UNIVERSITY OF LEICESTER

Module Specification

BS1030 The Molecules of Life - An Introduction to Biochemistry and Molecular Biology

Academic Year: 2019/0
Module Level: Year 1
Scheme: UG
Department: Biological Sciences
Credits: 30

Student Workload (hours)

Lectures	46
Seminars	
Practical Classes & Workshops	30
Tutorials	7
Fieldwork	
Project Supervision	
Guided Independent Study	217
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	300

Period: Semester 1
Occurence: E
Coordinator: Mark Leyland
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical report 1	7.5				
002	Practical report 2	7.5				
003	Report	15				
004	Online practical assessment	10				
005	Examination (final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Explain the basic chemical principles that underpin biochemistry
- Describe the structures of biological macromolecules and their components
- Explain the basic mechanisms of DNA replication, transcription and translation
- Discuss concepts of gene expression and control in prokaryotes and eukaryotes
- Discuss the relationship between protein structure and function
- Outline the key metabolic processes in cells and identify important mechanisms of metabolic regulation
- Demonstrate an ability to analyse experimental data
- Use and assess literature to produce written reports
- Reflect on and articulate motivations, strengths and experience of developing one or more transferable skills

Teaching and Learning Methods

Lectures, laboratory practical sessions, review sessions and group work, small group tutorials, revision sessions

Assessment Methods

Practical report, report, online practical assessment, examination.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation of laboratory reports, completion of pre-lab tests, reading practical books in preparation for laboratory classes, researching and evaluating scientific literature, preparation of formative talks/presentations for small-group tutorials, problem-solving in support of small group tutorials, guided reading to support module material.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS1040 The Cell - An Introduction to Cell Biology and Microbiology

Academic Year: 2019/0
Module Level: Year 1
Scheme: UG
Department: Biological Sciences
Credits: 30

Student Workload (hours)

Lectures	45
Seminars	
Practical Classes & Workshops	27
Tutorials	4
Fieldwork	
Project Supervision	
Guided Independent Study	224
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	300

Period: Semester 1
Occurence: E
Coordinator: Primrose Freestone
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical report	10				
002	Practical report	10				
003	Statistics	10				
004	Essay	10				
005	Examination (final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Discuss and explain the basic structure and function of cells and cellular organelles
- Demonstrate knowledge of membrane transport and cellular homeostasis.
- Discuss and explain some of the diversity of life on earth including some of the similarities and differences in structures and replication between viruses and other subcellular infectious agents, archaea, bacteria, unicellular and multicellular microbial eukaryotes.
- Describe how micro-organisms cause disease, are used in biotechnology and influence geochemical cycles.
- Discuss and explain the principles of systematics and classification, especially as they apply to micro-organisms.
- Demonstrate the use of techniques to study and handle cells and micro-organisms appropriately.
- Demonstrate competency in oral and written communication, numeracy, IT skills, problem solving, and group working.
- Demonstrate basic competency in the use of statistical tools to describe, present and analyse data.
- Demonstrate awareness of the importance of biology at single cell level in the context of economic, ecosystem and health sustainability issues.
- Use relevant sources to inform academic writing and demonstrate academic integrity in their submitted work through appropriate use of academic citation and referencing conventions.

Teaching and Learning Methods

Lectures, tutorials, practical classes, workshops, problem solving classes.

Assessment Methods

Practical coursework book, essay and exam.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Last Published: 12 November 2019

BS1040 The Cell - An Introduction to Cell Biology and Microbiology

Guided Independent Study: Indicative Activities

Reading recommended literature and text books, reviewing lectures, preparing the essay and other written work, revising for the exam. Online tutorials on avoiding plagiarism provided by the School of Biological Sciences and by the University.

UNIVERSITY OF LEICESTER

Module Specification

BS1050 From Individuals to Populations - An Introduction to Genetics

Academic Year: 2019/0
Module Level: Year 1
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	1
Practical Classes & Workshops	12
Tutorials	8
Fieldwork	
Project Supervision	
Guided Independent Study	107
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Ezio Rosato
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical report	30				
003	Examination (Final)	70		1		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Explain how chromosomes are inherited through mitosis and meiosis and how genetic variation is generated.
- Perform elementary genetic analyses.
- Perform elementary statistical analyses.
- Recognise genetic diseases and genetically influenced disorders and appropriate methods of screening.
- Explain genetic variation and methods to measure it.
- Explain what factors influence global patterns of genetic diversity.
- Describe basic elements of molecular evolution of genes and genomes.
- Define DNA sequencing technologies and their use in modern genetics.
- Identify simple bioinformatics tools.
- Demonstrate competent skills in data analysis and in the preparation and presentation of written work.

Teaching and Learning Methods

Lectures, seminars, laboratory practical classes, tutorials and problem solving classes, guided independent study.

Assessment Methods

Practical report and examination

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparing for and revising practical classes, preparing for and revising tutorials, preparing for and producing practical report, preparing for and revision of lectures, final exam preparation.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS1060 Multicellular Organisation - An Introduction to Physiology, Pharmacology and Neuroscience

Academic Year: 2019/0
Module Level: Year 1
Scheme: UG
Department: Biological Sciences
Credits: 30

Student Workload (hours)

Lectures	40
Seminars	
Practical Classes & Workshops	8
Tutorials	5
Fieldwork	
Project Supervision	
Guided Independent Study	247
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	300

Period: Semester 2
Occurence: E
Coordinator: Ildiko Gyory
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Online test 1	13				
002	Online test 2	13				
003	Report	14				
004	Examination (Final)	60		1.5		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe general aspects of the organisation, function and operating principles of the main physiological systems in the human body.
- Apply basic concepts of pharmacology to classes of cell surface receptors for neurotransmitter, hormones and local mediators.
- Describe the properties of cell surface receptors, their functions and relevant signalling pathways.
- Explain how individual physiological systems work together to achieve whole body homeostasis.
- Demonstrate understanding of human physiological measurements
- Handle, manipulate, display and statistically analyse physiological data.

Teaching and Learning Methods

Lectures, practical classes, group work-sessions and computer-based data handling session

Assessment Methods

Online test x2, report and examination.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

BS1060 Multicellular Organisation - An Introduction to Physiology, Pharmacology and Neuroscience

Guided Independent Study: Indicative Activities

•Read a variety of relevant source material including textbooks and scientific articles. Specific reading tasks will be posted during the lectures and on Blackboard.
•Prepare report including data handling.
•Revise module content guided by lecture material and module workbook as well as external sources.
•Prepare and revise material covered in group work sessions (listed as tutorials).
•Prepare for practical sessions assisted by practical handbooks.
•Complete formative online tests to check understanding of material and prepare for summative online tests and exams.

UNIVERSITY OF LEICESTER

Module Specification

BS1070 Biodiversity and Behaviour - An Introduction to Zoology

Academic Year: 2019/0
Module Level: Year 1
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	18
Tutorials	4
Fieldwork	3
Project Supervision	
Guided Independent Study	107
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Sinead Drea
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical Report	30				
002	Examination (Final)	70		1		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe and discuss:
•Phylogeny and the tree of life
•Basic animal and plant development
•Animal and plant origins and diversity
•Biodiversity/ecology and its importance
•Animal behavioral adaptations
•Plant physiological features and consequences for environment and food production
- Conduct laboratory work proficiently and safely
- Work as part of a team
- Use appropriate statistical analysis software to analyse own data obtained in the practical sessions

Teaching and Learning Methods

Lectures, laboratory practical classes, computer practicals/workshops and data handling. Basic fieldwork, private study.

Assessment Methods

Practical report and examination.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Working through R statistics using swirl; Directed external reading; Write up of individual practicals.

Last Published: 12 November 2019

Module Specification

BS2000 Research Topic

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	10
Seminars	
Practical Classes & Workshops	
Tutorials	20
Fieldwork	
Project Supervision	
Guided Independent Study	120
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Nicola Suter-Giorgini
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Team Research Proposal	70				
002	Coursework Assessment	30				
003	Project Preparation Course	0	1			

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Demonstrate the ability to work effectively as part of a team.
- Plan and develop a specific research question.
- Search for information effectively using online databases.
- Demonstrate an understanding of the ethical implications and associate legal requirements of different types of biological research.
- Critically evaluate research literature.
- Interpret and present experimental data in writing.

Teaching and Learning Methods

Lectures, flipped classroom sessions on bioethics, small group team tutorial sessions.

Assessment Methods

Team Research Proposal and coursework assessment. Attendance only Project Preparation Course.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Individual and team research into a defined scientific topic. Preparation and writing of a team research proposal. Preparation for an individual piece of coursework assessment.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS2009 Genomes

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	2
Practical Classes & Workshops	24
Tutorials	6
Fieldwork	
Project Supervision	
Guided Independent Study	96
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Celia May
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Experimental Analysis	30				
002	Bioinformatic Analysis	10				
003	Exam (final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe how prokaryotic and eukaryotic genomes are organised and discuss the mechanisms operating to influence this organisation.
- Describe the basic processes of DNA replication, recombination and repair.
- Analyse experimental data and experimental design.
- Perform simple bioinformatic analyses.

Teaching and Learning Methods

Lectures. Practical classes. Tutorials and discussion groups. Clinics.

Assessment Methods

Experimental analysis, Bioinformatic analysis and Exam (final).

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for lectures and reviewing lecture presentations. Reading based on lecture topics. Preparation for tutorials and review of tutorials. Analysing experimental data and considering experimental design. Exam preparation.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS2013 Physiology and Pharmacology

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	7
Tutorials	3
Fieldwork	
Project Supervision	
Guided Independent Study	118
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Martyn Mahaut-Smith
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Essay under exam conditions	20				
002	Practical Report	20				
003	Examination (Final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe the basic structure of the various classes of cell surface receptors, explain the intracellular signalling pathways regulated by such receptors, provide examples of receptors that possess multiple subtypes for a given hormone or neurotransmitter (agonist).
- Undertake a quantitative analysis of drug-receptor interactions and interpret the Information; describe how drugs can modify agonist-receptor interactions and be able to quantify these effects.
- Discuss the mechanisms by which drugs can modify the function of the cardiovascular system to treat disease states such as hypertension.
- Work effectively within a group to perform experiments and measurements that address the sites and mechanisms of drug action.
- Handle, graph, manipulate, tabulate and analyse pharmacological data derived from experiments.
- Demonstrate a range of transferable skills including written communication, information technology, numeracy, team working, problem solving, examination technique, information handling.

Teaching and Learning Methods

Lectures, tutorials and laboratory practical classes

Assessment Methods

Essay under exam conditions, practical report and examination (final).

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for laboratory practical class. Completion of worksheets for tutorials. Practical report preparatory work and report generation. Looking through lecture material before and after lectures, reviewing lecture recordings. Additional reading around subject areas and revision for examination.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS2014 Exercise Physiology and Pharmacology

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	21
Seminars	
Practical Classes & Workshops	6
Tutorials	2
Fieldwork	
Project Supervision	
Guided Independent Study	121
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: John Mitcheson
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical Report and supporting work	30				
002	Examination (Final)	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Explain the structure and function of the neuromuscular junction.
- Explain the different elements of the musculoskeletal system and skeletal muscle contraction.
- Integrate and explain the control mechanisms responsible for regulating the musculoskeletal, cardiovascular and respiratory systems through a consideration of the acute and chronic effects of, for example, aerobic exercise at the metabolic, cellular and systems levels.
- Describe the limitations to exercise and selected relationships between exercise, health and disease.
- Explain the use and abuse of drugs in performance sport, including cellular and systems effects.
- Demonstrate the ability to handle, manipulate, display and statistically analyse physiological data.
- Use a range of transferable skills including written communication, information technology, numeracy, team working, problem solving, examination technique, information handling.

Teaching and Learning Methods

Lectures, tutorials with problem-solving worksheets, laboratory practical class, work session, directed reading, study support session(s).

Assessment Methods

Practical report and supporting work, and examination.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

BS2066 and BS2077

Guided Independent Study: Indicative Activities

Preparation for laboratory practical class. Completion of worksheets for tutorials. Practical report preparatory work and report generation. Looking through lecture material before and after lectures, reviewing lecture recordings. Additional reading around subject areas and revision for examination.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS2015 Physiology of Excitable Cells

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	5
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	123
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Martine Hamann
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Data handling question	20		0.83		
002	Data handling question	20		0.83		
003	Examination (Final)	60		1.5		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe and analyse the properties of ion channels and how they contribute to the resting membrane potential and the propagation of the action potential.
- Describe and analyse the basic mechanism by which neurons communicate, e.g. synaptic transmission and electrical coupling.
- Explain the basic molecular mechanisms underlying chemical transmission in the nervous system.
- Describe and analyse some key features of the mammalian nervous system, including cell types; sensory, autonomic, and motor divisions; and some of the anatomical pathways.
- Describe how synaptic information is integrated and the basis of synaptic plasticity. Provide a quantitative analysis of synaptic plasticity.
- Describe sensory integration during perception and analyse the properties of sensory integration.
- Use a range of transferable skills including written communication, information technology, numeracy, problem solving, examination technique, information handling.

Teaching and Learning Methods

Lectures, work sessions with computerised exercises, directed reading.

Assessment Methods

Formative assessment (paper based exercises), computer based summative assessment, computer based examination.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Completion of worksheets. Data handling questions, Looking through lecture material before and after lectures, reviewing lecture recordings. Additional reading around subject areas and revision for examination.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS2026 Genes, Development and Inheritance

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	
Seminars	
Practical Classes & Workshops	
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	

Period: Semester 2
Occurence: E
Coordinator: Frederick Tata
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
005	Experimental analysis	20				
006	Essay (1500 words)	20				
007	Examination (Final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Explain the use of genetics to dissect gene regulation + function during development.- Describe how genetics is used to study human disease.- Analyse human pedigrees to determine inheritance patterns of genes.- Relate disruptions in the genome to expression of diseases and mutant phenotypes.
- Explain the use of population genetic analysis.
- Critically analyse experimental data.- Demonstrate competency in accessing information, organising references and writing and producing an essay.

Teaching and Learning Methods

Lectures and directed reading. Experimental practicals and analyses. Problem-solving tutorials.

Assessment Methods

Experimental analysis, essay (1500 words) and exam.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for lectures and reviewing lecture presentations. Reading based on lecture topics. Preparation for problem-solving tutorials and follow-up of provided solutions. Researching and writing the essay. Exam preparation.

UNIVERSITY OF LEICESTER

Module Specification

BS2030 Principles of Microbiology

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	2
Practical Classes & Workshops	20
Tutorials	2
Fieldwork	
Project Supervision	
Guided Independent Study	104
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Hasan Yesilkaya
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical Report	35				
002	Exam (final)	65		1.5		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Explain basic techniques for isolation, handling and identification of microbes, and demonstrate an ability to apply microbiology techniques in the laboratory.
- Demonstrate an awareness of microbial diversity and microbial cell structure.
- Evaluate ways in which genetic techniques can be applied to the study of bacteria and applications of these techniques in biotechnology.
- Describe the features of specific microorganisms that are important in infections disease and bioindustry.
- Communicate in writing an awareness of the concepts of microbiology, including the microbiology in health and environmental sustainability.

Teaching and Learning Methods

Lectures, seminar presentation, laboratory practicals; optional field trip (as offered to all 2nd year Microbiology BSc students).

Assessment Methods

Practical report and exam (final).

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Guided reading (text books and research journal articles), reviewing lectures, preparing written work.

UNIVERSITY OF LEICESTER

Module Specification

BS2032 Immunology and Eukaryotic Microbiology

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	18
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	110
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Andrea Cooper
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
002	Workbook	40				
004	Examination	60		1.5		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe the major features of eukaryotic microbiology and immunology.
- Perform microbiological and immunological procedures.
- Present and interpret laboratory results.
- Demonstrate competence in acquiring information from the scientific literature and use of basic bioinformatics tools.
- Be able to work effectively in small groups.
- Demonstrate effective time management.
- Demonstrate awareness of health sustainability.

Teaching and Learning Methods

Lectures
Laboratory practical classes
Optional field trip

Assessment Methods

- workbook: 40%
- Exam (1.5 hours): 60%

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Reading a wide range of literature relevant to the content of the module, including current news, textbooks and scientific articles. Reviewing lectures, revising for assessment.

Module Specification

BS2040 Bioinformatics

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	10
Tutorials	10
Fieldwork	
Project Supervision	
Guided Independent Study	108
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Richard Badge
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Computer practical report	20				
002	Bioinformatic analysis	20				
004	Examination	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Use computer systems to access bioinformatic databases.
- Explain the use of computers in analysing genomic data.
- Describe how protein structures are determined and modelled.
- Compare DNA and protein sequences to analyse gene structure and function.
- Demonstrate competency in accessing information, organising references and writing and producing practical reports.

Teaching and Learning Methods

Lectures and directed reading.
Computer-based practical exercise and analyses.
Problem-solving tutorials.

Assessment Methods

- Computer practical report: 20%
- Bioinformatic analysis: 20%
- Exam (2 hours): 60%

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

BS2040 Bioinformatics

Guided Independent Study: Indicative Activities

Preparation for lectures, including background reading.
Reviewing and annotating lecture notes and lecture capture resources.
Additional reading based on lecture topics.
Preparation (directed reading on topics) for problem-solving tutorials.
Review and follow-up of published Tutorial problem solutions.
Preparation for computer practical, execution of practice computational analyses.
Researching background to practical exercise, placing the results of analyses in the context of wider data sources / the literature.
Writing up the practical reports.
Exam preparation.

UNIVERSITY OF LEICESTER

Module Specification

BS2066 Behavioural Neurobiology

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	21
Seminars	
Practical Classes & Workshops	10
Tutorials	5
Fieldwork	
Project Supervision	
Guided Independent Study	114
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Tom Matheson
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical Report 1	30				
002	Examination (final)	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Explain and critically discuss the main topics with reference to appropriate source material, including primary research papers.
- Plan and carry out experiment investigating different aspects of animal behaviour.
- Discuss the results of experiments in the context of the related research literature.
- Use a computer modelling environment to design and carry out tests of neural network function.
- Analyse the patterns of connectivity in a model neural network to explain its functional organisation.

Teaching and Learning Methods

- Traditional lectures, supported by Panopto lecture recordings.
- One laboratory (experimental) practical class and one computer practical class. The practical classes integrate experimental work with training in generic data analysis skills using student data as an example.
- Online learning environment (Blackboard) that supports guided independent study and practical classes.
- Online tests for student self-assessment (formative).
- An independently researched essay written under exam conditions (formative).
- Tutorials, including a feedback tutorial that focuses specifically on essay preparation and writing skills, and follow-up tutorials for the practical classes.
- Group learning through group work (in the practical classes), and through peer feedback (on mock-exam essay).
- Guided independent study.

Assessment Methods

- Practical Report: 30%
- Exam (2 hours): 70%

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

BS2077
BS2014

Last Published: 12 November 2019

BS2066 Behavioural Neurobiology

Guided Independent Study: Indicative Activities

- Reading textbooks and primary research papers from the reading list and found independently to support the framework set out in the lectures.
- Preparing for practicals by reading the instructions in the Module Handbook and the relevant research papers
- Following up practicals by formulating and expressing relevant scientific hypotheses, performing independent analyses and writing them up.
- Preparing for the mock exam essay by researching for and reading relevant literature, and preparing essay outlines.
- Preparing for tutorials by reading relevant material in advance and preparing for group discussions.
- Developing knowledge and preparing for the exam by: revising lecture notes, Panopto recordings, online learning resources, feedback materials (from tutorials, the mock exam essay, and practical reports), and material from the reading list as well as independently found sources.

UNIVERSITY OF LEICESTER

Module Specification

BS2077 Neurobiology and Animal Behaviour

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	21
Seminars	
Practical Classes & Workshops	10
Tutorials	5
Fieldwork	
Project Supervision	
Guided Independent Study	114
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Swidbert Ott
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical Report	30				
003	Examination	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Explain and critically discuss with reference to appropriate source material, including primary research papers.
- Plan and carry out experiments investigating different aspects of animal behaviour.
- Formulate hypotheses and test them using appropriately chosen and interpreted statistical techniques.

Teaching and Learning Methods

- Traditional lectures, supported by Panopto lecture recordings
- One laboratory (experimental) practical class and one computer practical class. The practical classes integrate experimental work and training in generic data analysis skills using the student practical data as an example.
- Online learning environment that supports guided independent study and front-loads practical classes.
- Online tests for student self-assessment.
- An independently researched essay written under exam conditions.
- Tutorials, including a “feedback tutorial” that focusses specifically on essay preparation and writing skills and follow-up tutorials for the practical classes.
- Group learning through group work (in the practical classes), and through peer assessment and feedback (on the mock-exam essay)
- Guided independent study

Assessment Methods

- Practical Report: 30%
- Exam (2 hours): 70%

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

BS2066
BS2014

Last Published: 12 November 2019

BS2077 Neurobiology and Animal Behaviour

Guided Independent Study: Indicative Activities

- Reading textbooks and primary research papers from the reading list and beyond to support the framework set out in the lectures.
- Preparing for practicals and tutorials by working through the matieral in the Module Handbook, online learning environment and relevant research paper.
- Following up practicals by independently performing, interpreting and presenting graphical and statistical analyses of the data.
- Preparing for the exam by revising lecture notes, Panopto recordings, online learning resources and the feedback given in tutorials and practical reports.

UNIVERSITY OF LEICESTER

Module Specification

BS2091 Biochemistry of Nucleic Acids

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	23
Seminars	
Practical Classes & Workshops	16
Tutorials	1
Fieldwork	
Project Supervision	
Guided Independent Study	110
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Olga Makarova
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Scientific Summary Task (1,000 words)	25				
002	Summary of Practical (data analysis)	10				
003	Computer Practical (molecular interactions)	5				
004	Examination (final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe how information encoded in DNA is transcribed into RNA and how primary transcripts are processed to achieve their final, functional form.
- Demonstrate the principles of the genetic code and translation of genetic information from messenger RNA into protein.
- Cary out and interpret simple experiments illustrating aspects of the above.
- Explain the principles underpinning the regulation of gene expression in prokaryotes and eukaryotes.
- Describe molecular mechanisms of DNA manipulation by specified enzyme(s).
- Develop transferable skills in writing and data analysis.

Teaching and Learning Methods

Lectures, practicals and small discussion groups (tutorials)

Assessment Methods

- Exam: 60% (2 hours)
- Computer practical: 5%
- Summary of Practical: 10%
- Scientific Summary Task: 25%

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Guided reading, recommended audiovisual materials.
Lectures made available for review using Reflect.
Preparation for tutorials.
Research for long-format writing task.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS2092 Molecular Cell Biology

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	
Seminars	
Practical Classes & Workshops	
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	

Period: Semester 1
Occurence: E
Coordinator: Sue Shackleton
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
002	Practical Report	30				
003	Examination (Final)	70		2		

Intended Learning Outcomes

On successful completion of the module, students shoule be able to:
- Describe the principles and outline the steps involved in common cell biology techniques.
- Explain how membrane and secreted proteins are post-translationally processed and targeted to different subcellular and extracellular locations.
- Explain how signalling pathways integrate extracellular signals to allow the regulation of complex cellular processes such as metabolism and cell proliferation.
- Explain the respective roles of microtubules, actin and intermediate filaments in the maintenance of cell architecture and function.
- Describe the processes involved in mitotic cell division and eukaryotic cell cycle control.
- Develop a strategy to address a specific scientific hypothesis and be ale to critically analyse the results of such experiments.

Teaching and Learning Methods

Lectures
Practicals
Tutorials

Assessment Methods

- Practical Report: 30%
- Exam: 70% (2 hours)

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

BS2092 Molecular Cell Biology

Guided Independent Study: Indicative Activities

Readig of course matieral and watching videos ahead of lectures and flipped classroom sessions.
Recapping lecture material via Reflect.
Consolidation and extending understanding through reading of recommended cell biology text books.
Preparation of answers to tutorial questions.
Analysis of data and writing of practical report.
Completion of on-line formative quizzes to test knowledge of amino acids properties and of general course material.
Revision for end of module exam.

UNIVERSITY OF LEICESTER

Module Specification

BS2093 Protein Control in Cellular Regulation

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	23
Seminars	
Practical Classes & Workshops	9
Tutorials	6
Fieldwork	
Project Supervision	
Guided Independent Study	112
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Mark Leyland
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Computer Modelling Practical	10				
002	Presentation	20				
003	Examination (Final)	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Discuss the properties of enzymes and describe the different ways protein activity is regulated.
- Discuss the molecular properties of proteins involved in energy transduction.
- Explain the integration and regulation of metabolism.
- Demonstrate the ability to analyse the molecular features of proteins.
- Analyse experimental data to solve problems.

Teaching and Learning Methods

Lectures, interactive tutorials, laboratory practicals, computer-based sessions, revision sessions.

Assessment Methods

- Computer modelling practical: 10%
- Presentation: 20%
- Exam: 70% - 2 hours

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Guided reading on key aspects of the module, preparation for laboratory practicals, analysis of data generated from laboratory practical, problem-solving in interactive tutorials, completion of online tests for formative assessment, reading of scientific literature to develop presentations, prearation of slides for presentations.

UNIVERSITY OF LEICESTER

Module Specification

BS3000 Evolutionary Genetics

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	4
Practical Classes & Workshops	8
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	116
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Ed Hollox
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
002	Poster sypnosis and critical review (2500)	40				
003	Examination (Final)	60		2		

Period: Semester 1
Occurence: E1
Coordinator: Ed Hollox
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
002	Poster sypnosis and critical review (2500)	40				
003	Examination (Final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Demonstrate an understanding of the process of mutation, drift and the molecular clock in phylogenetics and evolutionary genetic analysis.
- Discuss the methods used for inferring natural selection from molecular and experimental data.
- Discuss the role of gene duplication in evolution.
- Critically evaluate the various evolutionary pressures that gave rise to modern humans.
- Explain the in the genetic basis of body plan evolution.
- Critically evaluate research publications.
- Relate experimental evidence to its interpretation.

Teaching and Learning Methods

Lectures and molecular evolution practical seminars. Students will be asked to attend all the Genetics department seminars. Preparing review/poster, presenting poster and feedback.

Assessment Methods

Poster synopsis and critical review (2500)
Examination (Final)

Pre-Requisites

-

Co-Requisites

-

Last Published: 12 November 2019

BS3000 Evolutionary Genetics

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparing for lectures and reviewing lecture presentations and practical seminars. Preparation for preliminary poster synopsis critical review. Reading background literature. Researching and writing the review

UNIVERSITY OF LEICESTER

Module Specification

BS3003 Cancer Cell and Molecular Biology

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	
Tutorials	2
Fieldwork	
Project Supervision	
Guided Independent Study	125
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Salvador Macip
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Infographic Design	30				
002	Online multiple choice question test	30				
003	Essay (3000 words)	40				

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe the main features which distinguish malignant cells from normal cells, the mechanisms which regulate their proliferation and survival, and how this information can be used to design new therapies
- Integrate information from diverse sources to understand the origins of cancer and the processes involved on the progression into a full malignancy.
- Conduct a literature research project and write a critical appraisal of the subject, summarising the most important facts.

Teaching and Learning Methods

Lectures, tutorials, directed reading, independent research.

Assessment Methods

Exam (final)
Essay (3000 words)

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Each topic has a list of essential papers which guides the students to extra reading. Preparation for tutorials is based on a list of questions that the students have to research and answer ahead of the session, thus guiding them through the acquisition of basic knowledge to reinforce what is taught in lectures. Information on how to write an essay is given to students in documents and in tutorial discussions, in order to guide them through the acquisition of the skills needed to complete the appropriate ILOs.

UNIVERSITY OF LEICESTER

Module Specification

BS3010 Gene Expression: Molecular Basis and Medical Relevance

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	25
Seminars	4
Practical Classes & Workshops	
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	118
Demonstration	
Supervised time in studio/workshop	3
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Ian Eperon
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Examination (Final)	70		2.25		
002	Debate content and Performance	30				

Period: Semester 1
Occurence: E1
Coordinator: Ian Eperon
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Examination (Final)	70		2.25		
002	Debate content and Performance	30				

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Acquire a thorough knowledge of the molecular mechanisms of gene expression and its control, in mammals, to enable them to pursue independent study in this area.
- Describe how gene expression can be perturbed and cause disease.
- Explain the role of creative thought and rigorous tests of hypotheses in science.
- Appraise published work and become independent thinkers in the planning and interpretation of experimental approaches to discovering how gene activity is controlled.
- Develop skills in assimilation and appraisal of data, reasoning and communication that will prepare them for more general employment.

Teaching and Learning Methods

Lectures, discussing prepared answers, computer class, extensive guided reading

Assessment Methods

Examination (final)
Debate content and performance

Pre-Requisites

BS2091

Co-Requisites

-

Excluded Combinations

-

Last Published: 12 November 2019

BS3010 Gene Expression: Molecular Basis and Medical Relevance

Guided Independent Study: Indicative Activities

Preparation for debates will require group organisation and planning, independent reading of research papers, and preparation of Powerpoint presentations illustrating published data and other key points in support of the case they are making in the debate (and illustrations of weaknesses in the data being presented by their opponents).

UNIVERSITY OF LEICESTER

Module Specification

BS3011 Microbial Pathogenesis and Genomics

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	6
Practical Classes & Workshops	
Tutorials	6
Fieldwork	
Project Supervision	
Guided Independent Study	116
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Julie Morrissey
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Data Analysis under exam conditions	30				
002	Report on design of experimental strategy to analyse a virulence factor (Final)	50				
003	Bioinformatics analysis of gene sequences	20				

Assessment Methods

Data analysis under exam conditions.
Written reports of experimental design and analysis.

Pre-Requisites

BS2009 OR
BS2030

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Reading research literature, reviewing lectures, reviewing and understanding lecture material, analysing data and information for tutorials and seminars, preparing coursework.

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Present in detail and explain the genetic mechanisms underlying selected processes in bacteria.
- Demonstrate knowledge of the molecular and genetic basis of strategies employed by microorganisms to invade host tissue, avoid host defence mechanisms and proliferate at sites of infection.
- analyse and interpret data and information from primary literature sources, and organise and communicate it in writing. demonstrate, in writing, a capacity for critical analysis of a specialised or topical issue in microbiology.
- Design a research activity to determine the contributions of a virulence factor or other mechanism to an infectious disease. Demonstrate use of bioinformatics tools to analyse and understand microbial virulence traits.

Teaching and Learning Methods

Lectures, tutorials, problem solving classes, formative assessment, attending Departmental and College external seminars to enhance understanding of the impact of scientific research and to increase scientific knowledge related to the module.

UNIVERSITY OF LEICESTER

Module Specification

BS3013 Human and Environmental Microbiomics

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	20
Seminars	2
Practical Classes & Workshops	
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	128
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Martha Clokie
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
002	Seminar	30				
003	Examination (Final)	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Discuss how microbes play essential roles in planetary and human health and sustainability.
- Discuss how our understanding of microbiology has been transformed over the last decade by advances in sequencing technology, which has facilitated a deep understanding in microbial diversity and evolution and physiology both from whole genome and metagenome approaches.
- Identify the key roles played by microbes in human health and in the wider environment including aquatic and terrestrial environments.
- Demonstrate in the context of the above areas of environmental microbiology, experience of accessing information from the scientific literature in electronic and written form, and its organisation through oral presentation.

Teaching and Learning Methods

Lectures, seminars

Assessment Methods

Seminar
Exam (final)

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Guided reading (research journal articles), reviewing lectures, preparing written work, revising for exam.

UNIVERSITY OF LEICESTER

Module Specification

BS3015 Molecular and Cellular Immunology

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	23
Seminars	
Practical Classes & Workshops	
Tutorials	7
Fieldwork	
Project Supervision	
Guided Independent Study	120
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Cordula Stover
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Data handling [Final]	50		2		
002	Scientific panel discussions	50				

Period: Semester 1
Occurence: E1
Coordinator: Cordula Stover
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Data handling [Final]	50		2		
002	Scientific panel discussions	50				

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Demonstrate a detailed knowledge of the mammalian immune system, including specific and non-specific immune responses.
- Explain the molecular and cellular approaches used to investigate mechanisms of immunity.
- Demonstrate a capacity for critical analysis of a specialised or topical issue in immunology.

Teaching and Learning Methods

For blocks of lectures, rotating groups of students will be chosen to answer questions at the beginning of the next session pertaining to the previous session.
Frontloading of lectures with OER available on blackboard with signposting in the lectures.
Peer review and feedback in tutorials.

Assessment Methods

Data handling paper (final). Research papers will be provided by contributors and related to a module ILO topic. Task: present selected experiment in the context of the area (attendance of lectures necessary) and analyse results (individually).

Scientific panel discussion
This will take the format of a news panel interview. Students in groups of three will present a group project on an immunological topic. Students will be introduced to the assessment format using tutorial sessions.
Task: students will take on 1 of 3 roles: 1. The Scientist (presents immunology proposal), 2. The Public member (questions relevance to health), 3. The Research Council Funder (evaluates relevance of case presented to the public by the scientist).
All 3 immunology project sessions will be double marked. Also, the Scientific interview will be peer assessed (worth 10% of the interview mark). With permission from participant groups, sessions will be Panopto recorded.

UNIVERSITY OF LEICESTER

Module Specification

BS3015 Molecular and Cellular Immunology

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Reading a wide range of literature relevant to the overall content of the module. Practice for assessment: data handling (reading and analysing example papers) and practice for the scientific interview.

UNIVERSITY OF LEICESTER

Module Specification

BS3016 Neuroscience Futures

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	10
Seminars	7
Practical Classes & Workshops	
Tutorials	7
Fieldwork	
Project Supervision	
Guided Independent Study	126
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Vincenzo Marra
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Essay (1500 words)	30				
002	Journal Club Presentation	10				
003	Journal Club Evaluation tests	20				
004	Examination (Final)	40		1.5		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Interrogate the primary neuroscience literature in areas of current research led by relevant academic staff and to develop critical faculties.
- Using specific examples, describe and explain recent advances in neuroscience with special reference to new and developing methodologies.
- Read, analyse, and interpret data from the neuroscience literature.
- Communicate complex ideas and research findings using a variety of appropriate media.
- Integrate relevant information and design future research in the context of an appropriate neuroscience field.

Teaching and Learning Methods

Lectures and Research Seminars with Journal Clubs in which there will be oral discussion with questions and answers (as in tutorials) alongside online evaluation; students will have directed reading and study support sessions.

Assessment Methods

Essay (1500 words)
Journal Club Presentation
Journal Club Evaluation tests
Examination (final)

Pre-Requisites

BS2015: Neuroscience
BS2066: Behavioural Neurobiology

Co-Requisites

-

Excluded Combinations

-

BS3016 Neuroscience Futures

Guided Independent Study: Indicative Activities

All students will have to read the research papers and prepare for each Journal Club and do online tests and evaluations. Research their essay which will be in the form of a Grant application, work in small group sessions with other students to prepare for presentation of a Journal Club. Look through lecture and seminar materials before and after each session. Conduct additional reading around subject areas, especially in preparation for their essay and the examination. Review lecture recordings.

UNIVERSITY OF LEICESTER

Module Specification

BS3018 Genes and Development

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	6
Practical Classes & Workshops	
Tutorials	6
Fieldwork	
Project Supervision	
Guided Independent Study	116
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Frederick Tata
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Presentation	12				
002	Critical review (3000 words)	28				
003	Exam (Final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to::
Describe the molecular mechanisms that link genes to development in the examples studied.
Relate the experimental evidence to its interpretation.
Explain methods used to study gene function in model organisms.
Critically assess research publications and present interpretations in written, visual and oral formats.

Teaching and Learning Methods

Lectures and directed reading. Independent research of a specified topic. Presentation and receiving feedback. Presentation clinic and exam clinic. Attendance at professional research seminars.

Assessment Methods

Poster presentation,Critical review, Exam (Final)

Pre-Requisites

BS2026

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for lectures and reviewing lecture presentations. Reading based on lecture topics. Understanding the allocated research paper and designing the presentation. Formulating, researching and writing the review. Exam preparation.

UNIVERSITY OF LEICESTER

Module Specification

BS3019 Plant Identification Skills

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	10
Seminars	
Practical Classes & Workshops	23
Tutorials	3
Fieldwork	
Project Supervision	
Guided Independent Study	114
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Richard Gornall
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Identification exercise	20				
003	Practical examination [Final]	80		3		

Period: Semester 1
Occurence: E1
Coordinator: Richard Gornall
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Identification exercise	20				
003	Practical examination [Final]	80		3		

Intended Learning Outcomes

On successful completion of the module, students should be able to:

1) Demonstrate an understanding of the major plant groups and their evolutionary relationships;
2) Know how to use the different types of identification key and understand the relative merits of each;
3) Explain the morphology of various types of flower and other features relevant to family identification and be able to describe them using appropriate botanical terminology;
4) identify reliably any land plant to the level of class;
5) identify reliably at least 36 of the commoner flowering plant families found wild in the British Isles.

Teaching and Learning Methods

Through a combination of laboratory classes and lectures, students will be taught how to identify a range of common plant families, recognised in the context of our current understanding of their evolutionary relationships.

Assessment Methods

Identification exercise
Practical examination (final)

Pre-Requisites

-

Co-Requisites

-

Last Published: 12 November 2019

BS3019 Plant Identification Skills

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Practice identifying plants and their families using available field guides and keys, and then again without these aids.
Annotate laboratory books with drawings and notes on diagnostic features relevant to family identification.
Use the data from the lab books to compile and construct an identification key to plant families.

UNIVERSITY OF LEICESTER

Module Specification

BS3031 Human Genetics

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	1
Practical Classes & Workshops	
Tutorials	9
Fieldwork	
Project Supervision	
Guided Independent Study	118
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Nicola Royle
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Essay (3000 words)	30				
002	Problem based assessment	10				
003	Examination (final)	60		2		

Period: Semester 1
Occurence: E1
Coordinator: Nicola Royle
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Essay (3000 words)	30				
002	Problem based assessment	10				
003	Examination (final)	60		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Discuss the variety and complexity of the relationships between mutations in or near genes and the manifestation of disease phenotypes.
- Discuss the many ways that research in human genetics can be used.
- Solve problems in genetics and interpret the outcome.
- Critically assess a range of research papers in the field of human genetics to extract essential information.
- Conduct an independent literature search on a topic in human genetics and construct a coherent written overview.

Teaching and Learning Methods

Lectures and seminar. Problem-solving tutorials. Help clinics. Directed learning and self-directed learning

Assessment Methods

Essay (3000 words)
Problem based assessment
Examination (Final)

Pre-Requisites

-

Co-Requisites

-

Last Published: 12 November 2019

BS3031 Human Genetics

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for lectures and follow-up.
Preparation for problem solving tutorial and follow-up.
Research topic for assessed essay and essay preparation.
Exam preparation

UNIVERSITY OF LEICESTER

Module Specification

BS3033 Physiology, Pharmacology and Behaviour

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	23
Seminars	3
Practical Classes & Workshops	10
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	114
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Frank Proudlock
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Group Presentation	20				
002	Essay (2000 words)	20				
003	Examination (Final)	60		2.25		

Period: Semester 2
Occurence: E1
Coordinator: Frank Proudlock
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Group Presentation	20				
002	Essay (2000 words)	20				
003	Examination (Final)	60		2.25		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Interpret the hierarchical and parallel processing of visual information by the brain and be able to relate this to the process of image extraction.
- Correlate the roles of the different brain structures involved in voluntary movement and be able to reconstruct, in overview, their interactions during movement generation.
- Evaluate the role of a variety of brain mechanisms in generating feeding behaviour and pursuit of other rewards.
- Describe some of the different approaches to investigating CNS function and compare their relative advantages and disadvantages.
-Relate the role of integration within the CNS with particular reference to sensori-motor integration, higher functions such as learning, memory and attention and to higher disorders of the CNS such as schizophrenia.
- Work individually and in groups, be able to discuss orally, or present in writing a critical analysis of a theory of some aspects of brain function based on the use of recent research reports.

Teaching and Learning Methods

Lectures; critical analysis with peers of mainstream science documentary; practical classes, discussion, and preparation; directed reading

Assessment Methods

Group presentation
Essay (2000 words)
Examination (final)

Last Published: 12 November 2019

Module Specification

BS3033 Physiology, Pharmacology and Behaviour

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for practical classes including worksheets and associated reading; research and preparation for group presentation including meeting with colleagues, watching documentary to be critiqued, performing background reading, practicing presentation; production of assessed essay and reading and research to support the topic; additional reading around subject areas covered by lectures and revision for examination.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS3054 Molecular & Cellular Pharmacology

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	6
Tutorials	2
Fieldwork	
Project Supervision	
Guided Independent Study	120
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: John Challiss
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Quantiative pharmacology workbook	30				
002	Examination (Final)	70		2		

Period: Semester 1
Occurence: E1
Coordinator: John Challiss
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Quantiative pharmacology workbook	30				
002	Examination (Final)	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Explain how receptors can be regulated by diverse ligands (agonists, antagonists, inverse agonists, allosteric modulators).
- Describe the structures and functions of the major classes of receptor and the key components of their signal transduction and regulatory cascades.
- Describe the different mechanisms of receptor signal transduction and desensitization and their physiological and pharmacological significance.
- Describe, both in general terms and through the use of real examples, how the pharmacological manipulation of different classes of protein (receptors, enzymes) can have specific therapeutic benefits.
- Explain how acute cell signalling events relate to longer-term changes in cell phenotype and cell fate.
- Apply pharmacological principles to analyse and identify potential ‘druggable’ targets relevant to specific diseases and to understand drug discovery strategies that might be pursued to develop new drugs.
- Utilize appropriate computer software accurately to analyse pharmacological datasets.

Teaching and Learning Methods

Lectures; tutorials; computer-based, supervised work-session; problem-solving exercises; directed reading, computer-based, on-line quizzes

Assessment Methods

Quantitative pharmacology workbook
Examination (final)

Pre-Requisites

BS2013

Last Published: 12 November 2019

BS3054 Molecular & Cellular Pharmacology

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

• Each lecture (or set of lectures) will be supported by Reading Lists that will include recommended text books that can be used to provide basic support and key reviews and original research articles. For some of these materials informal quizzes will be provided on-line so that students are able to test their understanding of the recommended reading.

• To gain problem-solving skills in pharmacology the computer-based work-session will provide students with skills necessary to utilize a data-analysis programme such as GraphPad Prism. Students will then be expected to complete a workbook (as an assessment element) in which a number of datasets will require analysis and interpretation.

Module Specification

BS3055 Molecular & Cellular Neuroscience

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	23
Seminars	
Practical Classes & Workshops	
Tutorials	2
Fieldwork	
Project Supervision	
Guided Independent Study	125
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Nick Hartell
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	News & Views Assessment	30				
002	Examination (Final)	70		2.25		

Period: Semester 1
Occurence: E1
Coordinator: Nick Hartell
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	News & Views Assessment	30				
002	Examination (Final)	70		2.25		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Summarise the properties of ion channels, receptors and signalling pathways involved in synaptic transmission.
- Explain the spatial and temporal sequence of events and signals that underlie the development of the nervous system.
- Explain dendritic propagation and the mechanisms underlying action potential generation.
- Explain the molecular organization of a neurone and the role of anchoring, scaffolding, receptor and signalling proteins in pre- and post-synaptic regions.
- Identify the specialized features employed to transmit information between neurons and to understand how neuronal excitability is regulated.
- Analyse data series and interpret neuroscience experimental results.

Teaching and Learning Methods

Lectures - providing introductory material and helping to guide independent study.
Tutorials - a combination of data interpretation/problem based learning and critical assessment of current literature.
Essays – an opportunity for students to research, in greater depth, a topic that is likely to be examined.

Assessment Methods

Essay (1500 words)
Examination (final)

Pre-Requisites

BS2013 or BS2014 or BS2015 or BS2066

Co-Requisites

-

Last Published: 12 November 2019

BS3055 Molecular & Cellular Neuroscience

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Students should use the material provided in lectures and tutorials to review and research, in more depth, each of the topics covered
in the course. Prepare for the essay, revise, review material on the Reflect lecture capture system.

UNIVERSITY OF LEICESTER

Module Specification

BS3056 Cellular Physiology of the Cardiovascular System

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	3
Tutorials	4
Fieldwork	
Project Supervision	
Guided Independent Study	121
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Noel Davies
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Combined essay with computer generated data (2000 words)	30				
002	Examination (Final)	70		2.5		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
Describe the cardiovascular system and the general control mechanisms involved in regulating the cardiovascular system including the exchange of solutes between blood and tissue.
Explain the mechanisms of ion transport at the cell membrane and understand how ion channel structure relates to function.
Discuss the molecular processes involved in regulating ion channels and contractile proteins within the cardiovascular system. Describe the cellular mechanisms leading to the generation and regulation of the cardiac action potential.
Explain the mechanisms that lead to contraction of both cardiac and smooth muscle and how these processes are controlled by the regulation of intracellular Ca^{2} . Discuss disorders of cardiac rhythm and appreciate the consequences of impaired blood supply (ischaemia).
Discuss the mechanisms and importance of receptor-operated Ca^{2} increases in blood cells such as platelets and Lymphocytes.
Critique scientific information from a range of sources including the interpretation of data. Communicate biological information by writing and by means of tables, diagrams, drawings and graphs.

Teaching and Learning Methods

Lectures, computer simulation work-session, tutorials with problem solving worksheets, directed reading.

Assessment Methods

Combined essay with computer generated data (2000 words)
Examination (final)

Pre-Requisites

BS2013

Co-Requisites

-

Excluded Combinations

-

BS3056 Cellular Physiology of the Cardiovascular System

Guided Independent Study: Indicative Activities

Sourcing, reading and interpreting literature relevant to the combined essay.
Analysing, interpreting and presenting data obtained from running the ionic current simulation programme.
Interpreting the literature sources and simulated data to write the combined essay.
Preparing for the tutorials using pre-circulated tutorial questions.
Reviewing lecture material and reading literature relevant to the lecture topics to gain further insight into the module content.
Participate in a formative data-handling exercise aimed at improving understanding of key concepts.

UNIVERSITY OF LEICESTER

Module Specification

BS3059 Current and Future Therapeutics

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	20
Seminars	
Practical Classes & Workshops	
Tutorials	2
Fieldwork	
Project Supervision	
Guided Independent Study	128
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Gary Willars
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	In-course assesments	100				

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Appraise the underlying pathophysiology of a range of human diseases.
- Appraise current treatment strategies for a range of human diseases, showing a knowledge of inadequacies and unmet clinical need.
- Using specific examples, appraise current research aims, models and methods designed to facilitate the understanding, diagnosis or treatment of disease.
- Use a range of transferable skills that may include written communication, information technology, numeracy, team working, problem solving, information handling.

Teaching and Learning Methods

Lectures, tutorials, directed reading.

Assessment Methods

In-course assessments

Pre-Requisites

BS2013 or BS2014 or BS2015

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Looking through lecture material before and after lectures, reviewing lecture recordings. Additional reading around subject areas. Revision and work for in-course assessments.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS3064 Comparative Neurobiology

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	23
Seminars	
Practical Classes & Workshops	10
Tutorials	5
Fieldwork	
Project Supervision	
Guided Independent Study	112
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Tom Matheson
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical report	20				
002	Tutorial essay	20				
003	Examination	60		3		

Period: Semester 1
Occurence: E1
Coordinator: Tom Matheson
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical report	20				
002	Tutorial essay	20				
003	Examination	60		3		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
Use evidence from different animal groups to demonstrate knowledge and understanding of the principles of operation of sensory-motor integration leading to the generation of behaviour.
Synthesize raw data and published information to demonstrate understanding of energy storage mechanisms involved in insect jumping
Synthesize a range of relevant research literature to demonstrate understanding of a current topic in neuroscience.

Teaching and Learning Methods

Lectures, tutorials and laboratory practical classes.
Video recording of lectures.
Electronic documentation of lectures and practicals (e.g. Powerpoint slides, PDF documents).
Guided study.
Group work (practicals and tutorials).
Peer feedback on essay outlines, and collation of group resources (tutorials).
Use of online learning environment (Blackboard).

Assessment Methods

Practical report, Tutorial Essay, Examination

Pre-Requisites

BS2014 OR BS2066 OR BS2077

Last Published: 12 November 2019

Module Specification

BS3064 Comparative Neurobiology

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

•Preparing for practicals by reading the detailed practical instructions and related research papers.
•Carrying out in-depth analyses of two large datasets of practical results. Interpreting the data and relating them to the relevant literature.
•Reading primary research literature and textbooks to support the framework provided in lectures.
•Preparing for tutorials by searching for and reading relevant research literature, and writing essay outlines based on this.
•Following up on tutorials by revising collated material from the sessions, planning and writing a coursework essay on the allocated topic.
•Revising lecture notes together with material from the reading lists and found independently to prepare for the exam.
•Preparing for an optional revision tutorial.

UNIVERSITY OF LEICESTER

Module Specification

BS3068 Microbial Biotechnology

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	2
Practical Classes & Workshops	
Tutorials	4
Fieldwork	
Project Supervision	
Guided Independent Study	117
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Primrose Freestone
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Poster plus abstract	30				
002	Examination (Final)	70		2		

Period: Semester 1
Occurence: E1
Coordinator: Primrose Freestone
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Poster plus abstract	30				
002	Examination (Final)	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe the central theories and concepts of selected aspects of microbial biochemistry and biotechnology.
- Demonstrate an awareness of the importance of microbial biochemistry to industrial microbiological processes.
- Develop a reflective appreciation of the safety, social and ethical issues surrounding uses of micro-organisms in biotechnology.
- Communicate their knowledge of industrial microbiology via poster presentations.

Teaching and Learning Methods

Lectures, tutorials, mini-conference assessment, short field trip.

Assessment Methods

Poster plus abstract
Exam (final)

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Last Published: 12 November 2019

BS3068 Microbial Biotechnology

Guided Independent Study: Indicative Activities

Guided reading of current research papers, reviewing lectures, preparing poster and abstract, reflecting on field trip, revising for the end of module exam.

Module Specification

BS3070 Structural Biology

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	24
Seminars	
Practical Classes & Workshops	12
Tutorials	1
Fieldwork	
Project Supervision	
Guided Independent Study	113
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Peter Moody
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Examination (Final)	70		2.25		
002	Literature Comprehension Exercise	15				
003	NMR Workshop	15				

Period: Semester 1
Occurence: E1
Coordinator: Peter Moody
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Examination (Final)	70		2.25		
002	Literature Comprehension Exercise	15				
003	NMR Workshop	15				

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Evaluate research literature where structural biology techniques have been used
- Discuss the basis, properties and applications of important biophysical techniques.
- Explain the basis and approaches of protein crystallography.
- Explain the basis and approaches of protein nuclear magnetic resonance.
- Explain the basis and approaches of Cryo Electron Microscopy.
- Discuss the scope and contribution of protein bioinformatics as a computational method.

Teaching and Learning Methods

Lectures and computer based workshops.

Assessment Methods

Examination (final)
Data analysis workshop
NMR workshop

Pre-Requisites

-

Co-Requisites

-

Last Published: 12 November 2019

BS3070 Structural Biology

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Each topic has a reading list given to the students, with the expectation of viewing prior to lecture. The lectures are recorded using Reflect and made available to students for the whole year. Preparation for workshops, including analysis of data

UNIVERSITY OF LEICESTER

Module Specification

BS3073 Conservation and Ecological Genetics

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	20
Seminars	4
Practical Classes & Workshops	12
Tutorials	5
Fieldwork	
Project Supervision	
Guided Independent Study	109
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Robert Hammond
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical report (written as research paper)	30				
002	Student presented seminar	20				
003	Examination (Final)	50		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe the various types of molecular marker and their properties
- With a knowledge of underlying theory, describe and explain how molecular markers can be used to understand aspects of behaviour, ecology and evolution
- Apply their knowledge of molecular markers to conservation and environmental issues.

Teaching and Learning Methods

Lectures, Laboratory practical classes, Tutorials (discussions of primary research papers), Student seminars (peer learning)

Assessment Methods

Practical report (written as research paper)
Student presented seminar
Examination (final)

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Directed reading, with particular emphasis on the primary literature

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

BS3901 Research Project

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 120

Student Workload (hours)

Lectures	
Seminars	
Practical Classes & Workshops	200
Tutorials	
Fieldwork	
Project Supervision	100
Guided Independent Study	600
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	900

Period: Academic Year
Occurence: E1
Coordinator: Noel Davies
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Laboratory Performance	25				
002	Report	75				

Period: Academic Year
Occurence: E2
Coordinator: Noel Davies
Mark Scheme: UG Module Grade Only

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Laboratory Performance	100				

Intended Learning Outcomes

On completion of the project, students are expected to be able to:- test a hypothesis by appropriate experimental or computer-based techniques; conduct experimental procedures and demonstrate good laboratory or bioinformatics practice; analyse and present experimental or bioinformatics data; locate appropriate literature sources and interpret their findings in relation to other work in their subject area; discuss the project report and be aware of its wider context; produce a well written and presented dissertation that complies with the guidelines for presentation of the project.

Teaching and Learning Methods

Directed reading, Project supervision, Independent research.

Assessment Methods

Assessment of performance, individual research projects, dissertation.

PLEASE NOTE: Applicants may only apply for this project if they can submit a letter of confirmation from an academic who has agreed to supervise their project.

Your home university will be asked to confirm whether you should be assessed by Assessment Group E1 or E2. E2 is based upon the assumption that the overall grading for your period of study will be determined via your report to your home university.

Pre-Requisites

-

Co-Requisites

-

Last Published: 12 November 2019

Module Specification

BS3901 Research Project

Excluded Combinations

-

Guided Independent Study: Indicative Activities

-

UNIVERSITY OF LEICESTER

Module Specification

BS3902 Research Project

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 60

Student Workload (hours)

Lectures	
Seminars	
Practical Classes & Workshops	200
Tutorials	
Fieldwork	
Project Supervision	40
Guided Independent Study	210
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	450

Period: Semester 1
Occurence: E
Coordinator: Noel Davies
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Laboratory Performance	100				

Period: Semester 1
Occurence: E1
Coordinator: Noel Davies
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Laboratory Performance	100				

Period: Semester 1
Occurence: E2
Coordinator: Noel Davies
Mark Scheme: UG Module Grade Only

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Laboratory Performance	100				

Period: Semester 2
Occurence: E
Coordinator: Noel Davies
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Laboratory Performance	100				

Period: Semester 2
Occurence: E1
Coordinator: Noel Davies
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Laboratory Performance	100				

Period: Semester 2

UNIVERSITY OF LEICESTER

Module Specification

BS3902 Research Project

Occurence: E2

Coordinator: Noel Davies

Mark Scheme: UG Module Grade Only

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Laboratory Performance	100				

Intended Learning Outcomes

On completion of the project, students are expected to be able to:- test a hypothesis by appropriate experimental or computer-based techniques; conduct experimental procedures and demonstrate good laboratory or bioinformatics practice; analyse and present experimental or bioinformatics data; locate appropriate literature sources and interpret their findings in relation to other work in their subject area; discuss the project report and be aware of its wider context; present the key findings in the form of an oral presentation; produce a well written and presented dissertation that complies with the guidelines for presentation of the project.

Teaching and Learning Methods

Directed reading, Project supervision, Independent research

Assessment Methods

Oral presentation, assessment of performance, individual research projects, dissertation.

PLEASE NOTE: Applicants may only apply for this project if they can submit a letter of confirmation from an academic who has agreed to supervise their project.

Your home university will be asked to confirm whether you should be assessed by Assessment Group E1 or E2. E2 is based upon the assumption that the overall grading for your period of study will be determined via your report to your home university.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

-

UNIVERSITY OF LEICESTER

Module Specification

BS4307 MBiolSci Research Project (Infection and Immunity)

Academic Year: 2019/0
Module Level: Year 4
Scheme: UG
Department: Biological Sciences
Credits: 60

Student Workload (hours)

Lectures	
Seminars	20
Practical Classes & Workshops	365
Tutorials	
Fieldwork	
Project Supervision	10
Guided Independent Study	205
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	600

Period: Semester 2
Occurence: E
Coordinator: Alan Bevington
Mark Scheme: Integrated Masters' Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Supervisor's report on lab performance (marked at the partner institution)	35				
002	Written Dissertation (up to 15,000 words) (marked by University of Leicester staff)	55				
003	Poster presentation (marked by University of Leicester staff)	10				

Intended Learning Outcomes

Demonstrate practical and theoretical competence in key experimental methods, competent use of standard and specialized equipment, knowledge of safety procedures and safety assessment.Critically appraise complex theoretical and technical evidence accurately and rigorously in the context of the published literature.Demonstrate competence in written and poster presentation methods, and ability to discriminate between relevant and non-relevant material and to prioritise and present in a logical sequence.Perform literature review, experimental design, essential laboratory methods, problem solving, data analysis, and statistical analysis.In the Erasmus programme, demonstrate the capacity to work in a research laboratory and study in another European University

Teaching and Learning Methods

Laboratory research project and project supervision

Attendance at departmental or college research seminars

Assessment Methods

Poster presentation, supervisor report, and written dissertation. Project progress reports and final report on lab performance by project supervisor.

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Study of research literature and experimental design under the guidance of research project supervisor; writing up laboratory experiments; independent preparation of laboratory research materials and running of experiments; laboratory data analysis and relevant statistical analysis; literature searching and writing of research dissertation and research poster.

UNIVERSITY OF LEICESTER

Module Specification

BS4317 MBiolSci Research Project (Chronic Disease and Immunity)

Academic Year: 2019/0
Module Level: Year 4
Scheme: UG
Department: Biological Sciences
Credits: 60

Student Workload (hours)

Lectures	
Seminars	20
Practical Classes & Workshops	
Tutorials	
Fieldwork	
Project Supervision	10
Guided Independent Study	205
Demonstration	
Supervised time in studio/workshop	365
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	600

Period: Semester 2
Occurence: E
Coordinator: Alan Bevington
Mark Scheme: Integrated Masters' Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Poster presentation (marked by University of Leicester staff)	10				
002	Supervisor's report on lab performance (marked at partner institution)	35				
003	Written dissertation (up to 15,000 words) (marked by University of Leicester staff)	55				

Intended Learning Outcomes

Demonstrate practical and theoretical competence in key experimental methods, competent use of standard and specialized equipment, knowledge of safety procedures and safety assessment.Critically appraise complex theoretical and technical evidence accurately and rigorously in the context of the published literature.Demonstrate competence in written and poster presentation methods, and ability to discriminate between relevant and non-relevant material and to prioritise and present in a logical sequence.Perform literature review, experimental design, essential laboratory methods, problem solving, data analysis, and statistical analysis.In the Erasmus programme, demonstrate the capacity to work in a research laboratory and study in another European University

Teaching and Learning Methods

Laboratory research project and project supervision

Attendance at departmental or college research seminars

Assessment Methods

Project progress reports, written dissertation and final report on lab performance by project supervisor

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Study of research literature and experimental design under the guidance of research project supervisor; writing up laboratory experiments; independent preparation of laboratory research materials and running of experiments; laboratory data analysis and relevant statistical analysis; literature searching and writing of research dissertation and research poster.

UNIVERSITY OF LEICESTER

Module Specification

MB1080 Introduction to Medical Bioscience

Academic Year: 2019/0
Module Level: Year 1
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	16
Seminars	2
Practical Classes & Workshops	9
Tutorials	18
Fieldwork	
Project Supervision	
Guided Independent Study	105
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Chris Willmott
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Essay under exam conditions	30	1			
002	Oral presentation	30	1			
003	Data handling and Scientific report	40	1			

Intended Learning Outcomes

On completion of the module, students should be able to:
•Describe the molecular basis of wound healing and scarring
•Discuss the importance of genomics to cancer diagnosis and prognosis
•Describe the role of the microbiome in disease
•Demonstrate awareness of the key features of an effective essay-style examination answer
•Carry out basic numerical manipulations of scientific measurements, and critically analyse experimental data
•Identify the features of an effective oral presentation
•Prepare effective visual aids (e.g. PowerPoint slides)

Teaching and Learning Methods

Lectures, Tutorials, Peer Assessment of oral presentation (formative, prior to assessed task), Peer Assessment of exam essays (formative), Practical Classes.

Assessment Methods

- Exam under exam conditions: 30%
- Oral presentation: 30%
- Data-handling and Scientific Report: 40%

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Recommended reading (for essay).
Independent research (for oral presentation).
Practice activites (for data handling task).
Additional reading and recommended audiovisual resources (viewing list).

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

MB2020 Medical Microbiology

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	21
Tutorials	4
Fieldwork	
Project Supervision	
Guided Independent Study	103
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Galina Mukamolova
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Practical Booklet	40				
002	Examination (final)	60		1.5		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Describe major infectious diseases and name corresponding causative agents.
- Characterise major human pathogens and explain how they adapt to different environments.
- Describe the basic principles of microbial diagnostics and their application for detection of pathogens.
- Explain treatment and prevention of infectious diseases.
- Conduct experiments for identification and characterisation of microorganisms of medical importance.
- Demonstrate competency in oral and written communications, information sourcing, handling and referencing, numeracy, data analysis, basic statistical skills, problem solving, and group working.
- Demonstrate awareness of health sustainability.

Teaching and Learning Methods

Lectures, tutorials, practical classes, workshops, problem solving classes.

Assessment Methods

- Practical booklet: 40%
- Exam (1.5 hours): 60%

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Reading, reviewing lectures, preparing workbook, presentation and revising for exam.

UNIVERSITY OF LEICESTER

Module Specification

MB2050 Applications of Medical Biochemistry

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures
Seminars
Practical Classes & Workshops
Tutorials
Fieldwork
Project Supervision
Guided Independent Study
Demonstration
Supervised time in studio/workshop
Work Based Learning
Placement
Year Abroad
Total Module Hours

Period: Semester 1
Occurence: E
Coordinator: Chris Willmott
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
005	Visual Abstract	30				
006	Video production	30				
007	Examination	40		1.25		

Period: Semester 1
Occurence: E1
Coordinator: Chris Willmott
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
005	Visual Abstract	30				
006	Video production	30				
007	Examination	40		1.25		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Outline selected techniques used in diagnosis and treatment of human disease.
- Give an overview of the process involved in the generation of a pharmaceutical product.
- Discuss molecular aspects of drug design and therapeutic protein production.
- Consider the potential impact of genomics on the diagnosis and treatment of disease.
- Discuss key social and ethical issues related to current development in biomedicine.
- Work as a team to design and produce a video to discuss a specific bioethical issue.
- Critically review the information available on a specific area of biology/medicine and summarise current knowledge in a written report.

Teaching and Learning Methods

Lectures, computer-based sessions, tutorials, team-based working, examples of previous student work provided.

Assessment Methods

- Report to Government: 30%
- Bioethics video: 30%
- Exam (1.25 hours): 40%

Pre-Requisites

-

Last Published: 12 November 2019

MB2050 Applications of Medical Biochemistry

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Independent research on science and ethics (for video)
Research on novel therapeutic agent (for written report), starting with initial provided source.
Recommended online resources regarding video production;
other audiovisual resources.
Recorded lectures made available for review using Reflect lecture capture system.

UNIVERSITY OF LEICESTER

Module Specification

MB2051 Current Issues in Medical Genetics

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	
Seminars	30
Practical Classes & Workshops	
Tutorials	
Fieldwork	
Project Supervision	
Guided Independent Study	120
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 1
Occurence: E
Coordinator: Christopher Talbot
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
005	Ethical matrix	20				
006	Website	30				
007	Dissertation (5000 words) (final)	50				

Period: Semester 1
Occurence: E1
Coordinator: Christopher Talbot
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
005	Ethical matrix	20				
006	Website	30				
007	Dissertation (5000 words) (final)	50				

Intended Learning Outcomes

On completion of the module a typical student should be able to:
• Explain the scientific basis of current controversies in medical genetics.
• Evaluate the arguments on both sides of an ethical topic
• Outline the procedures in place for the establishment of laws and guidelines governing one of the areas listed above.
• Work as part of a team to produce a variety of presentations.

Teaching and Learning Methods

Seminars with mixture of tutor and student led discussions.
Feedback from assessment

Assessment Methods

- Ethical Matrix: 20%
- Website: 30%
- Dissertation (5,000 words): 50%

Pre-Requisites

-

Co-Requisites

-

Last Published: 12 November 2019

MB2051 Current Issues in Medical Genetics

Excluded Combinations

-

Guided Independent Study: Indicative Activities

- Preparation for seminars
- Reading references from seminars
- Preparation for ethical matrix
- Team co-ordination and preparation of website
- Researching and writing the dissertation

UNIVERSITY OF LEICESTER

Module Specification

MB2080 Pathophysiology of Disease

Academic Year: 2019/0
Module Level: Year 2
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	21
Seminars	
Practical Classes & Workshops	2
Tutorials	2
Fieldwork	
Project Supervision	
Guided Independent Study	125
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Jonathon Willets
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Essay	15				
002	Computer-based multiple choice exam	15		1		
003	Examination	70		2		

Period: Semester 2
Occurence: E1
Coordinator: Jonathon Willets
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Essay	15				
002	Computer-based multiple choice exam	15		1		
003	Examination	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Discuss the underlying physiological and biochemical mechanisms and disease-induced changes associated with a range of human conditions
- Outline the symptoms, prevalence, morbidity, mortality, and risk factors associated with the range of human disease states covered.
- Make effective use of electronic sources of information, including the PUBMED and OMIM databases and disease specific web sites, to find out detailed information about the physiology, aetiology and epidemiology of a particular disease.
- Critically evaluate the use of laboratory data in the identification, aetiology and pathogenesis of selected diseases processes.

Teaching and Learning Methods

Lectures, tutorials with problem-solving worksheets, laboratory practical class, work session, directed reading, study support session(s).

Assessment Methods

Coursework essay, computer-based multiple choice test and examination (final).

Pre-Requisites

-

Co-Requisites

-

Last Published: 12 November 2019

MB2080 Pathophysiology of Disease

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for problem solving tutorials. Completion of worksheets for tutorials. Looking through lecture material before and after lectures, reviewing lecture recordings. Additional reading around subject areas and revision for examination.

UNIVERSITY OF LEICESTER

Module Specification

MB3001 Biochemical Mechanisms of Human Disease

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	21
Seminars	
Practical Classes & Workshops	
Tutorials	3
Fieldwork	
Project Supervision	
Guided Independent Study	126
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Russell Wallis
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Examination [Final]	70		2.25		
002	Coursework - literature analysis	30				

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Summarise the biochemical evidence and current theories about normal and pathological ageing.
- Describe the genetic basis of laminopathies and explain how different mutations can result in different disease phenotypes by altering different properties and functions of the nuclear envelope
- Explain the molecular basis of complement activation and its role indisease
- Summarise the factors that are involved in the development of inflammation and asthma
- Critically evaluate scientific papers

Teaching and Learning Methods

Lectures, Tutorials, Guided reading, Independent research.

Assessment Methods

Examination (final)
Coursework – literature analysis

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Guided reading associated with lectures
Directed critical analysis of recent scientific paper(s) on topic associated with the lectures

UNIVERSITY OF LEICESTER

Module Specification

MB3020 Advanced Topics in Medical Microbiology

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	23
Seminars	3
Practical Classes & Workshops	
Tutorials	4
Fieldwork	
Project Supervision	
Guided Independent Study	120
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Edouard Galyov
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Case Presentation	30				
002	Examination (Final)	70		2		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Critically assess current views on the molecular mechanisms underlying bacterial virulence, drawing on evidence from the studies of host-pathogen interactions, immune responses, and lessons from history.
- Describe the key virulence factors and systems of major bacterial pathogens, and mechanisms of their acquisition and exchange.
-Define host responses to bacterial infections and approaches used to diagnose bacterial infections and to create effective vaccines; to demonstrate awareness how these approaches contribute to sustainable health care.
- Have gained, in the context of the above areas of microbiology, experience of accessing information from the scientific literature in electronic and written form, to be able to perform analysis of a hypothetical clinical case and to provide an overview of microbial pathogenicity through an oral presentation.

Teaching and Learning Methods

Lectures, seminars, tutorials,directed reading

Assessment Methods

Case presentation
Examination (final)

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Reading recent research papers and review articles; assessing relevant on line education materials, self-testing, reviewing lectures, preparing clinical case presentation seminar, revising for examination.

Last Published: 12 November 2019

UNIVERSITY OF LEICESTER

Module Specification

MB3050 Medical Genetics

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	3
Practical Classes & Workshops	
Tutorials	4
Fieldwork	
Project Supervision	
Guided Independent Study	121
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Christopher Talbot
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Exam (Final)	60		2		
002	Essay (3000 words)	27				
003	Presentation	13				

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Assess how genetics has impacted upon the practice of medicine
- Outline the problems and advances in using genetics to understand complex diseases
- Demonstrate a knowledge of the contribution of genetics to the study of various diseases, eg neurological, cardiovascular disease and cancer.
- Research and integrate information from a range of sources in order to give a critical appraisal of a chosen specialist area.
- Appraise a current research paper and give an oral presentation on it.

Teaching and Learning Methods

Lectures, Tutorials, Seminars, Tutor and peer-reviewed presentations, essay and feedback, pre-exam clinic, exam

Assessment Methods

Exam (Final)
Essay (3000 words)
Presentation

Pre-Requisites

-

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for lectures
Reviewing lecture presentations
Reading references from lectures
Researching and writing the essay
Researching, preparing and practicing the presentation

UNIVERSITY OF LEICESTER

Module Specification

MB3057 Understanding Disease - An Integrated Approach

Academic Year: 2019/0
Module Level: Year 3
Scheme: UG
Department: Biological Sciences
Credits: 15

Student Workload (hours)

Lectures	22
Seminars	
Practical Classes & Workshops	
Tutorials	1
Fieldwork	
Project Supervision	
Guided Independent Study	127
Demonstration	
Supervised time in studio/workshop	
Work Based Learning	
Placement	
Year Abroad	
Total Module Hours	150

Period: Semester 2
Occurence: E
Coordinator: Ruth Luthi-Carter
Mark Scheme: UG Module Mark Scheme

No.	Assessment Description	Weight %	Qual Mark	Exam Hours	Ass't Group	Alt Reass't
001	Essay (2000 words)	20				
002	In-course tests (4)	30				
003	Examination (Final)	50		1.5		

Intended Learning Outcomes

On successful completion of the module, students should be able to:
- Appraise a range of specific human diseases, including their clinical signs and symptoms, disease aetiology, and current and future treatments.
- Appraise a range of common molecular and cellular process that lead to disease pathogenesis, such as heritability, inflammation, auto-immunity, homeostasis, protein aggregation, failure of tissue repair and abnormalities in intercellular signaling.
- Identify, integrate and convey information from a variety of sources and data types to assemble a comprehensive view of a particular disease or health condition.

Teaching and Learning Methods

Lectures, study support tutorial, directed reading, independent information gathering, essay writing, in-course tests.

Assessment Methods

Essay (2000 words)
In-course tests (4)
Examination (final)

Pre-Requisites

MB2080

Co-Requisites

-

Excluded Combinations

-

Guided Independent Study: Indicative Activities

Preparation for in-course tests and final examination. Independent research for and writing of disease essay. Completion of exercises for tutorial. Looking through lecture material before and after lectures, reviewing lecture recordings. Additional reading around subject areas, including supplemental materials provided.

Last Published: 12 November 2019