
28	CF	78	A3	28	CF	83	B1
29	CF	79	A3	29	CF	84	B1
30	CF	80	A2	30	CF	85	A3
31	CF	81	A2	31	CF	86	A3
32	CF	82	A2	32	CF	87	A3
33	CF	83	A2	33	CF	88	A3
34	CF	84	A2	34	CF	89	A3
35	MF	85	A2	35	MF	90	A2
36	MF	86	A2	36	MF	91	A2
37	MF	87	A2	37	MF	92	A2
38	MF	88	A2	38	MF	93	A2
39	MF	89	A2	39	MF	94	A2
40	D3	90	A1	40	D3	95	A1
41	D3	91	A1	41	D3	96	A1
42	D3	92	A1	42	D3	97	A1
43	D2	93	A1	43	D3	98	A1
44	D2	94	A1	44	D3	99	A1
45	D2	95	A1	45	D2	100	A1
46	D1	96	A1	46	D2		
47	D1	97	A1	47	D2		
48	D1	98	A1	48	D2		
49	D1	99	A1	49	D2		
		100	A1	50	D1		
				51	D1		
				52	D1		
				53	D1		
				54	D1		

### 4.5.3 Use of English translation dictionaries in examinations

If you are a student, whose first language is not English and you wish to use an English translation dictionary during exams, then you must apply, through the SLSL&T School Office, for a letter giving you permission to use a paper-based dictionary. You must take the letter to ALL examinations for checking, along with the dictionary, by the senior invigilator. **Electronic dictionaries are not allowed in exams.**

### 4.5.4. What can happen if you fail to pass modules?

Under normal circumstances you will have the opportunity to remediate a failed status within a module after a first sitting of the assessment, either by a second attempt at the examination in the resit diet, or submission of appropriate work or task if your module is continually assessed. Failure to pass a resit examination or reassessment task always has consequences for your Degree Programme. In the extreme event that you did not gain the prescribed minimum number of credits (80 credits per academic session for fulltime students), you would be subject to the Termination of Studies Regulations, in which case you will be informed of the procedures to be followed by letter, following publication of the results of the resit examinations.

- **Requirements for avoiding termination of studies:** if you are a full time student, you are required to acquire a minimum 80 credits for each academic year of attendance. If, by the end of the re-sit diet of exams, you have failed to acquire 80 credits for the year, you would be invited to submit an appeal, and your case would be considered by the college termination of studies committee, which would decide, following inspection of your academic record and consideration of any mitigating circumstances you present, whether to allow you to return or whether to require you to discontinue your studies. If the college requires you to discontinue your studies, you have the right to appeal to the equivalent senate committee.
- **Failing even one module**, although not necessarily leading to Termination of Studies, has an impact on your future because you have to gain enough credits for a Degree. A failed Module may have to be taken again the following year, possibly on an “extended DP”, which allows you to sit the examinations without attending classes. However, for students entering in 2006 and later, EDPs will be permitted to enable progression from Levels 1 to 2 ONLY. If you fail a level 2 or 3 module, you may be required to repeat the module in attendance.
- **If you fail more than 2 modules**, you may have to remain at the same level of study for another year and not be allowed to progress to the next level until you have gained the necessary credits
- If you are carrying a failed module(s) at the start of the new academic session you will have an appointment made to meet with the School Secretary and Head of Year to discuss the terms of your progression.

To summarise, failure to pass modules inevitably leads either to additional pressure at the next Level of Study, delayed progression to the next Level of Study (with consequent lengthening of the time and expense to achieve your degree) or even exclusion from your chosen programme of study. You should note also that fail grades appear on University Academic Transcripts which may be requested to support job applications.

## 4.6. Plagiarism and academic dishonesty

The University of Dundee's Code of Practice on Plagiarism and Academic Dishonesty may be viewed in full at <http://www.dundee.ac.uk/academic/plagiarism.htm>.

Plagiarism and other forms of academic dishonesty are particularly unpleasant forms of intellectual deceit. There are greater temptations for students to engage in these activities in assessed coursework, whether that be essays, computer programmes, laboratory or practical work or undergraduate and postgraduate dissertations and theses. Therefore prevention is particularly important and, where possible, plagiarism detection software is used. Also, teaching staff are experienced in identifying possible cases of academic dishonesty. The University regards academic dishonesty as an extremely serious offence of equal import to cheating in written examinations, and it is dealt with accordingly.

### 4.6.1. Examples of academic dishonesty include

- **Collusion** - the representation of a piece of unauthorised group work as the work of a single candidate.
- **Commissioning** - submitting an assignment done by another person as the student's own work.
- **Duplication** - the inclusion in coursework of material identical or substantially similar to material which has already been submitted for any other assessment within the University.
- **False declaration** - making a false declaration in order to receive special consideration by an Examination Board or to obtain extensions to deadlines or exemption from work.
- **Falsification of data** - presentation of data in laboratory reports, projects, etc based on work purported to have been carried out by the student, which have been invented, altered or copied by the student.
- **Plagiarism** - the unacknowledged use of another's work as if it were one's own. Examples are:
  - inclusion of more than a single phrase from another's work without the use of quotation marks and acknowledgement of source;
  - summarising another's work by changing a few words or altering the order of presentation without acknowledgement;
  - copying another's work;
  - use of another's ideas without acknowledgement or the presentation of work as if it were one's own which is substantially the ideas of another.

Further explanation and guidance on how to avoid infringing them can be found on the Advance@Dundee at: <http://www.dundee.ac.uk/advancedundee/D/d018p.htm>.

Particularly useful information on how (and how not) to paraphrase the work of others can be viewed at: [http://www.wisc.edu/writing/Handbook/QPA\\_paraphrase.html](http://www.wisc.edu/writing/Handbook/QPA_paraphrase.html).

#### 4.7. Academic standards and student representation

The University has a responsibility to assure the standards of its academic awards and the quality of teaching. All students are given an opportunity to give us their individual views of the modules by completing electronic module evaluation questionnaires via *my Dundee*. Any constructive comments you make about modules are fed back and used in course monitoring and contribute to the future development of modules. This is a feature of the University Academic Standards procedure and is fully supported by DUSA. The results of the questionnaires will also be available to you via the *My Dundee* module.

- **School President and student representation** – For information on student representation within the university, check out the URL below:  
[http://www.dusa.co.uk/content/431393/about\\_us/](http://www.dusa.co.uk/content/431393/about_us/)
- The elected School President for Life Sciences for session 2013/14 will be confirmed in September 2013. It is the job of the School President to work with class representatives and other students to ensure issues and comments are picked up and brought to the attention of the appropriate committees such as the School Board of Life Sciences Learning & Teaching or the DUSA Student Representative Council meetings.
- **Class representatives and staff student liaison** – At the beginning of Level 1 we will ask for eight volunteers to take the role of Student Reps; to act as a spokespeople for their year and represent their student colleagues at Staff/Student Liaison Meetings. This appointment may be extended to Level 2 upon the agreement between the individual reps and Head of Level 1&2.
- Help with University regulations, teaching and learning

#### SLSL&T office staff can help with

- Absence forms and medical certificates
- Applications for a discounted year, temporary withdrawal from studies or deferred year of study
- Applying to graduate with Cert HE, Dip HE, Ordinary and Honours degrees
- Permanent withdrawal from study and/or transfers to other Colleges and institutions
- Authorise official documents (Please note that a minimum of 48 HOURS notice is required in order to produce or authorise official documents so, please allow for this delay when you request such services)

#### Teaching support by SLSL&T office staff includes

- Processing submitted coursework and the return of marked paper-based coursework
- Recording your attendance and academic grades for module assessments
- Helping make appointments with teaching staff

#### 4.8. Campus services and facilities

<http://www.dundee.ac.uk/main/currstud.htm>

There are a variety of Services and Facilities which provide information, support and advice for students including how to use the services and facilities on offer as well as providing self-help and/or information leaflets. These are listed in the 'Student Handbook' and also available on the web. Some of the most useful web links are listed below.

- **Student Services:** <http://www.dundee.ac.uk/studentsservices/>
- **Student Advisory Service:** <http://www.dundee.ac.uk/adviceguidance/ourservice.html>
- **Counselling Service:** <http://www.dundee.ac.uk/counselling/students.htm>
- **Health Service:** <http://www.dundee.ac.uk/healthservice>
- **The Registry:** <http://www.somis.dundee.ac.uk/registry/>. The Registry is responsible for matriculation, examinations and graduation and maintains the Student Record. In addition, the Registry produces student ID cards and provides certification of student status for Council Tax purposes, funding bodies, etc.
- **University Chaplaincy:** <http://www.dundee.ac.uk/chaplaincy/>. Fiona Douglas (University Chaplain) has appointed David Robertson (Honorary Chaplain to the University and to Dundee FC) to work alongside her within the College of Life Sciences. Fiona and David have indicated that they wish to be considered as an additional resource for the College. They will not be coming around knocking on doors, but they will be available for any student or member of staff (of any faith or none) who wishes to discuss any ethical or moral dilemmas, the relationship between science and religion or indeed any issue that you may wish to raise with them. Please feel free to contact Fiona [f.c.douglas@dundee.ac.uk](mailto:f.c.douglas@dundee.ac.uk) or David [darobertson@blueyonder.co.uk](mailto:darobertson@blueyonder.co.uk).
- **Life Sciences Disability Officers:** <http://www.dundee.ac.uk/disabilityservices>

Disability Services is based in the Ewing Annexe on the main University campus and offers a range of confidential services dedicated to the support and empowerment of disabled students. All disabled students are advised to register with Disability Services as soon as possible in order for recommendations to be made for day to day teaching and examination support.

#### Disability Officers for Life Sciences

**Mrs Brenda Murphy:**

**Phone:** 01382 386438

**Email:** [b.m.murphy@dundee.ac.uk](mailto:b.m.murphy@dundee.ac.uk)

**Mrs Monica Lacey:**

**Phone:** 01382 384790

**Email:** [m.lacey@dundee.ac.uk](mailto:m.lacey@dundee.ac.uk)

- **Life Sciences Careers Officer Information** <http://www.dundee.ac.uk/careers>

The Careers Service is located at 166 Nethergate and you can just drop in to use the Information room which contains a wealth of literature regarding employment, further study, gap year, volunteering, funding and much more.

**What is Offered?** Help includes:

Work experience: Vacation/Semester  
Employment; Career Choice, Finding a Job;  
Application Form; CV;s; Graduate Selection Tests;  
Further Study; Changing Course; Funding;  
Interview Preparation; Mock Interviews

#### Careers Officers for Life Sciences

**Lynsay Pickering:**

**Email:** [l.pickering@dundee.ac.uk](mailto:l.pickering@dundee.ac.uk)

#### Opening Times

Monday – Friday  
(0900 to 1700 hrs)



- **Library Services** <http://www.dundee.ac.uk/library/>

Provides a wide variety of services including how to find books, journals and electronic resources and life sciences students can request the help of the specific Librarians

**Library Liaison Staff for Life Sciences**

**Margaret Adamson:**

**Phone:** 01382 384317

**Email:** [m.adamson@dundee.ac.uk](mailto:m.adamson@dundee.ac.uk)

**Rona Carstairs**

**Phone:** 01382 385552

**Email:** [r.m.carstairs@dundee.ac.uk](mailto:r.m.carstairs@dundee.ac.uk)

**Helen Olafsson**

**Phone:** 01382 385182

**Email:** [h.a.olafsson@dundee.ac.uk](mailto:h.a.olafsson@dundee.ac.uk)