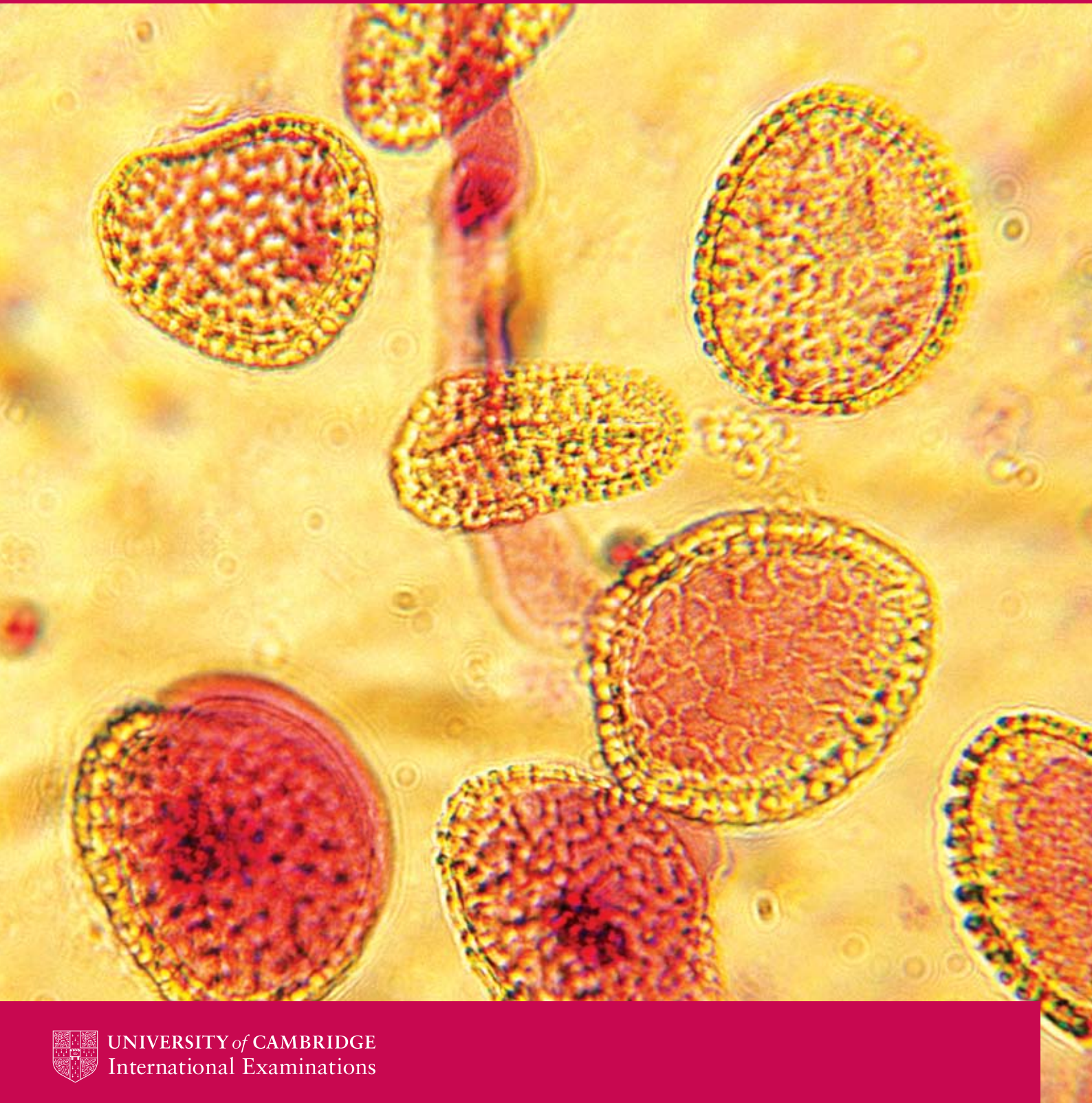


Syllabus Outline

Cambridge Pre-U
BIOLOGY

Cambridge
Pre-U

For examination in 2010, 2011, 2012



UNIVERSITY of CAMBRIDGE
International Examinations

Cambridge Pre-U Overview

Cambridge Pre-U is an exciting qualification for 16-19 year olds who want to go to university. It equips students with the skills they need to make a success of their undergraduate studies:

- a solid and coherent grounding in specialist subjects at an appropriate level;
- the ability to undertake independent and self directed learning;
- the ability to think laterally, critically and creatively and communicate effectively.

The Cambridge Pre-U Principal Subject in Biology is a stand-alone qualification, with all components assessed at the full Cambridge Pre-U standard at the end of a two-year programme of study. There are no unit retakes. Cambridge Pre-U Principal Subjects are certificated separately. They are fully compatible with A Levels and may be taken in combination with them.

Reporting of Achievement

Achievement is reported on a scale of nine grades: Distinction 1, 2 and 3, Merit 1, 2 and 3 and Pass 1, 2 and 3. The Distinction 3 standard is aligned to that of Grade A and the Pass 3 is aligned to that of Grade E at A Level. Distinction 1 reports achievement above the new A* grade. The intention is to differentiate more finely and extend reporting at the top end, while keeping the grading scale accessible to the full range of ability currently achieving passes at A Level.

UCAS Tariff Points

The table shows the UCAS tariff awarded to each Cambridge Pre-U Principal Subject Grade and how this compares with the tariff for A Level.

The tariff reflects the additional content within each syllabus and the linear assessment (terminal examinations at full Pre-U standard).

Universities which normally ask for three A grades at A Level might therefore consider Cambridge Pre-U offers involving a combination of Distinction 3 and Merit 1. Other offers may include asking for a Merit 2 in place of a B, Merit 3 or Pass 1 for a C, Pass 2 for a D and Pass 3 for an E.

Cambridge Pre-U Band	Cambridge Pre-U Grade	Cambridge Pre-U Principal Subject Tariff	Equivalent A Level Tariff
Distinction	1	tbc	n/a
	2	145	(A*) 140
	3	130	(A) 120
Merit	1	115	
	2	101	(B) 100
	3	87	
Pass	1	73	
	2	59	
	3	46	(E) 40

For more details, please go to www.cie.org.uk/qualifications/recognition.

Common characteristics of Cambridge Pre-U syllabuses

- **Design:** focused on the development of high level knowledge, understanding and skills to prepare for university and beyond, through extensive consultation with teachers/students and universities.
- **Stretch:** built into syllabus content (380 guided learning hours and challenging concepts), assessment (open ended questions) and grading outcomes (finer differentiation at the top end).
- **Innovation:** new approaches to subjects, greater freedom in subject combination, new topics, new methods of delivery and new forms of assessment.
- **Progression in learning:** Cambridge Pre-U builds on prior knowledge gained at 14-16, where appropriate and develops broad generic skills (independent study and research skills). Students are better prepared for undergraduate study.
- **Linearity:** assessment at the end of the course makes for greater coherence in teaching and learning.

Feedback from Schools



Increased focus and motivation in year 12 pupils

Richer, more coherent educational experience

Encourages wider reading

More independent inquiry and learning

Opportunity to develop and pursue own academic interests

Greater scope for upper ability pupils to distinguish themselves

More time and support available for lower ability pupils

Greater maturity at examination time



Cambridge Pre-U Biology Scheme of Assessment

Four compulsory, externally set and marked components, plus the completion of matriculation 'can-do' tasks.

Paper 1. Multiple Choice questions.

Paper 2. Structured Short-answer questions.

Paper 3. Long Answer questions, involving data analysis, comprehension and synoptic analysis and argumentation.

Paper 4. Practical skills of planning, analysis and evaluation are assessed in a laboratory, testing skills in measurement, manipulation, observation and presentation of data and observations.

All the papers test candidates on the content of the whole syllabus. The examination encourages a coherent approach and a joined up understanding of the subject.

Teachers should note a greater than 50% weighting for skills (including handling information, solving problems, practical, experimental and investigative skills). Teachers' schemes of work, and the sequence of learning activities, should reflect this balance.

Individual components cannot be retaken.

Examinations take place at the end of the two-year course and a single grade is awarded.

Curriculum content

An evolutionary paradigm underlies an exciting and relevant syllabus, introducing new cutting edge topics. The curriculum content is divided into six sections.

Origin and fundamentals of life

The origin of life
The chemicals of life
The earliest cells and fundamental aspects of cell functioning

Energy

ATP
Biochemistry of respiration
Photosynthesis

Evolution of the eukaryotic cell

Cell structure and function
Genes and protein synthesis
Cell replication
Evolution of multicellular organisms
Transport systems of multicellular organisms
Nutrition of mammals as an example of multicellular organisms
Sensitivity to stimuli in multicellular organisms
Mammalian immunity and monoclonal antibodies

Mechanisms of evolution

Meiosis and genetics and the mechanisms of evolutionary change
Reproduction

Organisms in the environment

Evolutionary and Conservation Ecology

Biotechnology

Gene Technology

Part of what makes Cambridge Pre-U Biology distinctive, is the context in which it should be taught. CIE expects candidates to put Biological topics in an evolutionary context. In other words, they should be able to follow the story of Life on Earth. This syllabus reflects the view shared by many biologists that 'Nothing in Biology makes sense except in the light of evolution'. (Theodosius Dobhansky)

Cambridge Pre-U Biology places considerable emphasis on the understanding and use of scientific ideas and principles in a variety of situations, including those which are new to candidates. Programmes of study based on this syllabus should feature a variety of teacher-centred and pupil-centred learning experiences designed to enhance the development of skill and comprehension. This approach focuses teachers and learners on development of transferable life-long skills relevant to today's increasingly technological environment. It also prepares candidates for an assessment that, within less familiar contexts, tests expertise, understanding and insight. A Scheme of Work should be produced by teachers to reflect the sequence and repertoire of learning opportunities that they feel are most appropriate for their candidates.

Support and Resources

CIE offers a programme of Cambridge Pre-U INSET training for teachers accompanied by support materials on a dedicated Cambridge Pre-U website.

Full syllabus details are at www.cie.org.uk/cambridgepreu

Specimen assessment materials are available from: international@cie.org.uk

