

**THE**  
**FOUNDATION**  
**DEGREE**  
**ACCREDITATION**  
**HANDBOOK**



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## 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 18,000 individual members and over 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](http://www.rsb.org.uk)



## Introduction aims and purpose of foundation degree accreditation

Foundation degrees integrate academic and work-based learning through close collaboration between employers and higher education providers<sup>1</sup>. Foundation degree accreditation by the Royal Society of Biology follows an independent and rigorous assessment of degrees which contain a solid academic foundation in biological knowledge and key skills and prepare graduates to address the needs of employers. Foundation degree accreditation aims to: foster the development of key learning outcomes and recognise the excellence that exists in giving graduates the skills, knowledge and professional development experiences that enable successful progression to employment and/or further qualifications in the biosciences.

The biosciences are predominantly a practical set of subjects which require a hands-on approach to learning. Foundation degrees provide students with the opportunity to develop both academic knowledge and professional skills supported by the provision of experiences within the workplace. This means that the development and experience of laboratory and/or field skills, problem solving, innovation and creativity, underpinned by work-based learning are integral characteristics of bioscience foundation degrees. To that end, the central principle of accreditation is that the intended learning outcomes of a programme are linked to assessment.

The accreditation process does not seek to define a highly specified curriculum. Accreditation of foundation degrees is based on six overarching criteria, underpinned by the QAA Bioscience Benchmark Statement and QAA Foundation Degree Characteristics Statement<sup>1</sup>; focusing on those areas that the RSB believes will fully prepare graduates for their place in the UK and the world.

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 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 occurring afterwards, if appropriate.

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

## Foundation Degree Accreditation by the Royal Society of Biology aims to:

- Recognise academic achievement and continuing professional development
- 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

<sup>1</sup> QAA Foundation Degree Characteristics Statement 2015



# Characteristics of accredited foundation degree programmes

Accredited programmes will be highly regarded within the learning and teaching community and by employers. Accredited programmes will be delivered by subject experts and produce highly competent and knowledgeable graduates prepared for work in their chosen field. Whilst recognising the role of foundation degrees can play in providing access to honours degree courses, the Society will be assessing the programmes as end qualifications in their own right.

## Subject knowledge

Graduates from accredited foundation degree programmes will have the specialised knowledge of their chosen discipline plus core knowledge of the biosciences, including cell biology, an appreciation of biodiversity 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<sup>2</sup>.

## Professional and transferable skills

Accredited foundation degree programmes will incorporate learning outcomes associated with key skills in laboratory and/or fieldwork and the workplace 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 levels 4 and 5 (7 and 8 in Scotland, see Appendix G), 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 and professional development

All graduates will have experienced self-learning and will have satisfactorily completed an assessed work placement, demonstrating application of skills, knowledge and understanding within the relevant working environment.

<sup>2</sup> The extent to which these subjects are studied in depth will vary by programme (e.g. a foundation degree in biotechnology will have a greater emphasis on the physical sciences, than a foundation degree in environmental biology, which 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 twelve 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 the 1<sup>st</sup> February and 1<sup>st</sup> 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. The assessment reports produced by the Accreditation Assessment Panel will not be made publically available.

## 01

### Stage One

HEIs are required to electronically submit 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 (the Panel), which will produce a Stage One Report summarising the assessment. This will be sent to the HEI for fact checking and will act 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 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 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 a Stage Two Report and sent to the HEI for fact checking.

## 03

### Stage Three

The Panel will make a recommendation to the 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 minor amendments
3. The programme should not be accredited

If the Accreditation Committee awards accreditation, a Stage Three Report will be sent to the HEI where actions relating to conditions and/or recommendations should be evidenced. The HEI will have a period of six weeks to complete the Stage Three Report and provide any supporting documentation. Accreditation is not formally awarded until the Stage Three Report has been completed.



### Accreditation awarded

Following a successful assessment, accreditation will normally be awarded for a period of five years. The RSB will list accredited degree programme titles and HEIs 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.

Students studying on an accredited foundation degree programme will receive one year free membership of the Royal Society of Biology at Affiliate level during the final year of their degree. For more information on publicity guidelines following accreditation, please see Appendix E.

### Accreditation subject to conditions and/or recommendations

If accreditation is associated with conditions and/or recommendations, the HEI will receive a Stage Three Report listing these, and details of the actions taken to address the highlighted areas will be required. The HEI will have a period of six weeks to complete the Stage Three Report and provide any supporting documentation. Accreditation is not formally awarded until the Stage Three Report has been completed.

If internal approval is required for the amendments, then it would normally be expected within the six weeks, however extensions can be granted on a case by case basis.

### Accreditation withheld

If the programme does not meet the accreditation criteria, guidance will be provided by the RSB on how the programme could meet the criteria. Usually the programme will not 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 Panel shall decide whether a further full panel site visit, light touch visit, or no visit, is required in order to make a formal recommendation to the RSB Accreditation Committee.

The RSB 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 the process.

Appeals should be made to the Accreditation Committee in the first instance. If the HEI feels that an unfair decision has been reached by the Accreditation Committee, a follow-up appeal can be made to RSB Council, whose decision will be final. Further details about the appeals process are available on request.

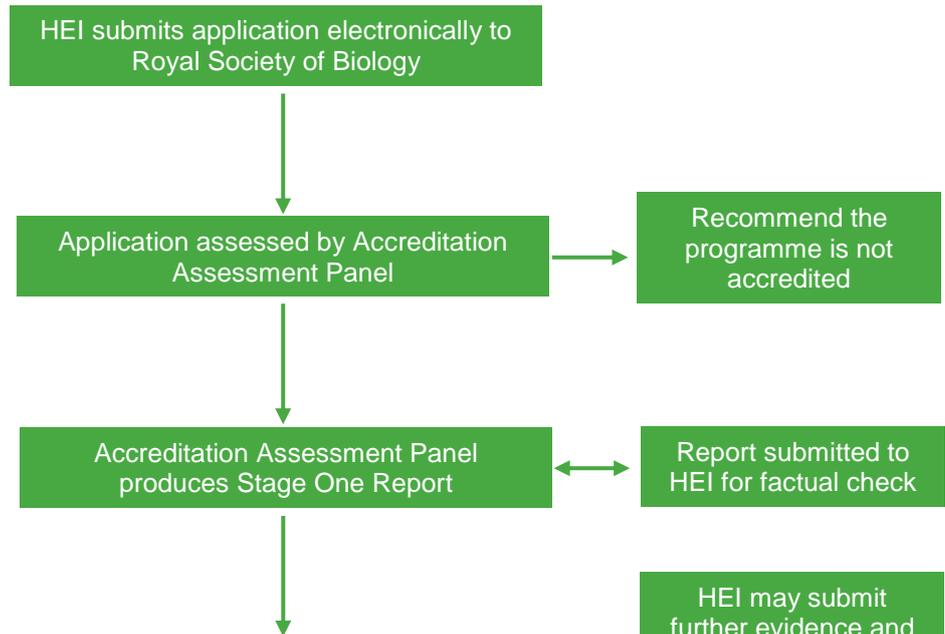
### Interim accreditation

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

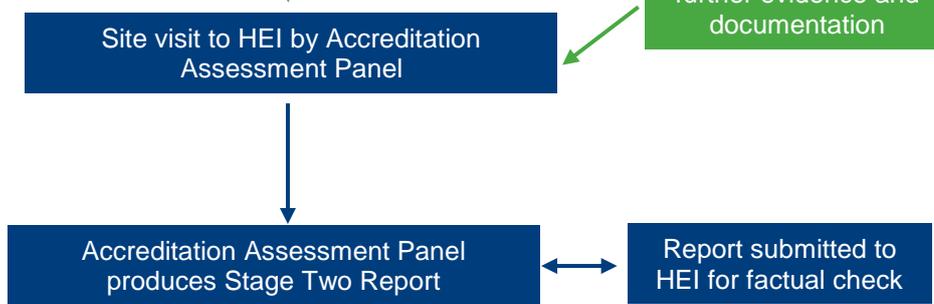


Figure 1 – Process of Accreditation

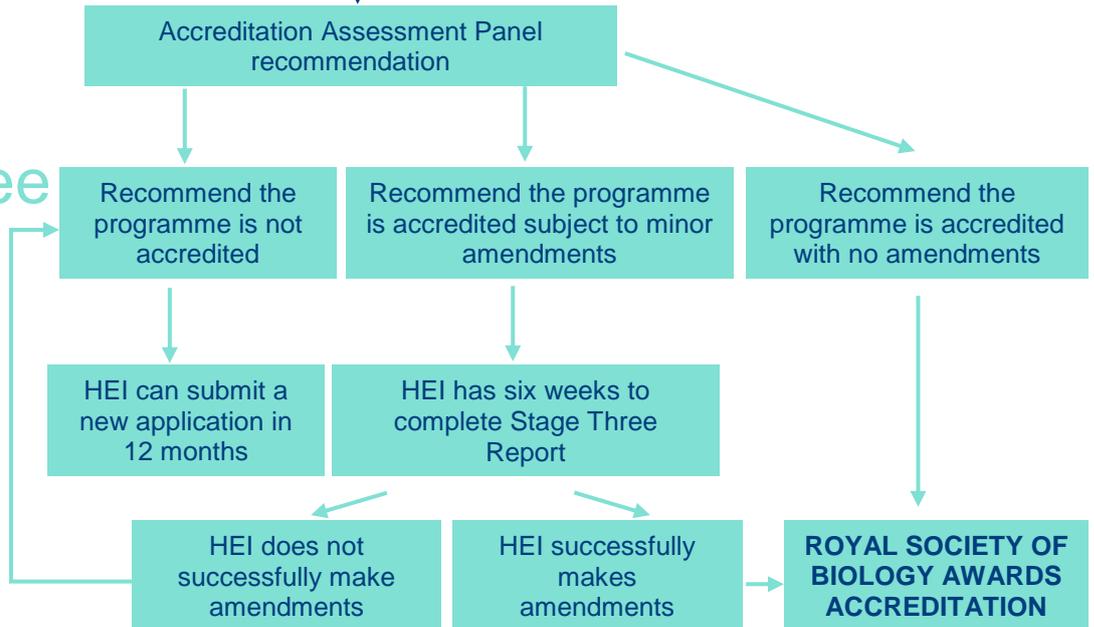
**01**  
Stage One



**02**  
Stage Two



**03**  
Stage Three



## Costs of accreditation

Details regarding the costs of accreditation can be found on the Society's website [www.rsb.org.uk/education/accreditation/Foundation-Degree-Accreditation-Assessment-Process](http://www.rsb.org.uk/education/accreditation/Foundation-Degree-Accreditation-Assessment-Process), and on the formal expression of interest form.

### Assessment fee

The fee covers all expenses associated with the assessment and site 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

There is a set fee for Foundation Degree Accreditation regardless of the number of programmes submitted and will be charged on an annual basis. The first annual fee payment will be required once Accreditation has been awarded and formally ratified by the Accreditation Committee.

## Accreditation assessment panel membership and role

The Panel considers the evidence submitted by HEIs through an initial application and site visit and provides a recommendation to the Accreditation Review Panel (a subcommittee of the 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.

A Panel will include a panel Chair with experience of chairing, approvals, and quality assurance, and at least one other panel member. Panel members are selected based on their experience and subject area expertise. The RSB provides training for panel members, administrative support, and a panel secretary for the site visit.

The size and composition of a 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:

- Complete a comprehensive online distance training course
- 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 Review Panel

Further information on the guidelines for panel Chairs and members along with details of the decision approval process 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, 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 RSB 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. HEIs will be asked to complete and submit a review form on an annual basis, highlighting any changes that may have been made. The rationale behind any changes impacting the accreditation criteria must be explained. There may be a charge for assessing accredited programmes if significant changes have been made. The RSB 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 RSB 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. Development of work-based learning that demonstrates relevant industry skills at an appropriate level

- i. A substantial focus on work-based learning relevant to the programme
- ii. Underpinned by a range of relevant sources demonstrating appropriate recognition of health, safety and ethical considerations and professional best practice
- iii. Contextualised, showing critical reflective practice and development

## 2. Demonstration of the acquisition of professional skills and familiarity with the practical environment, in a work related context

- i. Students learn in a hands-on, practical environment, and are trained in the professional skills appropriate to their main subject interest
- ii. Skill acquisition is a progressive process
- iii. There is a list of the core, assessed and professional skills used in the laboratory, workplace and/or field which are fully integrated into the programme
- iv. There is evidence of competency in the core professional 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. The assessment strategy will include opportunities for the students to find, cite, evaluate 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. The assessment strategy will include opportunities for the students to demonstrate academic communication through both oral and written approaches and to arrange 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 task management
- vii. Ethical and regulatory issues are addressed where appropriate



#### 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<sup>2</sup>
- 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 mathematical knowledge and skills needed to handle variation in data analysis at different levels

#### 5. Specific skills and knowledge appropriate to the foundation 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. Programmes will adhere to the relevant recommendations within the QAA Subject Benchmark for Biosciences (with reference to other Benchmarks if appropriate) appropriate to level 5 (8 in Scotland)
- iii. HEIs will have engaged with relevant Learned Societies to inform the curriculum

#### 6. Development of creativity and innovation relevant to the work place

- i. The programme incorporates the development of creativity and innovation in undergraduates and is an implicit part of their 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).

<sup>2</sup> The extent to which these subjects are studied in depth will vary by programme (e.g. a foundation degree in biotechnology will have a greater emphasis on the physical sciences, than a foundation degree in environmental biology, which will include more detail on biodiversity etc.).



## 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 be informed by the guidance appropriate to level 5 (8 in Scotland) of the current Biosciences Benchmark and Biomedical Sciences Benchmark as appropriate. Accredited programmes should also adhere to any subject specific guidance developed by the appropriate Learned Society written specifically for accreditation by the RSB. 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 are based on the learning outcomes for each subject area, and primarily on the required skills of graduates entering job roles, as contributed by industry and relevant Learned Societies.

Some 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. 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 by the most appropriate assessors.

## Work-based learning

The Society regards work-based learning (WBL) to be a defining characteristic of foundation degrees. Guidance on WBL can be found in the QAA Foundation Degree Characteristics Statement. The Society's criteria for accreditation do not state a minimum period for WBL in order to encourage course teams to consider what is most appropriate to the programme and beneficial for the students, rather than simply meeting a minimum threshold.

## Professional Registers

The criteria for Foundation Degree Accreditation closely align with the attributes required for Registered Science Technician (RSciTech) and Registered Scientist (RSci). Graduates from an accredited foundation degree programme are able to obtain external professional recognition of their skills, knowledge and expertise, and commitment to Continuing Professional Development (CPD) from the Royal Society of Biology.

For more information about professional registers, see <https://www.rsb.org.uk/careers-and-cpd/register>



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

HEIs should first indicate their interest in seeking accreditation by contacting the Accreditation Team at [accreditation@rsb.org.uk](mailto:accreditation@rsb.org.uk). Following initial conversations, the HEI will be required to complete and submit a formal expression of interest form, which can be downloaded from our website: [www.rsb.org.uk/education/accreditation/Foundation-Degree-Accreditation-Important-Documents](http://www.rsb.org.uk/education/accreditation/Foundation-Degree-Accreditation-Important-Documents)

Once a site visit date has been agreed, a suitable document submission date shall be arranged (usually 8 weeks before the site visit). 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](mailto:accreditation@rsb.org.uk).

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). Only one letter of intent is required per application, and must refer to all programmes seeking accreditation.

The letter of intent must include:

- a list of the foundation 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)

2. Completed accreditation matrix

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
  - 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 a complex and broad set of programmes the HEI may consider it easier to present a matrix for each set of related awards, however, this should be discussed with the Accreditation Team in the first instance. 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.

A template for the matrix can be found at [www.rsb.org.uk/education/accreditation/Foundation-Degree-Accreditation-Important-Documents](http://www.rsb.org.uk/education/accreditation/Foundation-Degree-Accreditation-Important-Documents)



## Appendix B – Details and guidance on the accreditation criteria

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 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](http://www.heacademy.ac.uk).

### 1. Development of work-based learning that demonstrates relevant industry skills at an appropriate level

Work-based learning is an integral part of foundation degrees. Well-designed degrees should consider the wide range of provisions and purposes associated with work-based learning appropriate to the degree programme. This will allow the student to apply the knowledge and learning acquired during their degree programme in the workplace while gaining relevant industry skills and experience. The Society makes a distinction between work-based learning, work-related learning and work experience (see the Glossary).

For accreditation, evidence of achieving the learning outcomes be clearly documented against the appropriate student outputs.

#### Guidelines

##### **A. The work placement should be contextualised and relevant to the foundation degree discipline**

The work placement needs to be put in to context through reference to the larger disciplinary and real-world contexts to which the student is contributing.

##### **B. The work placement will include an element of reflective commentary by the student and employer feedback**

This may be evidenced by reference to the student handbook for the work placement or equivalent and is most easily confirmed through the provision of student outputs at the site visit.

##### **C. The work placement should inculcate an appropriate understanding of health and safety, professional best 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 and/or employer. However, the student should have been involved in these processes as they apply to their work placement (e.g. by preparing a draft risk assessment or ethics application that can be submitted as assessed coursework or included in the work placement report or equivalent).

##### **D. The work placement should be underpinned by a range of relevant sources**

Sources that inform work-based learning 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 work placement and the purpose 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.



## 2. Demonstration of the acquisition of professional skills and familiarity with the practical environment, in a work-related context

Foundation degrees within the biosciences enable students to benefit from the involvement and collaboration between the employer and higher education provider. The Royal Society of Biology recognises the diversity of ways in which such close collaboration may be evident in the programme. The Society seeks to ensure all students can demonstrate the progressive development of industry relevant skills through a work experience or equivalent work-informed simulated experience.

### 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

A bespoke list may not be necessary 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 a bespoke summary for the submission is required then please follow the format of the table provided below. The table ideally should evidence a progressive approach, where basic techniques and skills are built on during the course of the programme.

Skill	Level 4	Level 5
Aseptic technique	Introduced in module BIO40001	Developed in module BIO50001
Etc.		

#### B. A description of how the technical skills are assessed

This can be briefly summarised in the submitted matrix. 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

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.

#### D. The Society is specifically seeking evidence for the development of the appropriate technical skills in relation to 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 due to the fact that any significant list would be rapidly out-of-date. However the very basic operations (sample and specimen handling, pipetting, manipulation of solutions, measurement, use of basic equipment, and the different forms of error) would be expected. Different subject areas will have different requirements, perhaps informed by the work of the relevant Learned Societies, which could be used as a basis for submission.

### 3. The development, use and recording of transferable professional skills. As well as the basic skills of word processing, use of spreadsheets 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 and professional 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 its relationship to professional conduct
- 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 are considered both in terms of communicating science to a range of audiences, and through both oral and written approaches.

The Society will seek evidence of an approach for the development of teams and different roles within teams (including leadership), and general management skills, including task management.

The Society will seek evidence that ethical and regulatory issues are appropriately addressed. While for many students this may 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. 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 and the importance of personal integrity
- 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 the programme. Institutions should provide evidence that there are opportunities for the development of these skills at both levels 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
- reformulate 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 six 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 through both 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 teamwork and leadership skills are developed is a vital recognition of their importance.

**F. Ethical and regulatory issues are appropriately addressed**

Student exposure to and understanding of ethical issues regarding experimentation and its regulation, provides 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 an introduction to codes of conduct and work as a professional scientist. As stated in criterion one, 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 foundation degrees should integrate mathematics, statistics, chemistry and physics. 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. 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 bioscience disciplines. The use of molecular techniques in all areas of biology necessitates the need for chemistry to be included in the curriculum of all bioscience foundation 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 may 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 may 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. This section is primarily concerned with mathematical problems rather than logistical problems, see 3C.

##### **D. Students should be equipped with the mathematics needed to handle variation at different levels**

Provide an overview of the statistics learning outcomes and where they are acquired.

##### **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 foundation degree title.

While foundation degrees accredited by the Royal Society of Biology may involve a great deal of specialisation, they should have some underpinning general knowledge of the basic fundamentals in biology, including: an overview of biodiversity, the cell, basic genetics, the concept of evolution, biochemistry and molecular biology, and organismal 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, evolution, biochemistry, molecular biology, and organismal biology**

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 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 that some of the core topics 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**

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 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 refer to the guidance in the Biosciences Benchmark Statement (but within the context of the level of award; note the “typical standard” in the Benchmarks refers to honours degrees). ([www.qaa.ac.uk/assuring-standards-and-quality/the-quality-code/subject-benchmark-statements](http://www.qaa.ac.uk/assuring-standards-and-quality/the-quality-code/subject-benchmark-statements)) and the QAA Foundation Degree Characteristics Statement (<http://www.qaa.ac.uk/en/Publications/Documents/Foundation-Degree-Characteristics-15.pdf>).

## 6. Development of creativity and innovation relevant to the work place

Developing creativity and innovation in graduates should be an implicit part of the student experience. These characteristics will serve graduates well, wherever they plan to make their careers.

Institutions should provide evidence that they encourage students to be creative by thinking differently and they should describe the steps they have taken towards providing an environment that promotes creativity and innovation. Institutions should also make it clear 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 that they encourage students to be creative by ‘thinking differently’**

HEIs should provide evidence that they promote a creative mind set 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 and make interdisciplinary connections
- consider problems from the perspective of non-biologists

**B. HEIs should describe steps that 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 the 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
- the building of confidence in 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**

HEIs should make it clear 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. As an example for the former, students could be asked how they have utilised a specific technique during creative problem solving. Students should not be awarded marks solely on the basis of 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 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 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 RSB, the Panel may come in contact with individually identifiable, commercially sensitive and/or confidential information. Panel members must treat all information received or obtained while performing any duties on behalf of the RSB 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 RSB's Degree Accreditation Programme, members of the panel must undertake to:

- Inform the RSB of any potential conflicts of interest as soon as possible
- Not use their position as a member of the 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 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 RSB
- 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 RSB reserves the right to revoke membership of the Panel if any panel member does not abide by this Code of Conduct.

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

Figure 2 – Decision Approval Process



## 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 foundation 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 Panel will meet with (ideally no more than 10) key individuals from the programme team. The Panel may request particular individuals to be present, and the programme leader, the HE lead in the College (or representative from the validating body) and assessment officer (or equivalent) should be present. The HEI should provide name boards including job titles for all attendees of this meeting.

The 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 the Assessment 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 Panel about their learning experiences. The Panel ask that a selection of 8-15



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 Panel a chance to see laboratories and other facilities available to students on the programme(s) 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 Panel may request to see particular laboratories or facilities and advanced notice will be given if this is the case. Where visits to particular facilities that may have restricted access are required, the HEI is kindly 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 RSB if this is not a suitable time for the tour.

**14:15 – 16:00 (approx.) Private meeting of the Panel**

A private meeting room should be provided. The Panel may require that additional documentation is made available during this meeting. Therefore, the contact details of a member of staff, who will be available to assist, should be provided. 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 timing of the feedback session is flexible depending on the private meeting of the 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 RSB'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 foundation degree programmes will be entitled to:

- Receive a certificate of Accreditation from the Royal Society of Biology
- Promote the accredited foundation degree programme(s) and the benefits of studying and graduating from an accredited programme in marketing materials
- Use the Royal Society of Biology's name and logo on all materials relating to an accredited foundation degree programme(s)
- Use the Royal Society of Biology's name and logo on the HEI's website in relation to the accredited foundation 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 foundation degree programme(s)
- Use the Royal Society of Biology's name and logo on other marketing materials relating to the accredited foundation 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 foundation 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 Registered Science Technician (RSciTech) and Registered Scientist (RSci).

- 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 foundation 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 referring 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 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 status awarded afterwards, if appropriate.

HEIs with relevant programmes should contact the Accreditation Team in advance of their application.

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.

- If assessors feel the course demonstrates the potential to meet the required outcomes, a site visit will be scheduled, as detailed in Appendix D
- Following the site visit, the 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.

If the Panel is satisfied that the required outcomes for accreditation will be achieved, they can recommend to the RSB Accreditation Committee that the programme should be awarded interim accreditation. An interim accreditation Stage Three Report will be sent to the HEI where actions relating to conditions or recommendations should be evidenced. The HEI will have a period of six weeks to complete the Stage Three Report and provide any supporting documentation. Interim Accreditation is not formally awarded until the Stage Three Report has been completed.

- 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.

### Interim to Full Accreditation

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 Panel for improving the programme are being acted upon.

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



Should the 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.

Programmes will be awarded full accredited status for the remainder of the initial five year period, unless a site visit is required. If a site visit is required, full accredited status will be awarded for a period of five years from the date of ratification.

### Guidelines for publicity following award of interim accreditation

Following the 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 foundation degree programme(s)
- 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 foundation 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 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 referring to the Foundation 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 – 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** Acknowledgement by an external body that a degree programme meets certain prescribed specifications.

**Foundation degree** Integrates academic and work-based learning through close collaboration between employers and higher education providers

**Interim Accreditation** 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** 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 below:



Table based on [www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Bologna-Process-in-HE.aspx](http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/Bologna-Process-in-HE.aspx) and [www.qaa.ac.uk/en/Publications/Documents/qualifications-frameworks.pdf](http://www.qaa.ac.uk/en/Publications/Documents/qualifications-frameworks.pdf)

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 (e.g. PhD/ DPhil (including new-route PhD), EdD, DBA, DClinPsy)*
7	Master (M)	11	M	Second cycle (end of cycle) qualifications	Masters degrees (e.g. MPhil, MLitt, MRes, MA, MSc)
					Integrated Masters degrees** (e.g. MEng, MChem, MPhys, MPharm)
					Postgraduate diplomas
					Postgraduate Certificate in Education (PGCE)***
6	Honours (H)	10	H	First cycle (end of cycle) qualifications	Bachelor's degrees with honours (e.g. BA/BSc Hons)
					Bachelor's degrees
		9	3		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 (e.g. 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](http://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.

<b>Outcomes-based procedures</b>	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.
<b>Programme</b>	A coherent learning experience followed by an individual, the successful completion of which results in the conferment of a named HE award.
<b>Programme specification</b>	A concise description of the intended learning outcomes of an HE programme, and the means by which the outcomes are achieved and demonstrated.
<b>Programme structure</b>	Content of the programme, including mandatory and optional modules, rules for combining units and any specified pathways.
<b>QAA</b>	The Quality Assurance Agency for higher education responsible for maintaining standards across UK HEIs ( <a href="http://www.qaa.ac.uk">www.qaa.ac.uk</a> ).
<b>Quality Assurance</b>	A range of review procedures designed to safeguard academic standards and promote learning opportunities for students of acceptable quality.
<b>Royal Society of Biology Foundation Degree Accreditation</b>	Follows an independent and rigorous assessment of foundation degree programmes which contain a solid academic foundation in biological knowledge and key skills, and prepare graduates to address the needs of employers.
<b>Subject benchmark (UK)</b>	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.
<b>Work-based learning</b>	Includes a wide range of provisions where the focus of student learning is delivered in the workplace. The curriculum meets the needs of both the HEI and employers and is jointly planned, delivered and assessed. It requires the identification and achievement of defined and related learning outcomes.
<b>Work-related learning</b>	Derives from the context of work but which is wholly campus based and includes activities such as business simulation, role play, case studies or reports arising from visits to companies, field trips or similar. ( <b>QAA Quality Code Chapter B3, 2011</b> ).
<b>Work experience</b>	A specified period of time that a person spends with a business, during which they have an opportunity to learn directly about working life and the working environment. Some work experience positions offer people the chance to try their hand at particular tasks, others simply provide an opportunity to watch and learn. The nature, length and arrangements for work experience vary greatly ( <a href="https://www.gov.uk/guidance/national-minimum-wage-work-experience-and-internships#what-is-work-experience">https://www.gov.uk/guidance/national-minimum-wage-work-experience-and-internships#what-is-work-experience</a> ).





## 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 17,000 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, which include:

- **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
- **Post-nominal letters:** Associates, Members and Fellows of the Society can use the appropriate post-nominal letters (AMRSB, MRSB or FRSB) to signify their status as a professional biologist





To find out more about degree accreditation  
visit [www.rsb.org.uk/education/accreditation](http://www.rsb.org.uk/education/accreditation)  
or contact the Accreditation Team at  
[accreditation@rsb.org.uk](mailto:accreditation@rsb.org.uk)

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