ANIMAL DIVERSITY - 2024/5

Module code: BMS3095

Module Overview

This module builds on your knowledge gained in the first year in relation to the evolutionary mechanism of adaptation (BMS1040) and in the second year about animal's anatomy and physiology (BMS2062) and their role in the ecosystems (BMS2070).

Using an evolutionary approach, this module provides an in-depth overview of the different taxa from sponges to mammals within the animal kingdom, focusing on their classification, morphological diversity, and adaptation to their specific habitats. It is designed for the needs and interests of Biological Sciences students but is open as an option to all students who are interested in gaining a greater understanding of animal

Module provider School of Biosciences Module Leader SANTORELLI Lorenzo (Biosciences)

Number of Credits: 15

ECTS Credits: 7.5

Framework: FHEQ Level 6

Module cap (Maximum number of students): N/A

Overall student workload

Independent Learning Hours: 100

Lecture Hours: 25

Tutorial Hours: 5

Laboratory Hours: 9

Guided Learning: 4

Captured Content: 2

Module Availability

Semester 1

N/A

Module content

Classification and organisation: principle of taxonomy and phylogeny

Traits to define an animal. The origin of metazoan.

Animal body plans; definition of Phylum

The Cambrian explosion.

The big 9 phyla of animals: porifera, cnidaria, platyhelminthes, mollusca, annelida, nematoda, arthropoda, echinoderma, chordata.

Main chordata clades and classes: Fish, amphibians, reptiles (and dinosaurs), mammals.

Practicals include: phylogeny, squid dissection, dichotomous keys

Filed trip to Grant zoological museum London

Assessment pattern

Assessment type	Unit of assessment	Weighting
Coursework	PORTFOLIO BASED ON EXERCISES LINKED TO THE PRACTICALS	50
Examination	INVIGILATED EXAM SHORT ANSWER QUESTIONS (90 MINS)	50

Alternative Assessment

In case the student could not perform one or more practicals for justified absence or ethical reasons (i.e. dissections), alternative materials and appropriate instructions are provided in order to complete the required exercises for the final portfolio

Assessment Strategy

The <u>assessment strategy</u> is designed to provide students with the opportunity to demonstrate that they have achieved the modules learning outcomes and, by association, developed employability skills, digital capabilities and resourcefulness and resilience among other module attributes.

Thus, the <u>summative assessment</u> for this module consists of:

Portfolio of activities linked to the practicals, including: phylogeny report (LO 1,2,3,4); Cambrian essay (LO 5,6); Report linked to practical and museum visit (LO 6,7,8)

Invigilated 90 minutes essay questions exam (LO 3,5,6,7)

Formative assessment

For the phylogeny and Cambrian assessment, students will be allowed to submit a draft and receive formative feedback before the final submission.

Further feedback will be provided during quizzes.

Feedback

Written feedback will be provided following submission of each component. Further tutorials will be provided to discuss issues with students. The discussion board will be monitored, and any comments or questions will be prompted answered.

Why are we doing this?

The assessment strategy is designed to balance issues relating to theory (via a written Strategic management Plan) and procedure and practice (via a practice-based assessment) to provide students with a holistic approach to testing their knowledge and skills in relation to animal phylogeny and taxonomy. It is further designed to allow students to develop and test their knowledge and their skills in a manner that not only enhances their understanding of the topic, but also allows them to situate it within the wider context of the subject area, thereby contributing to the coherency of their learning journey.

The assessment strategy also allows for assessment to take place in a supportive context through collaborative work with outcomes that serve to illustrate the relationship between those managing and those conducting major crime investigations. This will enhance the student learning journey and allow students to understand the basis of the evolutionary process which lead to animal's adaptations and diversification.

Module aims

- Apply the principles of evolution to understand how animal diversity has arisen and organisms have adapted to different environments
- Understand the relation between animal phyla and their main morphological differences
- Gain an insight of animal taxonomy and anatomy through practical tools as dissection and the use of dichotomous keys.
- Understand and apply the principles of taxonomy and phylogeny

Learning outcomes

		Attributes Developed
001	Explain taxonomical hierarchy	К
002	Explain different tissue types and body organisation	К
003	Compare and contrast the morphology and anatomy of the major groups and be able to identify representatives of the groups	K
004	Understand the basis and produce phylogenetic trees	KCP
005	Describe marphalagical above stariation and evalutionary relationships of marchare of different	K

- phyla
- 006 Understand how adaptations to the environment reflect on the anatomy and behaviour of organisms
- 007 Describe, compare and discuss the locomotion, reproduction, feeding and digestion of a range of KP animals
- 008 Gain key skills in manipulating and dissecting specimens

KPT

Attributes Developed

C - Cognitive/analytical

KC

K - Subject knowledge

- **T** Transferable skills
- P Professional/Practical skills

Methods of Teaching / Learning

The learning and teaching strategy is designed to:

The learning and teaching strategy is designed to give students a broad understanding of animal diversity and the evolutionary relationship in the kingdom animalia

The delivery of the content will both class and practical.

The class component will be based upon student focused learning based of taxonomy and anatomy of animals. Practicals will include: design a phylogenetic tree based on animal recognition; dissection of a squid, use of dichotomous keys to identify orders of insects

During practicals, students will be working in groups, to allow peer-peer interaction, thus aiding personal understanding and developing transferable/ social interaction skills.

Several documentaries will be shown to place the content into context.

The learning and teaching methods include:

Lectures

Interactive tutorials

Practical sessions

Quizzes

Documentaries

Formative assessment

Field trip.

Indicated Lecture Hours (which may also include seminars, tutorials, workshops and other contact time) are approximate and may include in-class tests where one or more of these are an assessment on the module. In-class tests are scheduled/organised separately to taught content and will be published on to student personal timetables, where they apply to taken modules, as soon as they are finalised by central administration. This will usually be after the initial publication of the teaching timetable for the relevant approximate and approximate and approximate and the teaching timetable for the relevant approximate and the teaching timetable for the relevant approximate and the teaching timetable for the relevant approximate appro

timetable for the relevant semester.

Reading list

https://readinglists.surrey.ac.uk

Upon accessing the reading list, please search for the module using the module code: BMS3095

Other information

Resourcefulness & resilience: The assessments for this module rely on the ability to interpret and understand primary research literature, and to produce data in practical. The coursework will allow students to develop teamwork skills, problem-solving, decision-making, self-efficacity, self-regulation and confidence.

Global & cultural capabilities: Students will work in small groups during the practical sessions and for an assignment which will encourage and engage students in working with other students from different cultures and abilities to achieve an end goal.

Sustainability: The module will consider the principles on which biodiversity and conservation are based, as well as the main concepts on how these are maintained in the light of animal diversity

Digital capabilities: For each component of the course work students will produce a material using Microsoft Suits software as PowerPoint. Students will also utilize the virtual learning environment SurreyLearn and other digital resources. The skills learned will be applied in the assignments they undertake to equip the students for a variety of modern professions.

Employability: Transferable skills such as the ability to work in a team, report findings in a scientific manner and ability to identify clades will equip students for a variety of modern professions.

Programmes this module appears in

Programme	Semester	Classification	Qualifying conditions
<u>Biological Sciences (Animal Biology and</u> <u>Ecology) BSc (Hons)</u>	1	Compulsory	A weighted aggregate mark of 40% is required to pass the module
<u>Biological Sciences BSc (Hons)</u>	1	Optional	A weighted aggregate mark of 40% is required to pass the module
<u>Veterinary Biosciences BSc (Hons)</u>	1	Optional	A weighted aggregate mark of 40% is required to pass the module

Please note that the information detailed within this record is accurate at the time of publishing and may be subject to change. This record contains information for the most up to date version of the programme / module for the 2024/5 academic year.