

FP092-30 Foundation Mathematics and Statistics for Biology and Chemistry

26/27

Department

Warwick Global Academy

Level

Foundation

Module leader

Albina Gale

Credit value

30

Module duration

25 weeks

Assessment

50% coursework, 50% exam

Study location

University of Warwick main campus, Coventry

Description

Introductory description

This module develops essential mathematical and statistical skills for analysing problems across science and the life sciences. Students will learn how to apply core mathematical processes and statistical methods to practical and theoretical questions, building confidence in quantitative reasoning. The focus is on real-world applications, with problems drawn from biology, chemistry, health sciences, and other related disciplines. By the end of the module, students will be able to apply a range of mathematical and statistical techniques, interpret data critically, and communicate solutions clearly in scientific contexts.

[Module web page](#)

Module aims

This module focuses on developing your mathematical and statistical skills to analyse real-world problems which where appropriate will be taken from Life Sciences. You will develop your understanding of mathematical processes so that you become confident in their use and application. By the end of the module, you will be confident in and able to use mathematical and statistical techniques in the analysis and solution of real-world problems.

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.

Mathematics:

Numbers and Units,
basic algebraic techniques,
number sequences,
graphs,
coordinate geometry,
exponentials and logarithms

Probability and Statistics:

Data presentation,
Measures of central tendency,
Measures of dispersion,
Correlation & Regression,
Basic probability,
probability distributions,
Inferential statistics including t-tests and goodness of fit testing,
use of statistical software

Learning outcomes

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

- Apply mathematical and statistical knowledge to solve a variety of mathematical and real-world problems, selecting appropriate algebraic tools and statistical models where necessary, implementing them precisely and rigorously to arrive at correct numerical or algebraic results and utilising technology effectively to simplify calculations.
- Undertake basic analysis of data by calculating summary statistics and representing data graphically, understanding the suitability and limitations of different statistical measures and graph types, interpreting the meaning of calculated results within a given context and using them to inform decision-making.
- Use fundamental principles of probability to quantify uncertainty and solve problems involving probability distributions.
- Present written mathematical and statistical work clearly and logically.

Indicative reading list

[Reading lists can be found in Talis](#)

Interdisciplinary

Students will have opportunities to draw on knowledge and skills acquired within the different

modules on their pathway.

International

All students are international, representing a wide range of cultural, linguistic, and educational backgrounds. They bring diverse experiences and perspectives, enriching discussion and supporting the development of intercultural awareness. Examples for analysis and evaluation are drawn from a variety of countries, ensuring that teaching and learning are embedded in an international context.

Subject specific skills

- construct and present mathematical and logical arguments;
- develop numeracy skills;
- understand, interpret and extract information from data presented in various forms;
- convert real-world problems into mathematical problems;
- solve mathematical and statistical problems using appropriate techniques including using suitable technology when appropriate;
- clearly present solutions to mathematical and statistical problems using appropriate symbols and terms.

Transferable skills

- problem solving skills
 - analytical and logical thought processes
 - appropriate use of suitable technology
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Study

Study time

Type	Required
Lectures	5 sessions of 1 hour (2%)
Seminars	25 sessions of 4 hours (33%)
Online learning (independent)	8 sessions of 1 hour (3%)
Private study	127 hours (42%)
Assessment	60 hours (20%)
Total	300 hours

Private study description

Extra-class reading of books and articles in preparation for lectures and seminars. Home assignments. Worksheets. Flipped learning including pre-recorded videos.

Costs

No further costs have been identified for this module.

Assessment

You must pass all assessment components to pass the module.

Assessment group C

	Weighting	Study time	Eligible for self-certification
Assessment component			
Class Test	30%	18 hours	No
Closed book class test with questions testing the Mathematics content studied to that point.			

Reassessment component is the same

Assessment component			
Statistical Report	20%	12 hours	Yes (extension)
A statistical report analysing a data set either collected in a laboratory or provided from a real world context. The analysis carried out using suitable software e.g. SPSS			

Reassessment component is the same

Assessment component			
Final Examination	50%	30 hours	No
A final examination testing material from across the course.			

- Answerbook Gold (24 page)
- Students may use a calculator

Weighting

Study time

Eligible for self-certification

Reassessment component is the same

Feedback on assessment

Written feedback via Tabula

[Past exam papers for FP092](#)

Availability

There is currently no information about the courses for which this module is core or optional.