BIOS 1001 BIODIVERSITY

Credit Points 10

Legacy Code 300802

Coordinator Christa Beckmann (https://directory.westernsydney.edu.au/search/name/Christa Beckmann/)

Description How many species walk, fly, swim or slither, crawl, hop, wriggle or just float, hitchhike or move so slowly that they appear not to move at all? No one knows and new species appear almost every day. This subject focuses on this spectacular diversity of living things and the process of evolution. Students explore and classify biodiversity and how organisms function, acquire and assimilate resources and co-ordinate growth and reproduction. Organisms interact with one another and their environment forming a complex set of interactions in ecosystems. It is these interactions that have driven evolution. Ultimately human survival depends on the sustainable use of this biodiversity and ecosystems.

School Science

Discipline Ecology and Evolution

Student Contribution Band HECS Band 2 10cp

Check your HECS Band contribution amount via the Fees (https://www.westernsydney.edu.au/currentstudents/current_students/fees/) page.

Level Undergraduate Level 1 subject

Equivalent Subjects BIOS 1006 - Biology A – The Diversity of Life BIOS 1002 - Biodiversity BIOS 1005 - Biology 2 BIOS 1003 - Biodiversity

Incompatible Subjects LGYA 3841 - Foundation Biology 2 LGYB 5438 - Biological Sciences 12 LGYB 9635 - General Biology

Assumed Knowledge

Basic knowledge of biology and chemistry.

Learning Outcomes

On successful completion of this subject, students should be able to:

1. Describe the characteristics of major biological groups and demonstrate how this information can be used to classify an unknown organism.
2. Explain and provide examples that demonstrate how evolution has given rise to biodiversity.
3. Describe and explain the role of cells, tissues and organs in the structure and function of organisms.
4. Explain how organisms acquire the resources necessary to function.
5. Describe the scientific method and demonstrate how it can be used to test explanations of observations by formulating testable hypotheses and designing experiments.
6. Conduct basic investigations of organisms using microscopy, experimentation and perform data analysis and interpret results.
7. Apply and transfer chemical principles to other contexts such as the origin of life, and how organisms acquire the necessary resources to sustain life.
8. Evaluate data and evidence from scientific literature.

Subject Content

The characteristics of living things and the nature of Biodiversity
Science as a way of knowing
Classification, taxonomy and species
Evolutionary theory
A survey of the major groups of living things from bacteria, viruses, protists and fungi to plants and animals
Evolutionary development of structure and function
The role of living organisms in ecosystems
The Biodiversity crisis
Basic light microscopy observing plants, animals and microbes
Sorting, organising and classifying organisms
Formulation of scientific hypothesises, designing experiments and data analysis

Assessment

The following table summarises the standard assessment tasks for this subject. Please note this is a guide only. Assessment tasks are regularly updated, where there is a difference your Learning Guide takes precedence.

Type	Length	Percent	Threshold	Individual/ Group Task
Multiple Choice	Approximately 1 hour per week, but of variable duration due to student's ability	10	N	Individual
Quiz	50 minutes	20	N	Individual
Practical	4 x 3 hours	20	N	Individual
Final Exam	2 hours	50	N	Individual

Prescribed Texts

- Mason KA, Losos AB, Singer SR 2017 Biology, 11th ed. McGraw-Hill, New York (Available online)
- Raven, P., Johnson, G., Mason, K., Losos, J., Duncan, T. 2023. Biology, 13th Edition McGraw-Hill, New York (Available Online)

Teaching Periods

Autumn (2022)

Campbelltown

Day

Subject Contact Christa Beckmann (https://directory.westernsydney.edu.au/search/name/Christa Beckmann/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=BIOS1001_22-AUT_CA_D#subjects)

Hawkesbury

Composite

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=BIOS1001_22-AUT_HW_C#subjects)

Day

Subject Contact Christa Beckmann (https://directory.westernsydney.edu.au/search/name/Christa Beckmann/)

View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=BIOS1001_22-AUT_HW_D#subjects)

Parramatta - Victoria Rd

Day

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View timetable (https://classregistration.westernsydney.edu.au/even/timetable/?subject_code=BIOS1001_22-AUT_PS_D#subjects)

Autumn (2023)

Campbelltown

On-site

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View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=BIOS1001_23-AUT_CA_1#subjects)

Hawkesbury

On-site

Subject Contact Christa Beckmann (https://directory.westernsydney.edu.au/search/name/Christa Beckmann/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=BIOS1001_23-AUT_HW_1#subjects)

Hybrid

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View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=BIOS1001_23-AUT_HW_3#subjects)

Parramatta - Victoria Rd

On-site

Subject Contact Christa Beckmann (https://directory.westernsydney.edu.au/search/name/Christa Beckmann/)

View timetable (https://classregistration.westernsydney.edu.au/odd/timetable/?subject_code=BIOS1001_23-AUT_PS_1#subjects)