Royal Society of Biology

SUPPORTING THE ADVANCEMENT OF SKILLS AND EDUCATION IN THE BIOSCIENCES

THE DEGREE ACCREDITATION HANDBOOK

About the Royal Society of Biology

The Royal Society of Biology is a single unified voice for biology: advising Government and influencing policy; advancing education and professional development; supporting our members; and engaging and encouraging public interest in the life sciences. With more than 15,000 individual members and almost 100 member organisations, the Society represents a significant and diverse membership including students, practising scientists, industry leaders, academics and interested non-professionals.

The Royal Society of Biology is committed to promoting biology as a subject of choice to students in schools, colleges and universities. Through accreditation, we support and recognise excellence in biology teaching; champion a biology curriculum that challenges students and encourages their passion for biology; support young scientists through higher education; and provide career guidance at all levels. We offer a range of tools to assist the professional development of our members working in education; we respond to education policy consultations; and we contribute to curriculum development. Through partnership with other leading science organisations, we aim to increase our influence over the advancement of biology education.

For information about the Royal Society of Biology see **www.rsb.org.uk**

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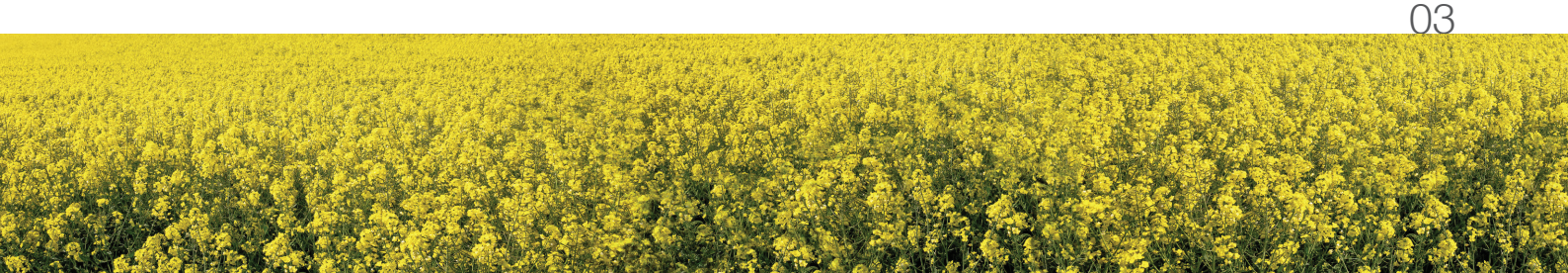


Introduction aims and purpose of accreditation

"Accreditation" by the Royal Society of Biology follows an independent and rigorous assessment of degree programmes which contain a solid academic foundation in biological knowledge and key skills, and prepare graduates to address the needs of employers. The accreditation criteria require evidence that graduates from accredited programmes meet defined sets of learning outcomes, including subject knowledge, technical ability and transferable skills. Degree accreditation by the Royal Society of Biology aims to: foster the development of key learning outcomes and recognise the excellence that exists in giving graduates the skills, knowledge and experience to develop as bioscientists, including their contribution to global needs.

The accreditation process does not seek to define a highly specified curriculum, or an approach to delivery. Accreditation is built on the foundations of the relevant QAA Benchmark Statements as a general description about the broad minimum standards of achievement, while focussing on those areas that the Royal Society of Biology believes fully prepare bioscience graduates for their place in the UK and the world.

The biosciences are predominately a practical set of subjects which require a hands-on approach to learning. This means that laboratory or field skills development and experience are important components of bioscience degrees. It also means that problem solving, innovation and creativity are important characteristics of how biological subjects are understood and applied. To achieve accreditation, some form of test of the integration of that knowledge, those skills, and the ability of a graduate to devise interpretations which explain natural phenomena, based on experimental approaches, must be made. To that end, a central principle of accreditation is that the intended learning outcomes of a programme are linked to assessment.

The scale of biodiversity, in species and habitat, and the complexity of the cell, its molecules and reactions are so diverse that many specialisms exist within the general field of biology. These can be simplified into a few general groups: the study of the environment and biosphere; organismal biology including an understanding of ourselves and our biological relationships; the study of the cell and sub-cellular processes; and the specific study of the human being in all these aspects. Consequently, biologists may be studying atoms and molecules or populations and environments, in many different contexts and situations; all complicated by the extent of natural variation. Moreover, biology now utilises a vast range of scientific methods from the traditional to the highly technical, involving complex equipment and information technology.

The rapid advance of biology in recent times means that biologists must be equipped with the skills necessary for self-learning and the ability to apply basic principles of maths, chemistry, physics and information technology to their learning and career. Indeed, it is the breadth and application of such skills, including the ability to deal with complexity and variation, that makes biologists highly employable both within and beyond their chosen field.

Accreditation is based on the assumption that the course can be defined as 'biology' or a sub-section or specialism within biology. It may not be appropriate for courses where the overall objective of the course is not biology per se, but where biology may be a component (e.g. pharmacy, health-care professions). Such courses may not encompass all the necessary intended learning outcomes for a biology degree, and may be accredited by other professional or statutory bodies.

The accreditation of degrees in the biosciences is based on six overarching learning outcomes. All of these outcomes require an understanding of the context and an appreciation of how the living world operates. They are underpinned by the QAA Bioscience Benchmark Statement and by reference to other Benchmarks (Biomedical Sciences and Agriculture), which should be taken as the foundation documents on which the general subject specific requirements are built.

The Royal Society of Biology is keen to support all bioscience programmes that aim to meet the

criteria for accreditation. For established programmes, the learning outcomes attained by graduates will be judged. However, we also encourage Higher Education Institutions (HEIs) to submit new programmes for accreditation, where there are no graduates as yet. Under these circumstances, the accreditation process will include a review of the programme documentation and a site visit before the first cohort of students graduate. The Society may grant interim accreditation pending first cohort graduation, with full accreditation occuring afterwards, if appropriate.

HEIs with relevant programmes in development should refer to Appendix F, and contact the Accreditation Team to discuss interim accreditation.

Accreditation of degree programmes by the Royal Society of Biology aims to:

— Recognise academic achievement

— Drive up standards of learning and teaching in the biosciences

— Enhance competitiveness for students in a crowded global jobs market

— Provide industry with an assurance of the level of employability skills and subject relevant bioscience skills provided by a degree

— Maintain and improve the UK's position as a premier location to develop the life scientists of the future

Characteristics of accredited programmes

Accredited degree programmes will be highly regarded within the learning and teaching community and by employers. Accredited programmes will be delivered by subject experts and produce graduates who will excel in their chosen field.

Subject knowledge

Graduates from accredited programmes will have the specialised knowledge of their chosen discipline plus core knowledge of the biosciences, including cell biology, an appreciation of biodiversity[1] and the concepts and application of the theory of evolution. Their knowledge of biology will be underpinned by appropriate competence in chemistry, physics and mathematics, including statistics[1].

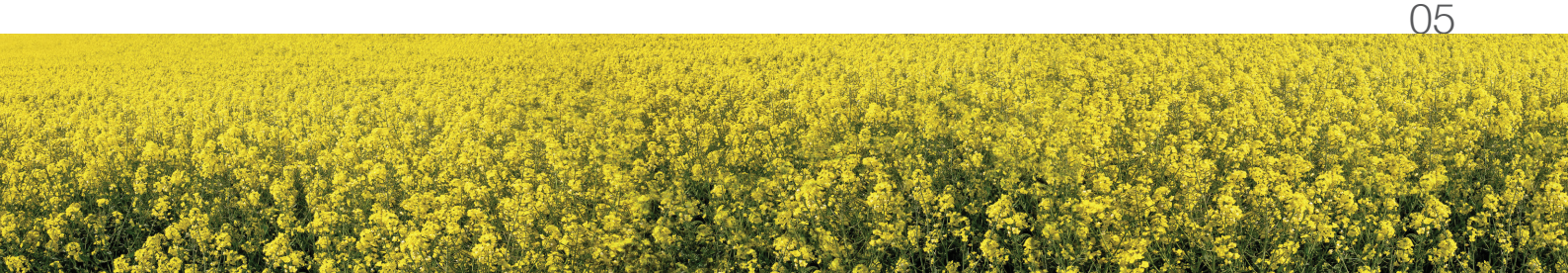
Technical and transferable skills

Accredited programmes will incorporate learning outcomes associated with key skills in laboratory and/or field work thereby providing a high standard of competence. Transferable graduate skills such as communication, problem solving and team working will be integral to the programmes. These will be taught and assessed at all levels, providing a gradual development of ability and self-confidence in students, culminating at graduation. Students will have been encouraged and supported to develop their creativity, innovation and entrepreneurship.

Independence, original thinking and interpretation

All graduates will have experienced self learning and will have satisfactorily completed a substantial final year project (a "capstone" experience) demonstrating independence of thought and analysis of data.

[1] The extent to which these subjects are studied in depth will vary by programme (e.g. a degree in biochemistry will have a greater emphasis on physical science, whereas a degree in environmental science will include more detail on biodiversity etc.).



Process of accreditation assessment

The accreditation assessment process is usually achieved in three stages and will normally take a period of six to 12 months. This is outlined in Figure 1, with further information on the method of submission in Appendix A.

For applications to be assessed in the first or second half of the academic year deadlines for formal submission are usually 1st February and 1st September respectively. Applications will be considered as soon as possible following receipt of the submission. If the application appears to meet the requirements of stage one as described below then the site visit will be arranged by mutual convenience of the Society and the HEI. Please note that students and recent graduates (if applicable) need to be present during the site visit.

01

Stage One

HEIs are required to submit, electronically, evidence to the Society in support of their application. Full details are listed in Appendix A. This process, designed to be brief and not to replicate existing paperwork or to be unduly bureaucratic, outlines how the institution believes that it achieves the intended learning outcomes as stipulated in the accreditation criteria.

The application will be assessed by an Accreditation Assessment Panel, which will produce a Stage One Report summarising the assessment. This will be sent to the HEI for fact-checking and as a guideline for questions likely to arise at stage two. HEIs will have the opportunity to submit additional evidence following receipt of this report.

If the programme is deemed suitable, the Accreditation Assessment Panel will recommend that the application progresses to assessment stage two. However, in some cases, the panel may feel that the programme is not appropriate for further assessment and recommend it is not accredited.

02

Stage Two

The Accreditation Assessment Panel will carry out a site visit to evaluate the HEI's facilities, speak to students about their learning experience, and hold face-to-face discussions with the applying HEI. A provisional recommendation on accreditation will be provided during the site visit where appropriate. Outcomes of stage two will be summarised in the Stage Two Report, which will be sent to the HEI for fact-checking.

03

Stage Three

The Accreditation Assessment Panel will make a recommendation to the Royal Society of Biology Accreditation Committee to award or withhold accreditation. Institutions will be kept informed of likely timescales involved for ratification to occur.

The Accreditation Assessment Panel may recommend that:

1. The programme should be accredited
2. The programme should be accredited subject to conditions and/or recommendations
3. The programme should not be accredited

Accreditation awarded

Following a successful assessment, accreditation will normally be awarded for a period of five years. The Royal Society of Biology will list accredited degree programme titles, HEIs, and UCAS codes on its website, and provide a link to the HEIs' web pages. HEIs will also be asked to provide graduate destination data for all accredited programmes on a yearly basis. The assessment reports produced by the Accreditation Assessors will not be made publically available.

For more information on publicity guidelines following accreditation, please see Appendix E.

Accreditation subject to conditions and recommendations

If accreditation is associated with conditions, a period of six weeks from the date the Stage Two Report is received by the HEI will normally be allowed for amendments to be made. A Stage Three Report will be submitted from the HEI to the Accreditation Assessment Panel, providing any supporting documentation. If internal approval is required for the amendments, then it would normally be expected within the six weeks. If internal approval is required for the amendments, then it would normally be expected that approval has been given before Accreditation is granted.

Accreditation withheld

If the programme does not meet the accreditation criteria, guidance will be provided by the Royal Society of Biology on how the programme could meet the criteria. The programme will not normally be reconsidered for accreditation until a period of 12 months has elapsed from the date the Stage Two Report is received by the HEI. For reconsideration, a full report will be required from the programme organisers explaining and documenting changes made to address each of the points made by the Accreditation Assessment Panel. If internal approval is required for the amendments, it would normally be expected that approval has been given before the programme is reconsidered. The Accreditation Assessment Panel shall decide whether or not a further full panel site visit, light touch visit, or no visit, is required in order to make a formal recommendation to the Royal Society of Biology Accreditation Committee.

The Royal Society of Biology maintains an appeals procedure for HEIs that wish to challenge specific decisions, where they feel that an assessment was not conducted as it should have been and in a fair and transparent manner. HEIs cannot appeal against a judgement, only aspects of process.

Appeals will be considered at the discretion of the Royal Society of Biology Accreditation Committee. Further details about the appeals process are available on request.

Interim accreditation

Interim accreditation is available to HEIs for recently validated programmes where there have been no graduate awards. See Appendix F.

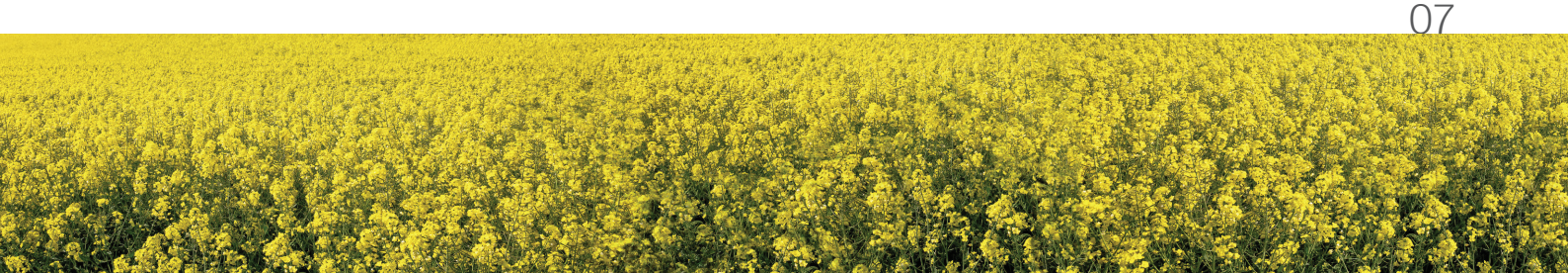
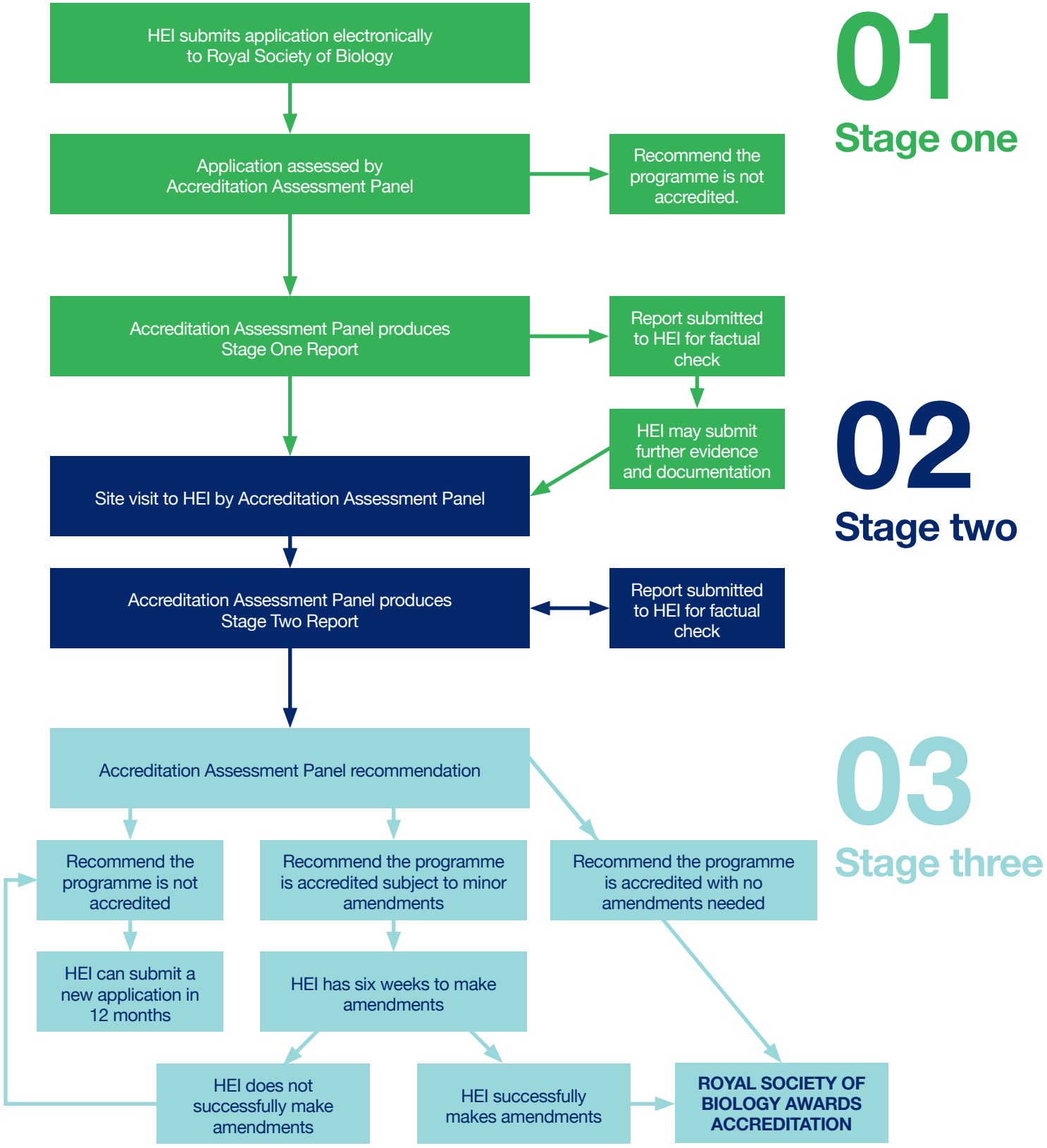


Figure 1 – Process of Accreditation



Costs of accreditation

Details regarding the costs of accreditation can be found on the Society's website **www.rsb.org.uk/costs**, and on the formal expression of interest form.

Assessment fee

The fee covers all expenses associated with the assessment and visit except for overnight accommodation for the assessment panel. HEIs will be required to book accommodation, including breakfast, for the panel members in a suitable nearby hotel for the evening before the site visit. Please note, if the application is unsuccessful the assessment fee is a non-returnable payment.

Accreditation fees

The fees for accreditation will be charged on an annual basis according to the number of programmes submitted and as agreed by the Society. The Society will consider the level of work required for the application, the number of students and the complexity of programmes in order to ensure, as far as possible, that costs are representative and equitable. The first year's fee will be required to be paid once accreditation has been awarded and formally ratified by the Accreditation Committee.

Accreditation Assessment Panel membership and role

The Accreditation Assessment Panel considers the evidence submitted by HEIs through an initial application and site visit and provides a recommendation to the Royal Society of Biology Accreditation Committee as to whether the degree programme(s) should be accredited. The assessment is not simply a tick-box exercise and requires academic judgement.

An Accreditation Assessment Panel will include a panel chair with experience of chairing, approvals, and quality assurance, and at least one other panel member. Accreditation Assessment Panel members are selected based on their experience and subject area expertise. The Royal Society of Biology provides training for panel members, administrative support, and a panel secretary for the site visit.

The size and make-up of an Accreditation Assessment Panel may depend on the type of programme(s) being accredited. Members of the panel are expected to be up to date with current practice in higher education with a focus on quality assurance, programme design and content.

Members of the Accreditation Assessment Panel are expected to:

— Attend a Royal Society of Biology Accreditation Assessment Panel training event

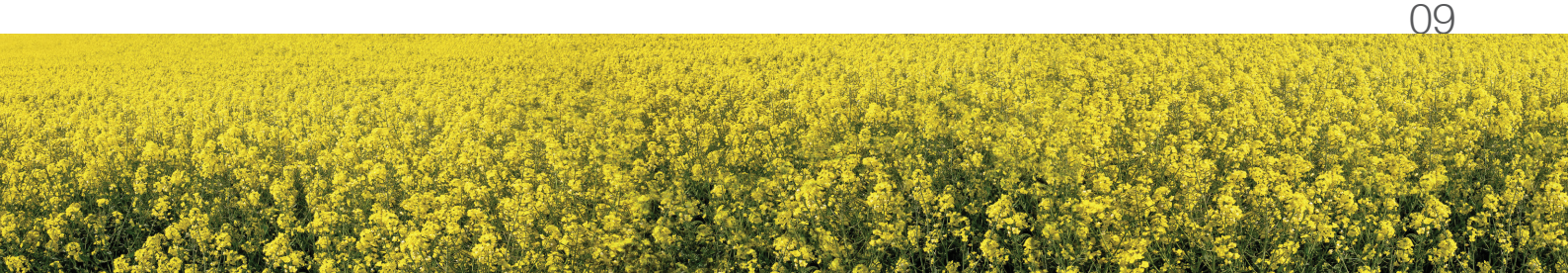
— Read all initial documentation submitted by the applying HEI and work with the chair to complete the Stage One Report

— Take part in a pre-meeting with other panel members

— Attend a stage two site visit to the applying HEI

— Work with the panel chair to draft a Stage Two Report for submission to the Accreditation Committee

Further information on the guidelines for panel chairs and members can be found in Appendix C.



Changes made to degree programmes before the date of re-accreditation

Programmes of study evolve to reflect the latest developments in the subject and to meet the needs of students, applicants and external influences such as professional and statutory bodies and policy changes. Variations in human and physical resources may also bring about programme changes.

The HEI must inform the Royal Society of Biology immediately of any significant planned changes to the accredited programme(s) which occur during the period of accreditation, as well as providing a clear rationale for the change. The Royal Society of Biology reserves the right to remove accreditation from a degree programme if significant changes are made to the programme that deviate from the learning outcomes defined by the Society.

Re-accreditation processes

HEIs that have an accredited degree programme will be contacted by the Royal Society of Biology towards the end of the period of accreditation to invite them to submit their programme for re-accreditation. Where there are significant changes to a programme within the accreditation period, the HEI may be asked to re-submit earlier.

Re-accreditation will follow the three-stage process of accreditation, but here the focus will be on changes made to the programme, its learning outcomes, and best practice.

Criteria for accreditation

To achieve accreditation for a programme, HEIs will need to provide robust evidence in support of their application, which will be judged by peer review against the standard metrics listed below. The evidence should show how the intended learning outcomes are being achieved through appropriate assessment strategies.

1. A graduating level capstone experience which includes the analysis and critical evaluation of data within an independently produced piece of work

The final year project will be:

i. An extended piece of enquiry-based work, relevant to the degree, with a justified approach that effectively communicates the research outcomes

ii. Underpinned by a range of relevant sources and show appropriate recognition of health, safety and ethical considerations

iii. Contextualised, and show recognition of the provisional nature of knowledge, building to a conclusion

iv. Based on the processes of critical thinking, challenge and evaluation

2. Demonstration of the acquisition of technical skills and familiarity with the practical environment

i. Students learn in a hands-on, practical environment, and are trained in the technical skills appropriate to their main subject interest

ii. Skill acquisition is a progressive process

iii. There is a list of the core, assessed, technical skills used in the laboratory and/or field which form the foundation for the degree(s)

iv. There is evidence of competency in the core technical skills for all students on the programme

3. The development and use of transferable graduate skills

i. Graduates will have the basic skills of word processing, use of spreadsheets, and presentation software

ii. Graduates will be able to find, cite and use information

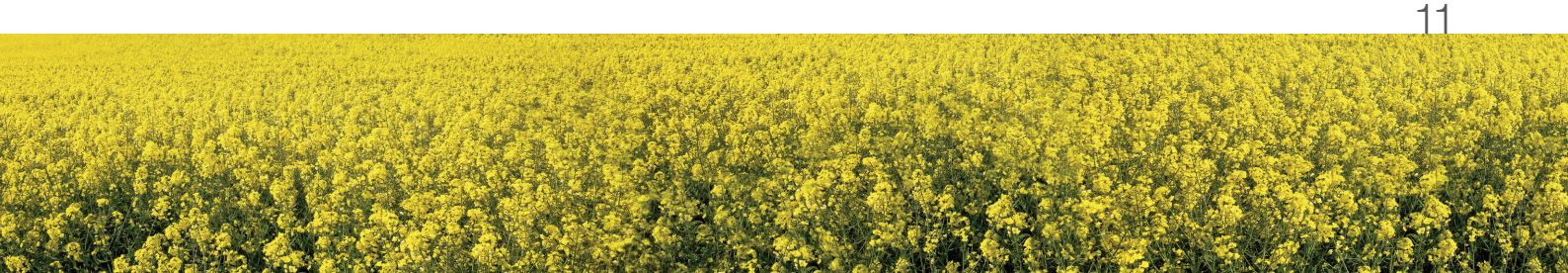
iii. There will be clear evidence that students are given the opportunity to consider and approach problems critically, confidently and independently

iv. Students will communicate through both oral and written approaches and to a range of audiences

v. There will be an approach to the development of teams, including leadership

vi. There will be evidence of acquisition of general management skills including project management

vii. Ethical and regulatory issues are addressed



4. A foundation in mathematics, statistics, chemistry and physics within a biological context appropriate to the discipline

i. The coverage of chemistry and physics should be of sufficient depth and breadth to provide the necessary knowledge and understanding for students to appreciate and apply these subjects within a biological context

ii. The knowledge and appreciation of mathematical principles must be sufficient to support the understanding and application of key biological concepts and underpin problem solving at the theoretical and practical levels

iii. Graduates will be equipped with the knowledge and skills needed to handle variation at different levels

5. Specific skills and knowledge appropriate to the degree title

i. Bioscience graduates will have some general knowledge of the basic fundamentals of biology, including: an overview of biodiversity, the cell, basic genetics, the concept of evolution, biochemistry, molecular biology, and organismal biology

ii. Specialist degrees will adhere to the relevant recommendations within the QAA Subject Benchmark for Biosciences (with reference to other Benchmarks if appropriate)

iii. HEIs will have engaged with relevant Learned Societies to inform the curriculum

6. Developing Creativity and Innovation

i. Developing creativity and innovation in undergraduates is an implicit part of the student experience

ii. Students are given the opportunity and encouragement to apply original or unconventional ideas, to be imaginative, and to tackle problem solving using techniques designed to develop individual and group creativity

The Royal Society of Biology recognises the importance of creating environments that support and promote the development of creativity and innovation. At the same time, the Society recognises that these aspects of education are at a developmental stage in many programmes and this will be acknowledged in the application of the criteria (see Appendix B).

Subject specific criteria

The Royal Society of Biology recognises the general areas outlined in the Biosciences Benchmark Statement and the specific guidance in the Biomedical Sciences Benchmark. Accredited programmes will be expected to adhere to the guidance for the Typical Standard of the current Biosciences Benchmark and Biomedical Sciences Benchmark as appropriate, and to any subject specific guidance developed by the appropriate Learned Society written specifically for accreditation by the Royal Society of Biology. The subject specific criteria provided in the Benchmark Statements are not repeated here, but the assessment panel will refer to the Benchmarks when arriving at a recommendation.

Following consultation with stakeholders in the sector, accreditation spans three broad areas of biology, and applications must be made to a specific stream chosen by the institution. These are:

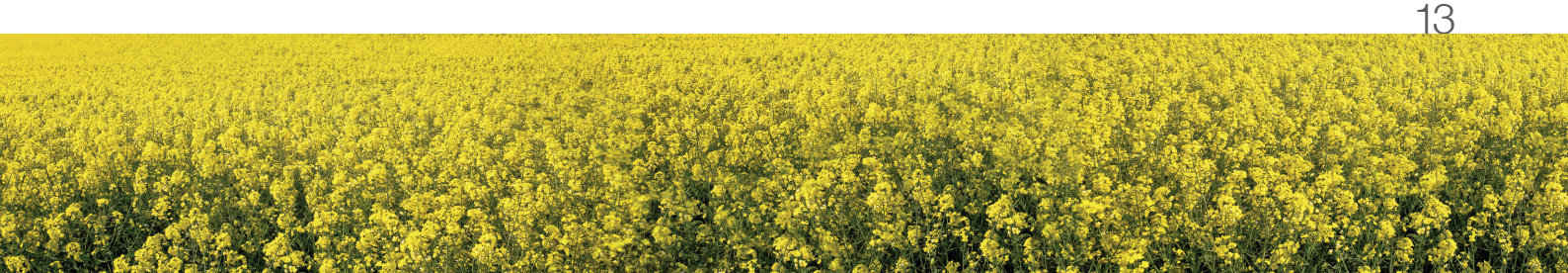
— Molecular Aspects of Biology

— Whole Organism Biology

— Ecological and Environmental Sciences

Specific criteria as described in the Benchmark Statement for each subject area are based on the learning outcomes specific to each of these areas and based primarily on the required skills of graduates entering job roles, as contributed by industry and relevant Learned Societies.

Some degree programmes may meet the criteria for accreditation only if a specific combination of units or modules is selected. Where this is the case it is only possible to award accreditation if the route or pathway that meets the criteria is formally designated with a unique title. It is quite possible that a programme may contain modules spanning the three streams mentioned above. If this is the case the HEI should apply to the stream which is most relevant to the programme. When a degree is accredited it will not be labelled with a specific stream, rather the streams enable programmes to be assessed on the subject specific criteria and to be assessed by the most appropriate assessors.



Appendix A – Process of applying for accreditation, including documentation to be provided for stage one assessment

Interested HEIs should first express their interest in seeking accreditation by completion of an Expression of Interest form, which can be downloaded from our website: **www.rsb.org.uk/apply-for-accreditation**

Documentation for the stage one review should be submitted to the Accreditation Team by 17:00 on the specified date. For guidance, please contact the Accreditation Team by emailing **accreditation@rsb.org.uk** or visiting **www.rsb.org.uk/apply-for-accreditation**

For each degree programme under consideration for accreditation, the following documents should be submitted electronically to the Royal Society of Biology:

1. Letter of intent. This should summarise how the programme meets the criteria for accreditation and characteristics of an accredited programme (see advice below). If accreditation for more than one programme is sought then one letter of intent may be submitted but it must make reference to each award.

   The letter of intent must include: a list of the degree titles for which accreditation is sought; a brief summary of the structure of the degrees and any options; a declaration of any articulation agreements if appropriate; the numbers of students enrolled on each degree programme; date of the last periodic review; six paragraphs summarising how the programme(s) meet each of the criteria; a brief explanation of how the submitted evidence is organised (e.g. a list of folders and their contents, this can be provided as a separate paper attached to the letter of intent if desired) and a summary of how the matrix or matrices have been completed (e.g. how many matrices and which degrees and criteria they cover), see Appendices B and G.

2. Completed accreditation matrices (see Appendices B and G)

3. Programme specifications

4. Programme details, including:

   — programme structure including optional routes (where only a specific route or pathway within the core degree programme will meet the accreditation criteria, the HEI should ensure that this is made clear)

   — knowledge and skills learning outcomes

   — list of acronyms and definitions used by the HEI

   — the learning, teaching and assessment strategy

   — student handbook(s)

5. Module (or unit) descriptors

6. Resource documents:

- an overview of the facilities available at the HEI relating to the programme
- brief CVs for the programme leader(s) and key academic staff involved in the programme

7. Internal or external reviews and reports. The following should be included, if available:
   - periodic review self-evaluation statement and recommendations
   - external examiners' reports covering the previous two years
   - a hyperlink to the most recent QAA or QAA (Scotland) Review, if applicable, e.g. Institutional Audit or Review (England, Northern Ireland and Wales), Integrated Quality and Enhancement Review (England and Northern Ireland), or Enhancement-led Institutional Review (Scotland)
8. Details of procedures and processes adopted within the HEI for consideration and approval of ethical issues and Home Office Licences, as relevant to the programme submitted for accreditation. Evidence of student exposure to and understanding of these processes
9. Destination data for recent graduates of the programme
10. Most recent summative assessments (e.g. examination papers, etc.); coursework assessments may be listed and/or described in student handbooks (item 4) or module descriptors (item 5), if so they need not be sent as a separate file

Where internal programme reviews contain the required information (i.e. items 3 to 10) it is perfectly acceptable to submit these.

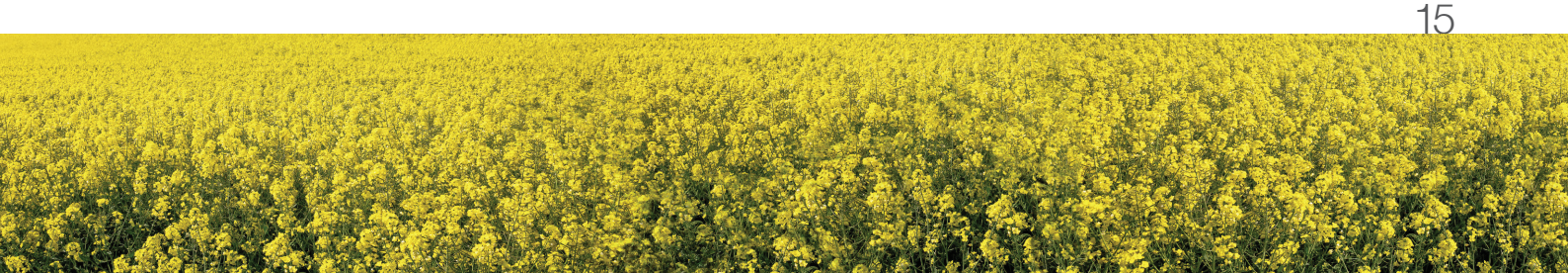
Wherever possible, online access to the HEI's e-learning facilities should be made available to the Accreditation Assessment Panel.

Accreditation matrix

All applying HEIs must complete at least one accreditation matrix. For simple programmes and where existing documentation fully describes both knowledge and skills intended learning outcomes (including where and how they are assessed) the HEI may feel it can present the evidence on one form. For a complex series of awards the HEI may consider it easier to present a matrix for each award or set of related awards. If existing documentation does not summarise where skills are taught and assessed additional tables as appendices to the matrix as described in Appendix B should be supplied.

For ease of reference, the matrix is based on the six criteria and closely follows the template for the Stage One Report used by assessors.

An internet address for the matrix template is provided in Appendix G.



Appendix B – Details and guidance on the accreditation criteria

Detail and guidelines on the criteria for accreditation

The Royal Society of Biology takes a learning outcomes based approach to accrediting degrees. Intended learning outcomes of a programme identify important learning requirements. They are understandable to students, achievable, and assessed. The Society recognises that a distinction can be made between "assessment" and "grading". The Society does not necessarily expect every assessment to be graded, and indeed encourages HEIs to consider whether or not grading is necessary in all cases (e.g. in the assessment of a technical skill). Advice on learning outcomes and assessment can be obtained from the Higher Education Academy **www.heacademy.ac.uk**.

1. A graduating level capstone experience which includes the analysis and critical evaluation of data within an independently produced piece of work.

The final year project is a capstone experience that brings together all the learning of the degree programme. Well-designed capstone experiences should integrate the skills and knowledge, and bring reflection and focus, to the whole of the degree experience. The project gives the opportunity for students to demonstrate the understanding and skills that they have developed during their degree programme. The range and variety of different types of final year project can develop transferable and subject specific skills, and enhance the employability of students. In particular, projects are seen as an opportunity for students to produce an independent piece of work and follow their own lines of enquiry where appropriate; this applies as much to team approaches as to individual projects.

There are many approaches to the capstone experience – each approach adopted for a project must demonstrably apply elements of the scientific method, and contain a significant research component involving data collection and analysis, to be suitable for accreditation. The Society takes the view that, within this accreditation framework, no particular type of final year project is more or less valuable to the outcomes of graduating students. Projects could fall into any of the following categories (or others):

— Laboratory and field-based projects

— Bioinformatics & computational projects

— Education projects

— eLearning/online projects

— Data analysis projects

This is not an exhaustive list, and there are many other ways in which students can demonstrate the outcomes. However, the project from an accredited programme cannot be just an extended survey of the literature, and must demonstrate the ability to critically evaluate new information.

Guidelines

A. The project should be an extended piece of work

The project tackles a central scientific question or issue in depth which the students take ownership of. All sections of the final year project should relate to the same issue rather than being a collection of unrelated essays. It should reflect a significant amount of work, equivalent to at least 25% of the final year.

B. The project must be enquiry-based
There are a great variety of approaches to research, but central to these is a desire to find out something, and relate it to a hypothesis. The research can be qualitative, quantitative, laboratory or design-based, or utilize one of many other scholarly approaches.

C. The project may be interdisciplinary, but should be directly relevant to the student's discipline
The project title and aims should be appropriate to the title of the degree awarded.

D. The project should be underpinned by a range of relevant sources
Sources that inform projects include textbooks, journal articles, surveys, interviews, experiments, original data, secondary data, websites, blogs, tweets, wikis, practice reports and direct personal experience. What is appropriate depends on the type of final year project and the purposes that the source is being used for. It should be recognised that all sources have strengths and limitations, and reflection on the limitations and validity of the sources used is part of the process.

E. The project should be contextualised and show a recognition of the provisional nature of knowledge
Final year projects need to be put in context through reference to the larger disciplinary and real-world contexts to which they are contributing.

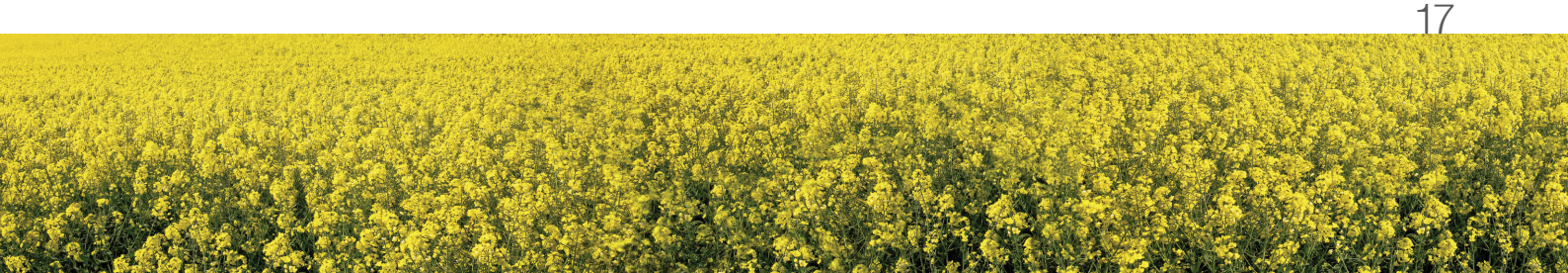
F. The project should be firmly based on the processes of critical thinking, challenge and evaluation
The types of project made available and the format of project reports must make it possible for the students to demonstrate how they have responded to challenge and produced an evaluative and critical report.

G. The project should have a clearly defined and justified approach
Final year projects should be based on systematic and rigorous methods, with clear explanation of how application of these can achieve the purposes and goals of the final submitted report.

H. The project builds up to its conclusions and, where appropriate, will have an element of reflective commentary, including recommendations for further work
This criterion may be evidenced by reference to the student handbook for the project and is most easily confirmed through provision of projects for the site visit.

I. The project should communicate the research outcomes appropriately and effectively
Final year projects should be presented in ways which clearly and effectively communicate the ideas to the intended audience.

J. The project should inculcate an appropriate understanding of health and safety good practice, an appreciation of ethical issues, and demonstrate an understanding of scientific integrity
The Society recognises that responsibility for health and safety, risk analysis and ethical approval lies with the institution; however the student should have been involved in these processes as they apply to their project (e.g. by preparing a draft risk assessment or ethics application which can be submitted as assessed coursework or included in the project report).



2. Demonstration of the acquisition of technical skills and familiarity with the practical environment

The biosciences are a collection of subjects which require significant technical and practical training to demonstrate the key principles and develop problem solving approaches which use an experimental approach. Different areas have their own requirements: while recognizing this diversity, the Royal Society of Biology seeks to ensure that all students learn in a hands-on, practical environment, and are trained in the technical skills appropriate to their main subject interest. Competency requires repeated learning and assessment of students' ability in these areas, whether working in a group or individually, and is a progressive process.

Guidelines

A. The HEI should have, and provide, a list of the core technical skills used in the laboratory and/or field which form the foundation for the degree subject, and what would be deemed appropriate as a level of competency

This list need not necessarily be produced bespoke for the Society if it is already present for example in validation documentation or student handbooks. The Society will need to feel confident that the HEI is explicit about which technical skills are being acquired by its students and where they are assessed. If it is felt necessary to produce a bespoke summary for the submission then this could be prepared as a simple table showing what skill and in which modules core technical skills are introduced or developed. The table ideally should evidence a progressive approach, where basic techniques and skills are built on during the course of the programme. The Society does not wish to prescribe exactly how this table is presented as the information may be available in the HEI's own documentation, but an example is provided below.

Skill	Level 4	Level 5	Level 6
Asceptic technique	Introduced in module BIO40001	Developed in module BIO50001	Applied in microbiology projects, module BIO60008
etc			

B. A description of how the technical skills are assessed

This can be briefly summarised in the submitted matrix (Appendix G). For example: "technical skills of individuals are assessed on a pass fail basis by laboratory demonstrators during the series of practical classes in modules BIO40001, BIO40002", or any other appropriate approach. HEIs may wish to discuss their approach with the Society who provide training courses for Society members on teaching, learning and assessment in the biosciences, and generate and share examples of good practice.

C. Evidence is provided of a basic competency in the core technical skills for all students on the programme, through the use for example of a record of individual achievement of skills, or identification of compulsory learning outcomes

While there must be evidence that students are trained and tested in the basic competencies, and achieve a threshold standard set by the HEI, and deemed appropriate say by employers, there is no requirement for all students to achieve a high level of competency in every technical skill. The Society is accrediting life science programmes, not professional training programmes.

D. The Society is seeking specifically to see evidence for the development of the appropriate technical skills appropriate for the subject, whether in the field, the laboratory or the workplace

A system for recording the development of skills and experience of the practical environment should be present within the programme. There is no defined core list of competencies which must be achieved. The pace of change is such that, except for the very basic operations (sample and specimen handling, pipetting, manipulation of solutions, measurement, use of basic equipment, the different forms of error), any significant list would be rapidly out-of-date. Different subject areas will have different requirements, perhaps informed by the work of the relevant Learned Societies, and which could be used as the basis for their submission.

3. The development and use of transferable graduate skills

As well as the basic skills of word processing, use of spread sheets, and presentation software, graduates should:

— be able to demonstrate how to find and distinguish/evaluate/cite appropriately valid sources of scientific and other information online and offline

— be able to collect, sort and protect/backup personal online resources, including issues of intellectual property

— demonstrate competence in the use of reference management systems

— understand and avoid plagiarism; understand the importance of personal integrity

— make the most of social media opportunities for networking responsibly

There should be clear evidence that students are given opportunities to develop and recognise a range of skills that enable them to consider/approach problems critically, confidently and independently.

Communication skills should be considered both in terms of communicating science to a range of audiences, and communicating ideas through oral and written approaches.

The Society will seek evidence of an approach for the development of teams and different team members (including leadership), and general management skills, including project management.

The Society will seek evidence that ethical and regulatory issues are appropriately addressed – while for many this may most appropriately be built on through the capstone experience, the underlying issues will need to be addressed for everyone.

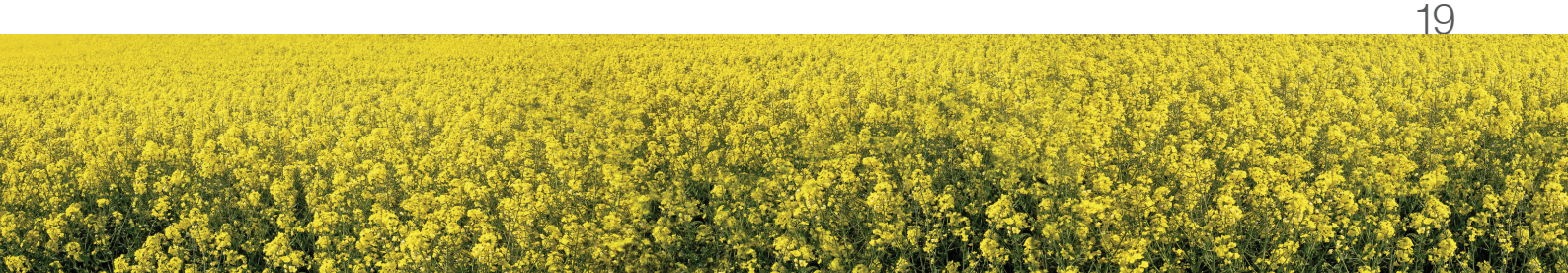
Guidelines

Existing HEI documentation may show where graduate skills outcomes are taught and assessed, but if this is not available, or felt by the applicant to be insufficiently clear for the purposes of accreditation, the submission should include a skills table as described in the guidance to criterion 2A above.

A. There is a system for the development of basic skills such as word processing, spreadsheets and presentation software
There should be clear evidence that students have acquired these essential basic skills.

B. Students should be able to demonstrate how to find and distinguish/evaluate/cite appropriately valid sources of scientific and other information online and offline
There should be evidence that students are able to collect, sort and protect/backup personal online resources, including issues of intellectual property; demonstrate competence in the use of reference management systems; understand and avoid plagiarism; understand the importance of personal integrity; and make the most of social media opportunities for networking responsibly

C. Students are given the opportunity to develop, and recognise a range of skills that enable them to consider/approach problems critically, confidently and independently
The curriculum should show evidence of integration and reinforcement of problem solving skills throughout a degree programme. Institutions should provide evidence that the opportunity for the development of these skills are at all levels of degree programmes so that students graduate as creative and effective problem-solvers.



Students should be encouraged (wherever appropriate) to:

— rephrase problems in their own words and be clear about what is being asked; divide a complex problem into smaller, more manageable steps

— re-formulate a problem, allowing for the identification of more than one solution

— ensure the answers/solutions to problems make sense/are feasible

Students should also be given the opportunity to solve open-ended problems where more than one solution is apparent from the outset (see Criterion 6 for further consideration of creative approaches to problem solving).

Problem solving frameworks that can help define and clarify the nature of a problem, and identify a solution, may also be considered. These could include the 5Ws and 1H (Who, What, Where, When, Why, How) tool and the Osborn-Parnes Creative Problem Solving Process. Institutions may wish to make use of these frameworks when developing students' problem solving skills.

D. Communication skills are considered in terms of communicating science to a range of audiences, and communicating ideas through oral and written approaches
Institutions should provide evidence that they enable students to communicate effectively through oral and written presentations. This could be formally in the programme and less formally through outreach or presentations to (for instance) student-led societies.

E. There is evidence of an approach to the development of teams and different team members (including leadership)
Teamwork can be particularly valuable with diverse teams, where each member may have a different background and therefore a distinct perspective on problems to be solved. Providing a curriculum framework in which teamworking and leadership skills are developed is an important recognition of their importance.

F. There is an approach to general management skills, including project management
There should be reference to these skills in learning outcomes of specified modules This framework should include the development of time management, organisation and inter-personal skills, including the use of milestones.

G. Ethical and regulatory issues are appropriately addressed
Student exposure to and understanding of ethical issues regarding experimentation and its regulation, as appropriate to the submitted programme, in generic terms provide the necessary appreciation needed for certain types of research, particularly those dealing with animals and humans. The study of ethics helps students to develop widely applicable skills in communication, reasoning and reflection, as well as providing an introduction to codes of conduct and work as a professional scientist. As stated in Criterion 1, HEIs need to be clear about the difference between the institution's responsibilities in securing ethical approval and meeting legal requirements around health and safety and the learning, teaching and assessment of students' knowledge of these aspects within a programme.

4. A foundation in mathematics, statistics, chemistry and physics within a biological context appropriate to the discipline

At a basic level all bioscience degrees should integrate mathematics, statistics, chemistry and physics to the extent that knowledge and understanding of science principles governing current techniques and concepts should be embedded within the curriculum. The knowledge and understanding of mathematical principles that support the application of key biological concepts must be sufficient to promote problem solving at the theoretical and practical levels. Students should be equipped with the mathematics needed to handle variation at different levels, especially with regard to the greatly increased amount of data being generated by modern laboratory and computing techniques. Students should understand the statistical aspects of experimental procedures, encompassing the analysis of collected data, the design and analysis of studies, the development of calibration and analysis techniques, and the robustness of data.

Guidelines

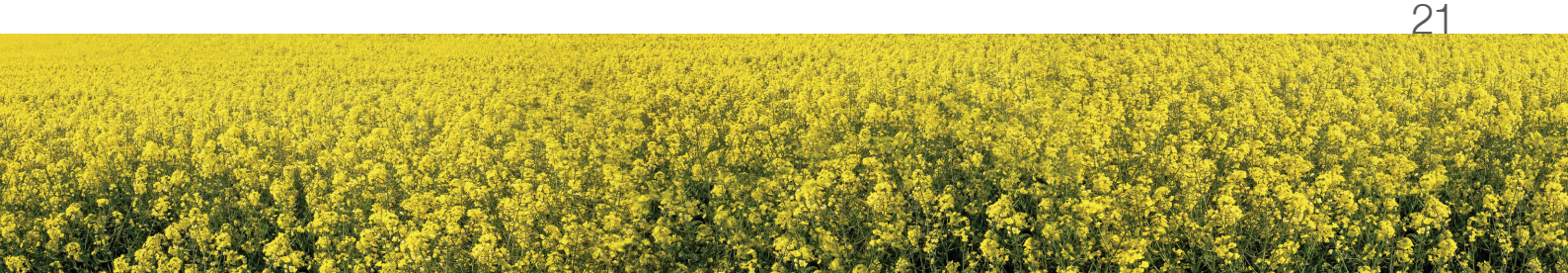
A. The coverage of mathematics, statistics, chemistry and physics should be of sufficient depth and breadth to provide the necessary knowledge and understanding for students to appreciate and apply these subjects within a biological context
Contextual understanding should be demonstrated through the integration of these physical sciences with the biological curriculum, as appropriate. It is to be expected that this coverage will vary within the biological disciplines, and that the curriculum should highlight, via learning outcomes, where interdisciplinary science knowledge and understanding is fundamental to future developments within specific fields.

B. Knowledge and understanding of science principles governing current techniques and concepts, and their evolution, are embedded within the curriculum
The biological sciences sit on a foundation of physical and mathematical sciences. It is appropriate that the integration of mathematics, chemistry and physics be taught within a biological context. In this way these subjects can be embedded within the curriculum as part of the learning developmental cycle that is relevant to specific disciplines within bioscience streams. The use of molecular techniques in all areas of biology necessitates the need for chemistry to be included in the curriculum of all bioscience degrees. The extent to which this is covered will depend upon the discipline. However, a bioscience graduate should be able to prepare solutions at known concentrations, understand the concepts of molar, molarity and molality, and manipulate solutions, as well as understand the nature and application of buffers. Different specialisms might be expected to vary in the underpinning of mathematics, statistics, chemistry and physics at the technical and analytic skills levels. For instance, the treatment of descriptive and analytical statistics might be expected to vary between the molecular and the ecological and environmental sciences streams. A greater underpinning of physics might be deemed necessary for disciplines within the molecular stream where the biological applications of synchrotron radiation, x-ray crystallography or other physical science techniques are covered.

C. The knowledge and understanding of mathematical principles that support the application of key biological concepts are sufficient to promote problem solving at the theoretical and practical levels
Provide an overview.

D. Students should be equipped with the mathematics needed to handle variation at different levels
Provide an overview of the statistics learning outcomes.

E. Students should understand the statistical aspects of experimental procedures, encompassing the analysis of collected data, the design and analysis of studies, the development of calibration and analysis techniques, and the robustness of data
Show how students apply statistics in experimental situations. Section D above is concerned with how students learn the mathematical principles, this section, E, is about how that knowledge is applied in experimental situations.



5. Specific skills and knowledge appropriate to the degree title.

While degree programmes accredited by the Royal Society of Biology may involve a great deal of specialisation, particularly, but not only, in the final year, all bioscience graduates from a Society accredited degree in any area of specialism should have some underpinning general knowledge of the basic fundamentals of biology, including: an overview of biodiversity, the cell, basic genetics, the concept of evolution, biochemistry and molecular biology, and organismal biology.

The specialist degrees are likely to fall into one of the following categories: molecular aspects of biology (including biochemistry); organismal biology (including botany and zoology); ecology and environmental biology; and human biology. HEIs, in their documentation will provide details of the specialist curriculum. Reference will be made to Learned Societies where relevant.

Guidelines

A. All bioscience graduates in any area should have some basic knowledge of genetics, biochemistry, molecular biology, and organismal biology

The biosciences are of direct relevance to everyone, we all need food and water, we exist within our own ecosystem and many of us travel and spend time in differing environments. The global challenges of environmental management, sustainability, and health (and not just human health) affect us all. In addition, the biosciences in various forms are of interest to many who would not necessarily regard themselves as professional biologists (e.g. hobbyists, natural historians, members of charitable organisations etc.). As a consequence there is significant media attention to biology and a high level of public awareness. The Society feels that it is essential that graduates from an accredited degree not only have an overview that helps them understand their chosen field of study but that they can "hold their own" in terms of basic biological knowledge in the context of overall public awareness. The topics forming the basic fundamentals of biology provide the underpinning context to the specialisation. The Society accepts that they may be explored to a greater or lesser extent according to specialisation of the degree and it may be appropriate for example that some of the core topics may be mainly taught at HEQ Level 4 (or SHEQ Levels 7 or 8 in Scotland).

B. There has been consultation with the appropriate Learned Society for the specific skills and knowledge that may be required for a specific programme name

Many honours degrees are awarded in subjects that have relevant Learned Societies. HEIs should consult with the appropriate Learned Societies for the specific skills and knowledge that may be required for a specific programme name.

C. The programme adheres to the guidance for the Typical Standard of the Biosciences Benchmark

The Society recognises general areas (e.g. Molecular Aspects of Biology, Whole Organism Biology, Ecological and Environmental Sciences). The key topics within these degrees are outlined in the Quality Assurance Agency Biosciences Benchmark Statement and are not repeated here. Accredited programmes will be expected to adhere to the guidance for the typical standard of the most current Benchmark Statements (available at **http://www.qaa.ac.uk/assuring-standards-and-quality/the-quality-code/subject-benchmark-statements**).

6. Developing Creativity and Innovation

Developing creativity and innovation in graduates should be an implicit part of the student experience. These are characteristics which will serve graduates well, wherever they plan to make their careers. The Society recognises that in some respects we are only at the beginning of this kind of curriculum development, and so the accreditation process seeks to encourage development of these characteristics rather than necessarily insisting on evidence of them as a prerequisite for accreditation. The Society accepts that this is a developing theme in many institutions and not necessarily a learning outcome met by every graduate.

Institutions should provide evidence that they encourage students to be creative by thinking differently and they should describe steps they have taken towards providing an environment that promotes creativity and innovation. Universities should also make plain how they promote problem solving using techniques designed to develop individual and group creativity.

Guidelines

The development of creativity and innovation within the curriculum for an accredited degree programme could contain some or all of the following elements.

A. Institutions should provide evidence they encourage students to be creative by 'thinking differently'

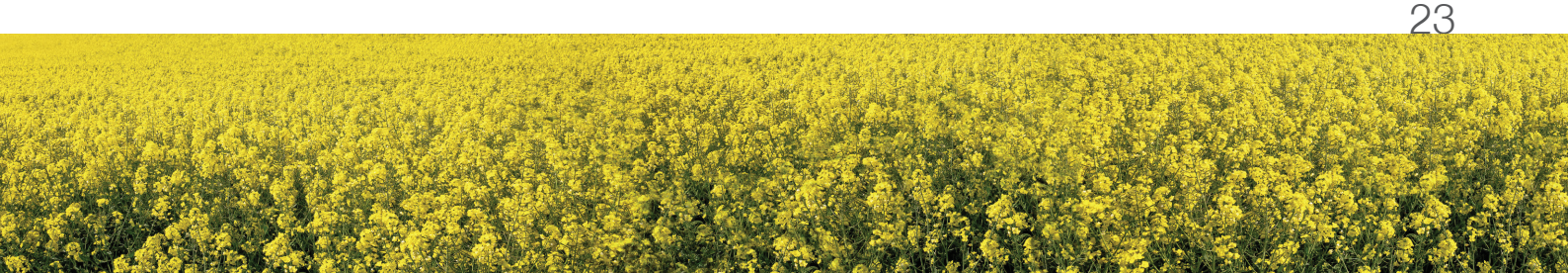
Universities should provide evidence they promote a creative mindset in students by encouraging them to think differently. Students should be encouraged to be inquisitive and open-minded, welcome the unexpected, challenge assumptions and (from time-to-time) defy convention, think beyond their own discipline, consider problems from the perspective of non-biologists, and make connections.

B. Universities should describe steps they have taken towards providing an environment that promotes creativity and innovation

There should be evidence that institutions provide the time and space for students to think creatively. This should involve creation of a culture, ideally at all levels of degree programmes, in which creativity is stimulated and innovation thrives. Important elements of this culture include: the encouragement of 'off the wall' ideas, that may lead to genuinely creative solutions to problems; and building confidence of students so they have the courage and conviction to pursue their ideas to fruition.

C. Engagement of students with techniques that can promote individual and group creativity

Universities should make plain how they promote creativity and creative problem solving using techniques designed to develop individual and group creativity. For group sessions there should be evidence that institutions offer structured, constructive and inclusive approaches to creative problem solving. Where these activities are assessed, emphasis should be placed on students demonstrating how they have engaged with techniques designed to promote creativity in individuals, and the extent of their participation in group sessions. For the former they could be asked, for example, how they have utilised a specific technique during creative problem solving. Students should not be awarded marks solely on the basis of their coming up with novel ideas as this is frequently an unrealistic expectation.



Appendix C – Guidelines for the Accreditation Assessment Panel

Members of the Accreditation Assessment Panel must abide by the Royal Society of Biology Code of Conduct and declare, prior to the start of the accreditation process, any potential conflicts of interest with the degree programme being accredited.

Conflicts of interest

Members of the Accreditation Assessment Panel must not have worked for, or acted as an external examiner for, the HEI being assessed in the last five years. Members of the Accreditation Assessment Panel are expected to (and will be given the opportunity to) declare any previous working relationships with the HEIs that would prevent them assessing a particular application.

Code of Conduct

In the course of conducting accreditation assessments for the Royal Society of Biology, the Accreditation Assessment Panel may come in contact with individually identifiable, commercially sensitive and/or confidential information. Accreditation Assessment Panel members must treat all information received or obtained while performing any duties on behalf of the Royal Society of Biology as confidential and not divulge such information to any other person or organisation unless authorised to do so. This responsibility continues after the assessment has concluded.

In order to ensure that HEIs, the scientific community, and the wider public may have confidence in the effectiveness and impartiality of the Royal Society of Biology's Degree Accreditation Programme, members of the panel must undertake to:

— Inform the Royal Society of Biology of any potential conflicts of interest as soon as is possible

— Not use their position as a member of the Accreditation Assessment Panel to promote their personal, professional or business interests

— Respect the confidentiality of information acquired to them solely by virtue of their position as a member of the Accreditation Assessment Panel and not discuss any specific aspects of an ongoing accreditation application with anyone working/studying at or associated with the HEI being accredited or any other unauthorised person

— Attend all meetings at which their presence is required

— Prepare for meetings by reading all papers issued beforehand

— Direct relevant questions about an accreditation event to the Royal Society of Biology

— Be fair, open-minded, unbiased and non-prejudicial on grounds of gender, race, disability, lifestyle, culture, beliefs, sexuality, age or any other irrelevant ground and not use any language that could be deemed offensive or discriminatory

— Not request or accept any inducement, gift, commission, discount or any other profit from the HEI being assessed or from any other interested person

Adhering to this Code of Conduct is a minimum expectation of all members of the Royal Society of Biology Accreditation Assessment Panel. The Royal Society of Biology reserves the right to revoke membership of the Accreditation Assessment Panel if any panel member does not abide by this Code of Conduct.

The Assessment Panel will be covered by public liability and/or indemnity insurance for committee members held by the Society whilst carrying out assessments.

Appendix D – Guidance for the site visit

Before the site visit

The panel will meet the evening before the site visit.

HEIs will book accommodation including breakfast for the panel members in a suitable nearby hotel. If necessary, the HEI should also arrange transport for the Assessment Panel to the venue for 09:00 on the morning of the visit.

Day of site visit

The example agenda and guidance provided below are flexible and subject to change, depending on individual circumstances. All times given are approximate. A conference room, large enough for all meetings, with tea, coffee and water, set out in boardroom style should be provided. Student project reports and any additional documentation requested should be made available for viewing by the panel.

09:00 – 09:20 — Arrival of the Assessment Panel

09:20 – 09:40 — Private meeting of the Assessment Panel

09:40 – 09:55 — Presentation by programme team
The HEI should prepare a presentation of no more than 15 minutes duration on the degree programme(s) being submitted for accreditation, preferably given by the programme leader. This should describe any unique or particularly valuable features of the programme(s) and provide details of any optional pathways. The presentation must not attempt to answer the questions arising from the Stage One Report.

10:00 – 11.45 — Meeting with programme team
The Assessment Panel will meet with (ideally no more than 10) key individuals from the programme team. The Assessment Panel may request particular individuals to be present, and the programme leader, and assessment officer (or equivalent) should be present. Name boards should be provided by the HEI for this stage of the meeting.

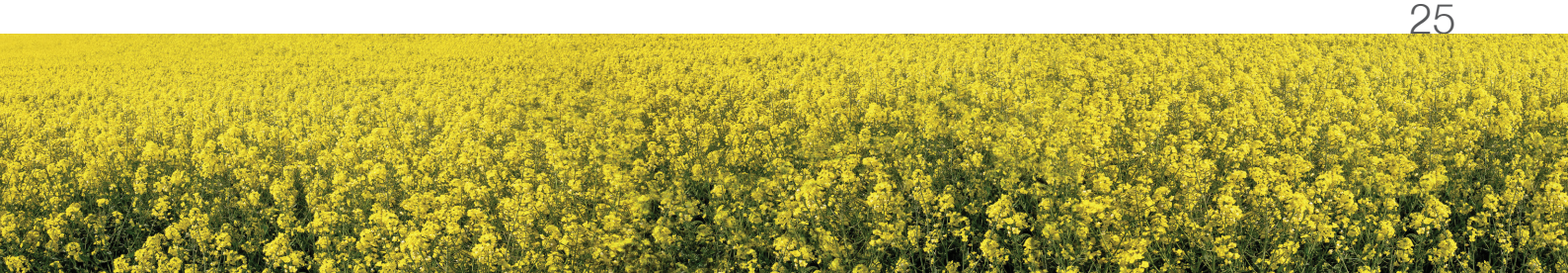
The Accreditation Assessment Panel will discuss aspects arising from the Stage One Report. Normally this report will set the agenda for the meeting; however it is possible that topics may arise from the presentation or any documentation submitted after receipt of the Stage One Report. The programme team will have the opportunity to respond and provide further evidence. The programme team may wish to explain how they have addressed, or plan to address, any issues or to query the panel's interpretation of the evidence provided.

11.45 – 12.00 — Private meeting of panel

12:00 – 13:00 — Meeting with students and recent graduates
The HEI should issue an invitation to students and recent graduates to speak to the Assessment Panel about their learning experiences. The panel ask that a selection of 10-20 student representatives across all years of the programme should attend, including, if possible, recent graduates.

13:00 – 13:30 — Lunch with students and recent graduates
The HEI should provide a light lunch for the panel and the students in a suitable venue.

13:30 – 14:15 — Tour of facilities
A tour should be arranged to give the Assessment Panel a chance to see laboratories and other facilities available to students on the programme being considered. This should concentrate on facilities integral to learning and teaching for students on the programme(s) being assessed.



Where possible, any relevant student activities taking place on the day, such as laboratory-based learning, teaching, or presentations, should be included. The Assessment Panel may request to see particular laboratories or facilities and advance notice will be given if this is the case. Where visits to particular facilities that may have restricted access are required, the HEI is asked to arrange this in advance. The timing of this stage of the visit is flexible to ensure that the facilities are accessible. Please alert the Royal Society of Biology if this is not a suitable time for the tour.

14:15 – 16:00 (approx.) — Private meeting of panel
A private meeting room should be provided. The panel may require additional documentation to be made available during this meeting and so ask that the contact details of a staff member be provided, and said member of staff will be available to assist if needed. The panel are likely to review examples of assessed work during this time, for example final year projects.

16:00 – 16.30 — Feedback to team
The timings of feedback session are flexible depending on the private meeting of the Assessment Panel. The chair will deliver feedback to the programme team including the provisional outcome of the process where possible (final decisions are made by the Royal Society of Biology's Accreditation Committee).

17:00 — End of visit

Appendix E – Guidelines for publicity following successful accreditation

Programmes undertaking the accreditation process will not be publicly announced until they have successfully completed the accreditation process and we ask that you keep your participation confidential.

Upon completion, successfully accredited degree programmes will be entitled to:

— Receive a Certificate of Accreditation from the Royal Society of Biology

— Promote the accredited degree programme(s) and the advantages to students of being accepted on the programme in marketing materials

— Use the Royal Society of Biology's name and logo on all materials relating to an accredited degree programme(s)

— Use the Royal Society of Biology's name and logo on the HEI's website in relation to the accredited degree programme(s)

— Use the Royal Society of Biology's name and logo on the UCAS website where the HEI's name appears in relation to the accredited degree programme(s)

— Use the Royal Society of Biology's name and logo on other marketing materials relating to the accredited degree programme(s), following permission from the Royal Society of Biology

— Use the following statement for the Key Information Set in relation to the accredited degree programme(s):

This course is accredited by the Royal Society of Biology for the purpose of meeting in part the academic and experience requirement for Membership and Chartered Biologist (CBiol).

— Use the following statement on the HEI's website in relation to the accredited degree programme(s):

This programme has been accredited by the Royal Society of Biology following an independent and rigorous assessment. Accredited degree programmes contain a solid academic foundation in biological knowledge and key skills, and prepare graduates to address the needs of employers. The accreditation criteria require evidence that graduates from accredited programmes meet defined sets of learning outcomes, including subject knowledge, technical ability and transferable skills.

Participating HEIs must not imply that other establishments, yet to achieve accreditation, are not offering relevant, high-quality programmes when making reference to the Accreditation Programme in external literature.

The Royal Society of Biology maintains the right to request the removal of its name and all of its trademarks including its logo from printed or electronic material or publications at any time.

Appendix F – Guidance for interim accreditation

The Royal Society of Biology encourages HEIs with new programmes, where students have yet to graduate, to apply for accreditation. Under these circumstances, the accreditation process is likely to include a review of programme documentation and a site visit before the first cohort of students graduate. The Society may grant interim accreditation pending first cohort graduation, with full accreditation status awarded afterwards, if appropriate.

HEIs with relevant programmes should contact the Accreditation Team in advance of their application, to discuss potential pathways to gaining accredited status, and application charges.

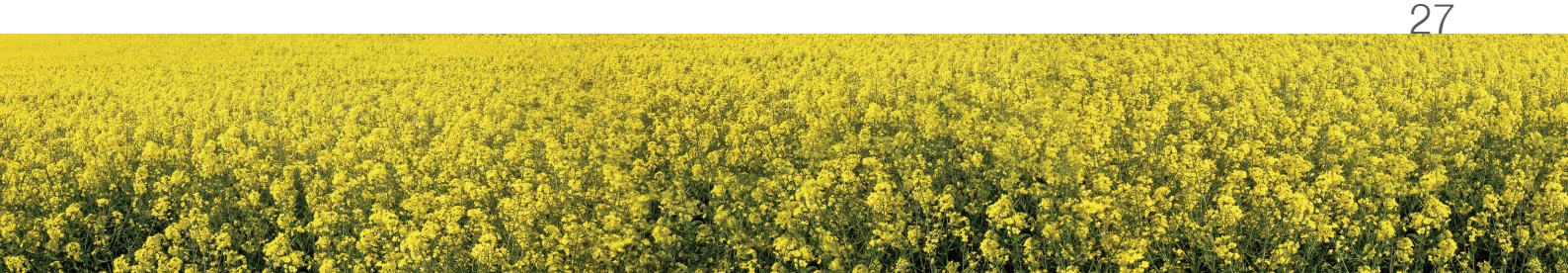
The decision process for interim accreditation is likely to involve the following steps:

— Submission of all relevant stage one documentation, as detailed in Appendix A

— Review of documentation by the Accreditation Assessment Panel, and completion of an interim accreditation Stage One Report:

If assessors feel there is a substantial gap between the proposed outcomes for the programme and those required for accreditation, this will be communicated to the HEI. At this point, the HEI may choose to implement any suggested changes and resubmit for interim accreditation; or apply for full accreditation following the graduation of the first cohort of students; or withdraw their application. Any reapplication will incur additional costs for assessors' time and effort, but consideration will be given to the initial review that had already been conducted.

If assessors feel the course demonstrates the potential to meet the required outcomes, a site visit will be scheduled;



— The Accreditation Assessment Panel will conduct the site visit, as detailed in Appendix D

— Following the site visit, the assessment panel will complete an interim accreditation Stage Two Report, highlighting the final steps for the programme in question:

If the site visit highlights aspects of the programme that do not achieve the outcomes for accreditation, these will be communicated to the HEI. At this point, the HEI may choose to implement any suggested changes and resubmit for interim accreditation; or apply for full accreditation following the graduation of the first cohort of students; or withdraw their application. Any reapplication will incur additional costs for assessors' time and effort, but consideration will be given to the initial review that had already been conducted.

If the assessment panel is satisfied that the required outcomes for accreditation will be achieved, they can recommend to the Royal Society of Biology Accreditation Committee that the programme should be awarded interim accreditation.

Following the award of interim accreditation, the HEI must complete an annual report declaring any changes implemented since the initial stage one review, until the first cohort of students graduate.

In order to gain full accreditation, documentation should be provided to assure the assessors that the graduate learning outcomes are being achieved, and that any recommendations made by the assessment panel for improving the programme are being acted upon.

Once the first cohort of students has graduated, and if the Assessment Panel is satisfied that the programme meets the requirements for accreditation, it can recommend to the Royal Society of Biology Accreditation Committee that full accreditation status should be awarded.

Should the Assessment Panel conclude that there is insufficient evidence to award full accreditation, the programme will continue with the status of interim accreditation, until sufficient evidence is submitted.

Interim accreditation will be awarded for a period of five years; if there is insufficient evidence that the programme meets the requirements for full accreditation at the end of that period, interim accreditation status will be withdrawn.

Accredited status will be awarded for a period of five years from the date of the ratification of full accredited status by the Royal Society of Biology.

The timeframe for the stage one assessment is estimated to be similar to those applying for full accreditation. We expect the timeframe for the second stage of the assessment, the site visit and ratification, would be subject to the nature and number of programmes submitted for interim accreditation.

Guidelines for publicity following award of interim accreditation

Following achievement of interim accreditation, the HEI will be entitled to:

— Use the Royal Society of Biology's name and logo on all printed and digital materials, including the HEI's website, relating to programmes awarded with interim accreditation

— Use the Royal Society of Biology's name and logo on the UCAS website where the HEI's name appears in relation to the interim accredited degree

— Use the Society's name and logo on all other marketing materials relating to the interim

accredited programme(s), following permission from the Royal Society of Biology

— Use the following statement on the HEI's website in relation to the interim accredited programme(s):

This programme has been interim accredited by the Royal Society of Biology following an independent and rigorous assessment. Accredited degree programmes contain a solid academic foundation in biological knowledge and key skills, and prepare graduates to address the needs of employers. The accreditation criteria require evidence that graduates from accredited programmes meet defined sets of learning outcomes, including subject knowledge, technical ability and transferable skills. Following a successful demonstration to the Society that these graduate attributes have been attained, and the first cohort of students from the programme have graduated, the programme may be awarded full accreditation.

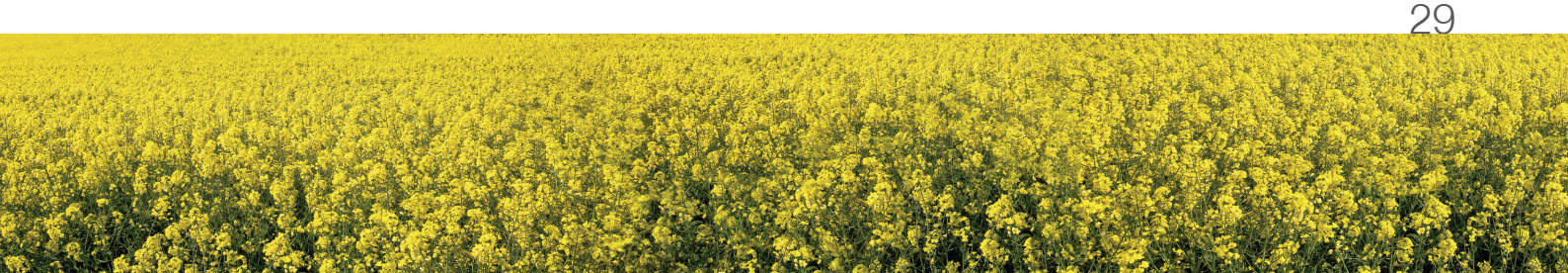
Institutions must not imply that award of full accreditation of any programme is guaranteed following receipt of interim accreditation.

Participating HEIs must not imply that other establishments, yet to achieve accreditation or interim accreditation, are not offering relevant, high-quality programmes when making reference to the Degree Accreditation Programme in external literature.

The Royal Society of Biology reserves the right to request removal of its name and logo and all trademarks, including its logo, from printed or digital materials or publications at any time.

Appendix G – Template for the evidence matrix

The Society has provided a template for presentation of evidence which is available on the Society's web site at **www.rsb.org.uk/apply-for-accreditation**. It is based on the six criteria listed on page 11 and Appendix B, and relates closely to the Stage One Report.



Appendix H – Glossary

Credit: One credit is notionally ten hours of student effort, assuming that one academic year is 120 credits, and one calendar year is 180 credits: 80 credits is equivalent to 40 European Credit Transfer and Accumulation System (ECTS) credits.

Degree accreditation is acknowledgement by an external body that a degree programme meets certain prescribed specifications.

Interim accreditation: is acknowledgement by the Royal Society of Biology that a degree programme with no current graduates demonstrates the potential to meet the prescribed criteria for accreditation. Full accreditation may be granted following further assessment, and a sufficient number of students have graduated to demonstrate the learning outcomes are being achieved.

Learning outcomes are statements that specify what a graduate will know, understand, or be capable of doing as a result of obtaining a qualification. Learning outcomes are expressed knowledge, understanding, skills, and attributes, and will have been assessed in the degree programme.

Levels: Qualification levels indicate the relative academic demand, complexity of understanding, depth of learning and degree of autonomy expected of the learner. A number of different qualifications frameworks are used in the UK and when referring to levels it is essential to know which framework is being used:

The Framework for Higher Education Qualifications (FHEQ) applies in England, Wales and Northern Ireland (NI). Although it replaced a previous version of FHEQ, the titles used in the previous version (e.g. Masters) are still widely used. FHEQ describes five levels of qualifications, 4-8 (with 8 being the highest). This definition aligns with the Qualifications and Credit Framework (QCF) that encompasses post-16 levels of learning, including National Vocational Qualifications (NVQs).

In Scotland, the Scottish Credit and Qualifications Framework (SCQF) is mapped against the Scottish Higher Education Levels (SHE).

The Bologna Process requires each country to verify that its national framework is compatible with an overarching Framework for Qualifications of the European Higher Education Area (FQ-EHEA). The FQ-EHEA consists of three main cycles.

The relationship between the different systems is shown overleaf:

Table based on www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Bologna-Process-in-HE.aspx and www.qaa.ac.uk/standardsandquality/otherrefpoints/qualsboundaries.asp

FHEQ level (England, Wales and NI)	FHEQ 2001 Level	SCQF level (Scotland)	SHE level (Scotland)	FQ-EHEA cycle	Qualification
8	Doctoral (D)	12	D	Third cycle (end of cycle) qualifications	Doctoral degrees (eg PhD/ DPhil (including new-route PhD), EdD, DBA, DClinPsy)*
7	Master (M)	11	M	Second cycle (end of cycle) qualifications	Masters degrees (eg MPhil, MLitt, MRes, MA, MSc)
					Integrated Masters degrees** (eg MEng, MChem, MPhys, MPharm)
					Postgraduate diplomas
					Postgraduate Certificate in Education (PGCE)***
					Postgraduate certificate
6	Honours (H)	10	H	First cycle (end of cycle) qualifications	Bachelors degrees with honours (eg BA/BSc Hons)
		9	3		Bachelors degrees
					Professional Graduate Certificate in Education (PGCE)***
					Graduate diplomas
					Graduate certificate
5	Intermediate (I)	8	2	Short cycle (within or linked to the first cycle) qualifications	Foundation degrees (eg FdA, FdSc)
					Diplomas of Higher Education (DipHE)
					Higher National Diplomas (HND)
4	Certificate (C)	7	1		Higher National Certificates (HNC)****
					Certificates of Higher Education (CertHE)

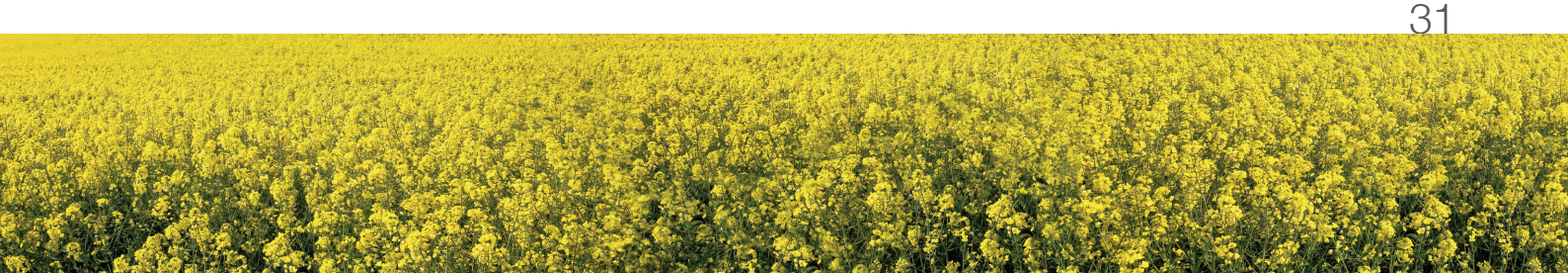
Notes

* Professional doctorate programmes include some taught elements in addition to the research dissertation. Practice varies but typically professional doctorates include postgraduate study equivalent to a minimum of three full-time calendar years with level 7 study representing no more than one-third of this.

** Integrated Master's degree programmes typically include study equivalent to at least four full-time academic years, of which study equivalent to at least one full-time academic year is at level 7. Thus study at Bachelor's level is integrated with study at Master's level and the programmes are designed to meet the level 6 and level 7 qualification descriptors in full.

*** See www.qaa.ac.uk/ASSURINGSTANDARDSANDQUALITY/QUALIFICATIONS/Pages/Statement-on-the-PGCE-Qualification.aspx

**** Higher National Certificates (HNCs) are positioned at level 4, to reflect typical practice among higher education awarding bodies that award HNC under license from Edexcel.



Outcomes-based procedures are the methods our Accreditation Assessment Panel use to judge applications for accreditation. Graduates of these courses meet our learning outcomes within the specified criteria upon graduation.

Period of practice: a planned period of learning which is designed to support the student's attainment of a defined set of learning outcomes relating to supervised practice in the particular subject area. It includes those circumstances where students have arranged their own learning opportunity with a provider, with the approval of the HEI. In all cases, programme providers are responsible for monitoring the quality of the learning experience, and its ongoing capacity to meet students' needs.

Programme: a coherent learning experience followed by an individual, the successful completion of which results in the conferment of a named HE award.

Programme specification: a concise description of the intended learning outcomes of an HE programme, and the means by which the outcomes are achieved and demonstrated.

Programme structure: content of the programme, including mandatory and optional modules, rules for combining units and any specified pathways.

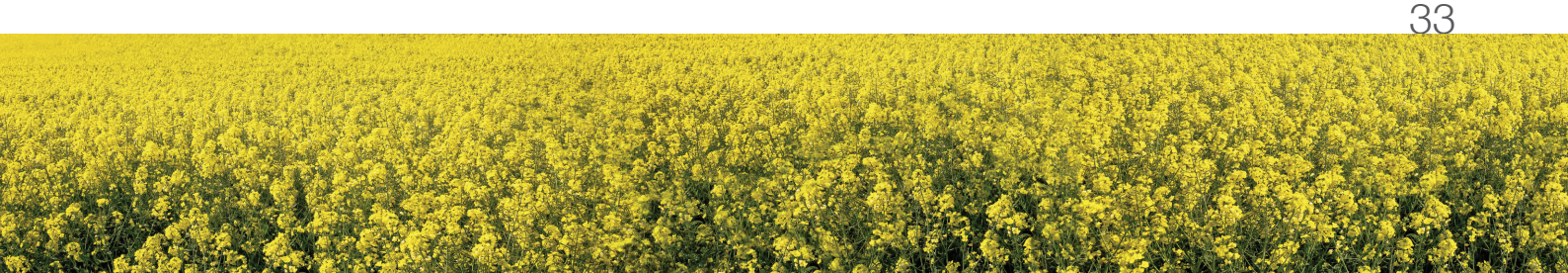
QAA: the Quality Assurance Agency for higher education responsible for maintaining standards across UK HEIs.

Quality Assurance: a range of review procedures designed to safeguard academic standards and promote learning opportunities for students of acceptable quality.

Royal Society of Biology degree accreditation: follows an independent and rigorous assessment of degree programmes which contain a solid academic foundation in biological knowledge and key skills, and prepare graduates to address the needs of employers.

Subject benchmark (UK): This is overseen by QAA in England, and provides a reference point against which outcomes can be measured. Subject Benchmark Statements provide a means for the academic community to describe the nature and characteristics of programmes in a specific subject. They also represent general expectations about the standards for the award of qualifications at a given level and articulate the attributes and capabilities that those possessing such qualifications should be able to demonstrate.

Notes



Royal Society of Biology

Becoming a member

The Royal Society of Biology is the leading professional body for the life sciences in the UK. Our vision is to represent all who are committed to biology in academia, industry, education and research; facilitate the promotion and translation of advances in biological science for national and international benefit; and engage and encourage public interest in the life sciences.

The Society represents more than 15,000 individual members, including professionals from industry, academia and education; practising scientists; students; and interested non-professionals.

As a member, you will receive a wide range of benefits, all designed to support you as a biologist.

— Access to Professional Registers and Continuing Professional Development programme – Chartered Scientist (CSci), Chartered Biologist (CBiol), Chartered Science Teacher (CSciTeach), Registered Scientist (RSci) and Registered Science Technician (RSciTech)

— Discounted training courses – members save up to 75% when attending courses from our newly-expanded training programme

— Networking events – members are invited to attend nationally and locally organised events throughout the year, where they can meet peers, other biologists and senior Society staff

— The Biologist magazine – all members receive a subscription to our award-winning magazine, published six times a year

— Opportunities to proactively support the future of UK biology – input to our science and education policy work, and support our public engagement regional activities

— Postnominal letters – Associates, Members and Fellows of the Society can use the appropriate postnominal letters (AMRSB, MRSB or FRSB) to signify their status as a professional biologist

For more information on membership benefits and grades, visit **www.rsb.org.uk/join** or email **membership@rsb.org.uk**

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Royal Society of Biology

To find out more about degree accreditation visit **www.rsb.org.uk/accreditation** or contact the Accreditation Team at **accreditation@rsb.org.uk**

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