

LF136-30 Practical skills for biologists

1

26/27

Department

Life Sciences

Level

Undergraduate Level 1

Module leader

Beatriz Lagunas

Credit value

30

Module duration

25 weeks

Assessment

Multiple

Study location

University of Warwick main campus, Coventry

Description

Introductory description

This module provides an introduction to the fundamental skills required for all life sciences degrees. The module comprises three teaching categories: tutorial, laboratory and quantitative skill workshop sessions, where the different skills are taught and assessed synoptically.

Tutorial sessions focus on communication skills (both written and oral), information literacy, critical thinking, teamwork, and problem solving.

Through tutorials, tutors will identify and support individual pastoral care needs and introduce the referral pathway where appropriate.

Laboratory sessions focus on fundamental laboratory skills and techniques. Students learn to generate good quality data, and conduct preliminary interpretation and analysis.

Quantitative skills sessions focus on analytical techniques to interpret data, including what they've generated in the laboratory sessions.

Module aims

Students will gain experience with basic lab techniques, learn to acquire and analyse data, and

communicate their findings.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

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Learning outcomes

By the end of the module, students should be able to:

- Research given topics in peer-reviewed primary literature and consolidate relevant information to present well-structured scientific writing .
- Deliver oral presentations, where the delivery style will be appropriate to the topic and audience.
- Show development in their critical analytical skills.
- Understand the scientific method to perform simple hypothesis-driven experiments, with due regard to appropriate accuracy and detail.
- Develop skills and understanding in statistical analysis for interpreting biological data.
- Understand the importance of good laboratory preparation and practice.
- Understand the relevance of presenting data professionally.
- Understand the relevance of professionalism and teamwork.

Subject specific skills

Research given topics in the peer-reviewed primary literature and consolidate relevant information to present well-structured scientific writing.

Develop and deliver oral presentations where the content, accuracy, and delivery style will be appropriate to the topic and audience.

Develop familiarity with basic laboratory skills and good laboratory practice.

Transferable skills

Communication
Critical thinking
Digital literacy
Information literacy
Professionalism
Problem solving
Teamwork

Study

Study time

Type	Required	Optional
Seminars	(0%)	4 sessions of 1 hour
Tutorials	18 sessions of 1 hour (6%)	
Practical classes	13 sessions of 2 hours (9%)	
Supervised practical classes	10 sessions of 6 hours (20%)	
Private study	196 hours (65%)	
Total	300 hours	

Private study description

Preparations for labs, workshops and tutorials, completion of coursework, and reflection on individual and cohort feedback.

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group D

	Weighting	Study time	Eligible for self-certification
Lab report 2	10%		No

	Weighting	Study time	Eligible for self-certification
Lab report 2 (lab report 1 is formative)			
Lab report 3	10%		No
Lab report 3 (lab report 1 is formative)			
Lab report 4	10%		No
Lab report 4 (lab report 1 is formative)			
Professional laboratory skills	10%		No
Skills assessed in the lab classes for every lab, each on a pass/fail basis (marks are cumulative). The mark awarded will be the percentage of marks gained.			
Pre-laboratory skills	12%		No
Skills assessed in advance of the lab classes for every lab, each on a pass/fail basis (marks are cumulative). The mark awarded will be the percentage of marks gained.			
Scientific writing	10%		Yes (extension)
Scientific writing to assess ability to synthesise information from different sources			
Oral presentation	10%		No
Oral presentation to assess ability to synthesise information from different sources			
Poster presentation	10%		No
Poster presentation to assess ability to synthesise information from different sources			
Quantitative skills assessment	10%		Yes (extension)
Assessment of the skills delivered during workshops, and their application to biological data.			
Foundational quantitative skills test	8%		No
Assessment of the foundational skills that underpin biological data analysis.			

Assessment group R1

	Weighting	Study time	Eligible for self-certification
No reassessment	100%		No
This module is not reassessed			

Feedback on assessment

Individual written feedback on scientific writing (oral and poster presentations).
Oral feedback is given for formative oral presentations work and lab assessed skills.
Cohort-level feedback for quant skills assignments.

Individual rubrics and cohort feedback for lab reports.

[Past exam papers for LF136](#)

Availability

Courses

This module is Core for:

- UBSA-C700 Undergraduate Biochemistry
 - Year 1 of C700 Biochemistry
 - Year 1 of C700 Biochemistry
- ULFA-C1A2 Undergraduate Biochemistry (MBio)
 - Year 1 of C1A2 Biochemistry
 - Year 1 of C700 Biochemistry
- Year 1 of ULFA-C702 Undergraduate Biochemistry (with Placement Year)
- Year 1 of ULFA-C1A6 Undergraduate Biochemistry with Industrial Placement (MBio)
- UBSA-3 Undergraduate Biological Sciences
 - Year 1 of C100 Biological Sciences
 - Year 1 of C100 Biological Sciences
 - Year 1 of C102 Biological Sciences with Cell Biology
 - Year 1 of C103 Biological Sciences with Environmental Resources
 - Year 1 of C104 Biological Sciences with Microbiology
 - Year 1 of C105 Biological Sciences with Molecular Genetics
 - Year 1 of C107 Biological Sciences with Virology
- Year 1 of ULFA-C1A1 Undergraduate Biological Sciences (MBio)
- Year 1 of ULFA-C113 Undergraduate Biological Sciences (with Placement Year)
- Year 1 of ULFA-C1A5 Undergraduate Biological Sciences with Industrial Placement (MBio)
- UBSA-C1B9 Undergraduate Biomedical Science
 - Year 1 of C1B9 Biomedical Science
 - Year 1 of C1B9 Biomedical Science
 - Year 1 of C1B9 Biomedical Science
- ULFA-C1A3 Undergraduate Biomedical Science (MBio)
 - Year 1 of C1A3 Biomedical Science
 - Year 1 of C1B9 Biomedical Science
- Year 1 of ULFA-C1A7 Undergraduate Biomedical Science with Industrial Placement (MBio)
- ULFA-CB18 Undergraduate Biomedical Science with Placement Year
 - Year 1 of CB18 Biomedical Science with Placement Year
 - Year 1 of CB18 Biomedical Science with Placement Year
 - Year 1 of CB18 Biomedical Science with Placement Year
- UIPA-C1L8 Undergraduate Life Sciences and Global Sustainable Development
 - Year 1 of C1L8 Life Sciences and Global Sustainable Development
 - Year 1 of C1LA Life Sciences and Global Sustainable Development: Biological Sciences
 - Year 1 of C1LB Life Sciences and Global Sustainable Development: Ecology

- Year 1 of ULFA-B140 Undergraduate Neuroscience (BSc)
- Year 1 of ULFA-B142 Undergraduate Neuroscience (MBio)
- Year 1 of ULFA-B143 Undergraduate Neuroscience (with Industrial Placement) (MBio)
- Year 1 of ULFA-B141 Undergraduate Neuroscience (with Placement Year) (BSc)