

# LF136-30 Practical skills for biologists

## 1

**24/25**

**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

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## 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 assessed in a synoptic way.

**Tutorial sessions:**

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

To identify and support individual pastoral care needs and introduce the referral pathway.

**Laboratory sessions:**

These sessions focus on the teaching of fundamental laboratory skills and techniques, be able to follow protocols for generating good quality data, interpretation and analysis.

**Quantitative skills sessions:**

These sessions focus on the teaching of analytical techniques to interpret data generated in the lab sessions.

## Module aims

Students will gain experience with basic lab techniques, learn to acquire data, analyse 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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Laboratory sessions:

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Quantitative skills sessions:

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## Learning outcomes

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

- Research given topics in the primary and peer-reviewed literature and consolidate relevant information to present a well-structured scientific writing
- To develop and 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 hypothesis-driven simple experiments, with due regard to appropriate accuracy and detail
- Develop an understanding of the need for statistical analysis when interpreting biological data
- Understand the basic principles of modelling biological populations
- Understand the importance of good laboratory practice
- Understand the relevance of presenting data professionally

## Subject specific skills

- Research given topics in the primary and peer-reviewed literature and consolidate relevant

information to present a well-structured scientific writing

- To develop and deliver oral presentations where the content accuracy and the delivery style will be appropriate to the topic and audience
- Develop familiarity with basic hands-on technical skills and good laboratory practice

## Transferable skills

- Communication
  - Critical thinking
  - Digital literacy
  - Information literacy
  - Professionalism
  - Problem solving
  - Teamwork
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## Study

### Study time

| Type                         | Required                     |
|------------------------------|------------------------------|
| Tutorials                    | 18 sessions of 1 hour (6%)   |
| Practical classes            | 12 sessions of 2 hours (8%)  |
| Supervised practical classes | 12 sessions of 6 hours (24%) |
| Private study                | 186 hours (62%)              |
| Total                        | 300 hours                    |

### Private study description

Preparations for labs, quant skill workshop and tutorials and completion of coursework

### Costs

No further costs have been identified for this module.

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## Assessment

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

### Assessment group A

|  | <b>Weighting</b> | <b>Study time</b> | <b>Eligible for self-certification</b> |
|--|------------------|-------------------|--|
| Lab report 2   | 9%               |                   | Yes (extension)                        |
| Lab report 2 (lab report 1 is formative)   |                  |                   |  |
| Lab report 3   | 9%               |                   | Yes (extension)                        |
| Lab report 3 (lab report 1 is formative)   |                  |                   |  |
| Lab report 4   | 9%               |                   | Yes (extension)                        |
| Lab report 4 (lab report 1 is formative)   |                  |                   |  |
| Hands-on technical skills  | 6%               |                   | No                                     |
| Skills assessed in the lab classes, each on a pass/fail basis. The mark awarded will be the percentage of those passed.                    |                  |                   |  |
| Complex lab skills   | 9%               |                   | No                                     |
| Skills assessed in the lab classes, each scored on a scale of competence.  |                  |                   |  |
| Lab Safety   | 6%               |                   | No                                     |
| Skills assessed in advance of the lab classes, each on a pass/fail basis. The mark awarded will be the percentage of those passed.         |                  |                   |  |
| Hands-on quantitative skills   | 8%               |                   | No                                     |
| Skills assessed in the lab classes, each scored on a scale of competence.  |                  |                   |  |
| Scientific writing   | 8%               |                   | Yes (extension)                        |
| Scientific writing to assess ability to synthesise information from different sources  |                  |                   |  |
| Oral presentation  | 8%               |                   | No                                     |
| Oral presentation to assess ability to synthesise information from different sources   |                  |                   |  |
| Poster presentation  | 8%               |                   | No                                     |
| Poster presentation to assess ability to synthesise information from different sources   |                  |                   |  |
| Quantitative skill assessment  | 20%              |                   | Yes (extension)                        |
| Quantitative skill assessment to assess knowledge of data analysis techniques not assessed in lab reports or continuously in the workshops |                  |                   |  |

## Assessment group R

|                               | <b>Weighting</b> | <b>Study time</b> | <b>Eligible for self-certification</b> |
|-------------------------------|------------------|-------------------|--|
| No reassessment               | 100%             |                   | No                                     |
| This module is not reassessed |                  |                   |  |

## Feedback on assessment

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

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## Availability

## Courses

This module is Core for:

- Year 1 of UBSA-C700 Undergraduate 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)
- Year 1 of UBSA-3 Undergraduate Biological Sciences
- 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)
- Year 1 of UBSA-C1B9 Undergraduate 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)
- Year 1 of ULFA-CB18 Undergraduate Biomedical Science with Placement Year
- Year 1 of UIPA-C1L8 Undergraduate Life Sciences and Global Sustainable Development
- 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)