![Institute of Biomedical Science Education — IBMS logo]

Criteria and Requirements for the Re-accreditation of MSc Degrees in Biomedical Science

September 2021 – July 2022

This document details the requirements for submission of documentation for re-accreditation of MSc degree programmes in biomedical science. Separate documents are available for initial accreditation of MSc degrees, and initial accreditation / re-accreditation of BSc honours level degrees. The Institute does not accredit Higher National Certificates/Diplomas or Doctorate level programmes.

The accreditation process will rely on documents being submitted electronically and reviewed by an IBMS-appointed panel, followed by online meetings with representatives of the university, students and employers.

These arrangements will apply equally to UK and non-UK education providers and be in place until July 2022.

For further information about accreditation please contact the Education Office (education@ibms.org).

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INTRODUCTION

The Institute of Biomedical Science (henceforth referred to as IBMS) is the professional body for biomedical scientists and has been accrediting biomedical science degree programmes since the 1970's.

IBMS accreditation is a process of peer review and quality enhancement that ensures professional standards of education and training standards, that are suitable for employment in the biomedical science sector have been achieved.

Biomedical science is concerned with the integration of a wide range of subjects to understand the science of causes, diagnosis and treatment of disease (pathobiology or biology of disease). Accreditation is specific to the programme description, which must clearly demonstrate the modules/units contributing to the degree award and mode of delivery.

MSc Programmes in biomedical science may be broad biomedical science or single discipline as defined within the Quality Assurance Agency (QAA) Subject Benchmark Statement for Biomedical Sciences (latest edition October 2019). MSc programmes are not accredited specifically as a qualification suitable for registration with the Health and Care Professions Council (HCPC), although it is possible some modules may contribute to subject specific requirements.

At M level the indicative subject areas should reflect areas of study that relate to the indicative syllabus for IBMS qualification awards such as the Specialist Diploma and Higher Specialist Diploma in the traditional disciplines of cellular pathology, clinical biochemistry, clinical immunology, haematology, medical microbiology and transfusion science, and also in quality, training and management in pathology. Given that with clinical genetics these subject areas are increasingly being reconfigured into Blood Science, Cellular Science, Tissue Pathology, Infections and Molecular Science in major pathology service units in the NHS, it is expected that a range of titles will be used and that these will reflect the predominant emphasis of the award.

Following a period of initial accreditation, all programmes are reviewed on a five-year cycle of re-accreditation. This is an opportunity to reflect on course developments, review the accumulation of minor changes and quality enhancements, external drivers and ensure the programme continues to meet the current IBMS criteria for degree accreditation.

SECTION 1: PROGRAMME RE-ACCREDITATION PROCESS

The re-accreditation process and guidance are facilitated through the IBMS Education Office, and all communication should be through this route unless otherwise specified.

The Institute will normally appoint a panel of one academic representative and one practitioner representative, in addition to an IBMS education lead to review the submitted documentation and discuss aspects of the proposed programme with representatives of the education provider, employers and students. The Institute may also appoint additional members of the panel for the purpose of training or quality assurance.

Re-accreditation will normally be conducted by document review. Virtual meetings with the programme leader, students and employers may be held if areas need to be explored further.

Re-accreditation reviews will only be considered between October and the end of June to allow for appropriate processes to be completed for student admissions in the following September. Applications for re-accreditation must be received by the end of March at the latest. A single fee is payable to the 'Institute of Biomedical Science' on application for re-accreditation.

Re-accreditation is normally awarded for a period of five years from the time programme accreditation is awarded.

There are three main stages to the re-accreditation process.

STAGE ONE

1.1   Once an application has been acknowledged, an IBMS panel will be appointed, and the university notified. Dates for submission of documentation and virtual meetings will then be agreed.

1.2   Education providers applying for IBMS re-accreditation of degree programmes are expected to provide detailed submission documents according to the requirements in Section 2 this document.

1.3   Documents must be submitted electronically by the agreed date for consideration by the IBMS panel. This is usually a minimum of eight weeks before the scheduled re-accreditation event.

1.4   Documents must be relevant to the programme and should focus on the requirements for re-accreditation (detailed in Sections 3 and 4 of this document and the Appendices). Documents should be provided individually in word or pdf format and must be clearly identified in the file title. Pages must be numbered, and the

content of the document listed. A descriptive list of documents is provided in section 2 and a checklist in Appendix 3.

STAGE TWO

1.5 Following receipt of the documentation the IBMS re-accreditation panel will confirm that submitted documentation is complete and sufficient to indicate the programme can achieve IBMS re-accreditation, subject to the outcomes of the review. Missing documentation will be requested prior to any meetings being arranged and must be provided in sufficient time for the panel to review them in advance of the meeting.

1.6 If further clarification of the documentation is required an interim report is produced and the education provider will be asked to respond with within four weeks. Following this, a virtual meeting with the Programme Team will be arranged if additional clarification is required.

1.7 The panel will produce a final outcome report. Final reports will detail any conditions required for re-accreditation and in addition any recommendations and commendations that have been identified. The report is signed off by the IBMS accreditation panel.

STAGE THREE

1.8 The report could have the following outcomes

Outcome 1. Re-accreditation without conditions

The education provider has successfully demonstrated it meets the criteria for re-accreditation.

The Panel may wish to make recommendations that are felt to provide an opportunity to refine or improve the education provider's approach to meeting the IBMS accreditation criteria. A response to recommendations is not required for re-accreditation but it is expected that the programme team will consider them for potential action points. Responses to recommendations should be reflected in subsequent re-accreditation documentation.

The Panel may also wish to make commendations for examples of good practice.

The Education Lead provides a summary report of outcomes and a copy of the full review report to the Education and Professional Standards Committee (E&PSC) for approval.

Following committee approval, the education provider is formally notified that the programme has been re-accredited and the re-accreditation certificate awarded. The list of accredited degrees for the IBMS website is updated.

If E&PSC has any concerns these will be discussed with the Education Lead who was lead for the accreditation panel and the Executive Head of Education. The Programme Leader will be contacted through the Education Office and invited to respond to the concerns. If necessary, a condition for accreditation and time limit for achieving this might be applied.

Outcome 2. Re-accreditation with conditions

The education provider has demonstrated it meets most of the criteria for re-accreditation, but the panel have identified areas where the criteria are not met.

Any conditions are cross-referenced to the re-accreditation criteria and a time limit given for addressing them is identified (usually three months).

The Panel may wish to make recommendations that are felt to provide an opportunity to refine or improve the education provider's approach to meeting the IBMS accreditation criteria. A response to recommendations is not required for accreditation but it is expected that the programme team will consider them for potential action points. Responses to recommendations should be reflected in subsequent re-accreditation visit documentation.

The Panel may also wish to make commendations for examples of good practice.

The education provider will be required to respond to the conditions by the set date. Documentation to support the responses will be required with any changes clearly highlighted.

Documentation submitted in response to conditions for re-accreditation is reviewed electronically with the accreditation panel to confirm conditions have been met or whether further action is required.

Once it has been confirmed that conditions for re-accreditation have been met, the Education Lead provides a summary report of outcomes and a full copy of the review report to the E&PSC for approval. A recommendation will be made to the E&PSC for a period of re-accreditation (usually five years).

If E&PSC has any concerns these will be discussed with the Education Lead who was lead for the accreditation panel and the Executive Head of Education. The Programme Leader will be contacted through the Education Office and invited to respond to the concerns. If necessary, a further condition for accreditation and time limit for achieving this might be applied.

Outcome 3. Re-accreditation declined

In exceptional circumstances the panel may decide that the education provider has failed to demonstrate it meets the majority of criteria for re-accreditation and in addition, from the discussions they have concluded that the education provider has not been able to give sufficient assurance that if conditions were to be set, they could be met in advance of the next academic year.

The panel will identify which re-accreditation criteria have not been met in the outcome report and the reasons for their decision. The panel will not make any recommendations or commendations at this stage.

The Panel has the option to request additional information for review if it decides there is the potential to rectify the situation. The education provider will be given the opportunity to provide this information and once reviewed the Panel will reconvene the process. Alternatively, the education provider may withdraw from the re-accreditation process. This will not prejudice future applications by the education provider for accreditation of the programme.

If the Panel decide the programme is not suitable for re-accreditation and does not have the potential to rectify the situation the Education Lead will provide a summary report of outcomes and a full copy of the review report to the E&PSC for approval.

If E&PSC has any concerns these will be discussed with the Education Lead who was lead for the accreditation panel and the Executive Head of Education.

1.9   The education provider will be notified in writing of the Committee decision and their right to appeal. If an appeal is received the appeals process will be followed (see below).

1.10   Accredited programmes will be advertised on the Institute's website and the education provider will receive an accreditation certificate for the period of accreditation and permission to use the Institute's Accredited University logo. Only programmes that have current accreditation will be advertised on the Institute's website. The education provider will be expected to provide annual monitoring information when requested by the IBMS (see Appendix 1 Section B for further information).

1.11   Failure of the education provider to maintain compliance with the criteria for accreditation will trigger a review by the Institute that may result in withdrawal of the accreditation status of the programme or programmes.

1.12   Following a period of initial accreditation all programmes are reviewed on a five-year cycle of re-accreditation. Education providers requiring re-accreditation of their programmes will be contacted by the IBMS at the beginning of the final academic year of their accreditation period.

RIGHT OF APPEAL

Once the education provider has been formally notified of any conditions for accreditation, they have the right of appeal within one month of the accreditation event if they feel the accreditation criteria have not been applied fairly or it is felt the accreditation panel has overlooked evidence that the conditions have been met.

Appeals should be put in writing to the IBMS Education Department stating the reasons for the appeal.

Appeals will be reviewed by the Executive Head of Education, Education Lead for the Panel, Chair of the IBMS Education and Professional Standards Committee and the Committee's academic representative.

SECTION 2: DOCUMENTS FOR RE-ACCREDITATION

The re-accreditation review will determine how the programme complies with the IBMS re-accreditation requirements detailed in Sections 3 and 4 of this document. Additional reference information is provided in the appendices.

A key submission is a **Self-Reflection Document** that provides an evaluation of the student learning experience and student achievement. It is important that the document should reflect on both strengths and weaknesses in the provision based on the quality assurance and monitoring processes and actions arising from these.

The report must be presented under the following headings and where appropriate cross-referenced to supporting documents provided for the re-accreditation process.

- Curriculum design, content and organisation, including any changes since the previous accreditation.
- Teaching, learning and assessment.
- Student progression and achievement, including destinations post-graduation.
- Student support and guidance.
- Learning resources.
- Research.
- Quality management and enhancement.
- Employer/service user engagement.

Supporting evidence to be included:
- Copies of internal annual monitoring reports, including NSS.
- Copies of external examiner reports and responses
- Evidence of student engagement in programme development
- Minutes of employer liaison meetings
- Monitoring of placements (if applicable)

The following list should be used as a checklist for submitting updated (current) documentation (available in Appendix 3 as a table to copy and cross-reference sources of information). **Documentation must be submitted as evidence of compliance with the IBMS accreditation requirements.** To assist the Panel all documents must be relevant to the programme, provide evidence to address the requirements of specific criteria, and be easy to navigate for the accreditation panel to find information.

a) Programme specification
The purpose of programme specifications is to act as a definitive record of the course, setting out the course's intended aims and learning outcomes and how these are met. A synopsis of the course for each qualification conferred by the education provider that is being considered for accreditation must be provided. This acts as a reference point for the delivery, assessment, monitoring and review of the programme and should be designed to

be shared with academic and support staff, students, internal and external examiners, professional and statutory bodies, and academic reviewers.
Relevant criteria: 4.1 i), 4.2 i)

b) Course Handbook
This document will serve as the main reference for students, academic staff, University Administrative Office staff and external examiners. It must include the following information some of which will contained in the Programme Specification:

General information: Course title, duration, modes and all named award titles; course aims and learning outcomes; rationale for the design of the programme; external liaison arrangements with employers and the Institute; information on the relevance of the IBMS and HCPC to the programme.
Relevant criteria: Section 3, 4.1, 4.2 ii), 4.3 ii), 4.3 iii), 4.4 iv)

Programme management: Faculty/school support and resources. Infrastructure of teaching and research and relationship with similar courses. Staff development arrangements, including arrangements for external lectures. Quality assurance processes, including a process of external examination.
Relevant criteria: 4.1 i), ii), iii), vi), 4.2 vii) 4.3 iii), 4.4 v) vi)

Admissions requirements: Knowledge and skills; access arrangements; credit transfer; APL; selection procedures; student induction; equal opportunities.
 Relevant criteria: 4.4 i), ii), iii), iv)

Assessment: Details of assessment strategies and rationale; schedule of assessment; Assessment Board arrangements; details of penalties for late submission of coursework; approaches to preventing plagiarism. An assessment mapping document should be available which explicitly shows the module name, code and type of assessment.
Relevant criteria: 4.4. i), ii), iii), iv)

Modules: There must be clear descriptions of the modular content of the whole programme and mode of delivery (lectures, practicals, tutorials, flexible learning, summary timetables), including the level and credit points of each component with learning outcomes and methods of assessment. Practical classes / incorporation of laboratory / technical skills and competencies should be evident.

The contents of each individual module must have sufficient detail to indicate the depth and breadth of its contents and indicative reading. Reading lists and other resources for each module must be current and appropriate.

Where university regulations restrict the amount of information in module descriptors a list of the lecture series should be included with a brief synopsis of the content covered.
Relevant criteria: Section 3.1, 3.2, 3.3, 3.4, 3.5, 4.2.iii), iv), viii), v), vi),

Project arrangements: These should include full details of the project organisation and support available (e.g., supporting lecture programme; amount of supervision available, etc.), information on the production/structure of the dissertation; assessment arrangements, and if applicable funding arrangements, responsibilities of work-based supervisors. A separate project Handbook would be preferred.
Relevant Criteria: section 3.5, 4.4.v)

Placement arrangements (where applicable): A summary must be included in the course handbook to demonstrate students are provided with sufficient information to make informed choices.
Relevant Criteria: 4.5 i, iv, and v)

c) Student Handbook (if different from Course Handbook)
The student handbook must provide adequate information regarding relevant regulations and policies, programme content, placement opportunities (if applicable), project arrangements, pastoral care arrangements, student support mechanisms, student representation system, career opportunities and the role of professional and regulatory bodies. Information about membership of the IBMS (www.ibms.org) and registration with the HCPC (www.hcpc-uk.org), and the differentiation of the two, must be clear and accurate with links to the websites.
Relevant criteria: 4.2 ix), 4.4 i) – vii)

d) Placement Handbook (if applicable)
Detailed information must be documented in a Placement Handbook with specific information regarding the responsibilities of students, placement providers and the education provider. Information must include preparation for placements, support and expected outcomes.
Relevant criteria: All listed in section 4.5

e) Short CVs of academic teaching staff
These must also include CVs of external practitioners contributing to the teaching of discipline specific subjects.
These should be in a standardised format and contain only the following information:

- Name and title
- Present post
- Main teaching activities relevant to the programme
- Other activities relevant to the programme e.g., placement co-ordinator/tutor
- Academic qualifications
- Professional qualifications
- Professional membership/involvement (last three years only)
- External professional activities (last three years only)
- Research interests/profile (last three years only)
- Publications (last three years only)
- Other professional development opportunities/support

Relevant criteria: 4.1.v)

f) Employer liaison meeting minutes (with indicative membership)
The Employer Liaison Group (ELG) is expected to have a formal meeting at least one a year, either meeting face to face or on-line (e.g., Zoom, MS Teams).
Relevant criteria: 4.1 iv), 4.3 ii)

SECTION 3: SPECIFIC REQUIREMENTS OF THE PROGRAMME CURRICULUM

The Framework for Higher Education Qualification in England and Wales (FHEQ) defines Masters Level as presupposing that students can show originality in the application of knowledge, and the ability to deal with complex issues both systematically and creatively, showing originality in tackling and solving problems.

Furthermore, postgraduate study involves development of reflective practice, such that the individual can modify personal professional activity, critically evaluate scientific information sources and methodologies and possess the capacity to carry out such activities autonomously.

The aim of professional body accreditation is to ensure that, through a spirit of partnership between the IBMS and education provider a good quality degree is achieved that prepares the student for employment in circumstances requiring sound judgement, critical thinking, personal responsibility and initiative in complex and unpredictable professional environments.

More specifically, MSc Biomedical Science programmes should aim to produce graduates who:

- have a flexible approach to problem-solving in the field of biomedical science;

- have sufficient knowledge/skills to enhance their biomedical science practice at a supervisory level;

- are able to work independently, reflect on their practice and use initiative in solving the diverse problems that may be encountered;

- are capable of developing a critical appraisal of the relative merits and limitations of the techniques employed in their chosen specialism within biomedical science;

- are able to develop a responsible attitude to the promotion of new developments and the maintenance of standards within biomedical science.

If the degree is obtained outside of the UK and the student's first language is not English, the education provider will also need to provide evidence that graduates meet the International English Language Testing System[1] (IELTS) standard level 7 or equivalent.

[1] The International English Language Testing System (IELTS) tests competence in spoken and written English. The HCPC accepts a number of other tests as equivalent to the IELTS examination. Please visit their website (www.hcpc-uk.org) for more information.

3.1   Specific requirements of programme content

i.   The learning outcomes of the curriculum of taught postgraduate courses must meet, if not exceed, those stipulated in the relevant qualification descriptors for a higher education qualification at M level

ii. There should not be more than 25% of undergraduate level content in a Masters programme. (This may be subject to amendment depending on possible alterations to the Quality Assurance Agency regulations)

iii. Accredited programme should be able to demonstrate the following objectives:

  • acquisition of a sound knowledge base to support understanding of current and future aspects of biomedical sciences encountered in the working environment, for example: quality assurance, clinical application of investigative techniques, clinical governance, leadership and management.

  • development of relevant knowledge and skills in appropriate branch(es) of biomedical science for the identification and resolution of problems

  • development of competence in design and execution of research and interpretation of data

  • appreciation of the advantages, limitations and applications of a range of biomedical techniques

  • enhancement of skills in the communication of information and research results

  • experience in completing a substantial critical research project

iv. The research project will normally be laboratory based within a discipline of biomedical science. The research project must contribute at least one third of the total credits constituting the award of Masters degree.

v.   Structure of the project and arrangements for supervision and assessment must be clearly defined. This is particularly important for part-time programmes to ensure they have the necessary support and resources either within a student's workplace or in the degree awarding institution. When a student is undertaking a project outside the awarding institution, a local supervisor must have undergone appropriate training.

SECTION 4: GENERAL REQUIREMENTS OF THE PROGRAMME

4.1 Management and resources

i) There should be a clear rationale for the degree programme which clearly supports it as an integral part of the faculty/school with requisite support and resources, which should be sufficient for the projected number of students.

ii) There should be an infrastructure to support the research and teaching for these students, such as student-staff liaison committees, employers' liaison committees and to support placements, if applicable.

iii) The education provider should have a clear strategy to provide adequate physical resources to mount or sustain the programme; including computing, information technology, audio-visual equipment, library and laboratory facilities for research and practical classes.

iv) There must be appropriate input from suitably qualified and experienced biomedical scientists as visiting lecturers to ensure that there is a contribution from the profession for the delivery of the key laboratory specialties. The knowledge of these individuals must be current to the needs of professional practice. Their input should be evidenced through summary CVs that include their teaching commitments.

v) The relationship of teaching staff to the delivery of modules and research interests should be evidenced in summary CVs.

vi) There must be a strategy for supporting on-going research and scholarly activities of teaching staff relevant to the programme and the development of students in biomedical science.

vii) The programme must have regular and effective monitoring and evaluation systems in place.

4.2 Programme delivery

This section may in part be articulated through the programme specification document.

i) The programme specification must highlight the distinct features of the biomedical science Masters degree course(s), including title, overall aims and learning outcomes.

ii) There must be clear descriptions of the modular content and mode of delivery (lectures, practicals, tutorials, flexible learning), including the level and credits of each module, with learning outcomes and methods of assessment. The delivery of subject-specific, transferable and key skills should be evident.

iii) The contents of each individual module must have sufficient detail to indicate the depth and breadth of its contents and where relevant reflect subject areas in Section 6 of the QAA subject Benchmark Statement for Biomedical Sciences (2019). Reading lists and other resources for each module must be current and relevant.

iv) Assessment methods should be clearly related to the aims and objectives of the overall programme and its specific components and related learning outcomes. Assessment methods must be varied, authentic and inclusive. The use of formal, closed book examinations and laboratory practical's must be evidenced across the duration of the programme. These should be clearly described with examples in the submission, together with the education provider's policy on assessment.   Where on-line assessments have been introduced, details of how these are conducted to ensure academic standards are consistent with previous methods must be provided.   If conducted remotely proctoring arrangements must ensure authenticity of the candidates work.

v) Programme teams may wish to stipulate specific attainment standards in such modules (e.g. achievement of a minimum 35% work in examinations) before compensation is allowed. Criteria should be clearly identified within relevant documents such as student handbooks, module descriptors, programme specifications, modules handbooks etc.

vi) Assessment regulations must require a pass mark to be achieved for the project at M level, which must carry at least 60 credits, and take the form of an independent research project. This can be a laboratory or non-laboratory project, but <u>not</u> a 'literature review' (See Appendix 2).

vii) Central to the process of assessment is the involvement of external examiners with responsibility to ensure that standards are comparable with education providers in the UK who are offering IBMS-accredited biomedical science degree programmes. There must be at least one external examiner from the programme team of an IBMS-accredited degree. For overseas institutions the external examiner should also be familiar with UK systems and practices.

viii) Where e-learning forms part of the degree, details will be required on course delivery and modules. Student/tutor and student/student contact time must be clearly defined together with any specific requirements relating to employer support and the use of multimedia communications.

ix) Where the university offers the opportunity for a credit bearing study year abroad as a Pass/Fail year this will not be considered to contribute to the academic curriculum or part of the accredited degree criteria, other than to clarify the information given to students. Similarly, if part of an international exchange programme it cannot be used to replace any part of the accredited degree.

4.3   Staff- and employer-specific

i)   There should be staff development opportunities for all staff involved in delivering the programme, including visiting lecturers.

ii)   There must be arrangements in place to ensure local stakeholders are involved in the development of the programme and continue to be involved to ensure graduates are fit for purpose.   This should include a formal mechanism (e.g., an Employer Liaison Committee) for the views of employers and local IBMS members to contribute to the design of the programme. (See Appendix 1 Section E).

iii) There must be a named liaison contact through whom the IBMS can disseminate IBMS information and request annual monitoring information.

4.4   Student Specific

i)   Admission procedures must give both the applicant and the education provider the information they require to make an informed choice about whether to take up the offer of a place on the accredited programme.

ii)   Entry requirements, together with the selection criteria used for interviews and possible exemption arrangements, should be specified and evidence the requirement for a good command of reading, writing and spoken English. Students must be capable of attaining the equivalent to International English Language Testing System (IELTS) standard level 7 at the point of graduation. Universities admitting students from outside the UK will be expected to provide details of how this is confirmed.

iii) Where there is direct entry after the first year of the programme, there must be a clear policy for assessing students by Accreditation of Prior Learning (APL) to ensure they are able to meet all the learning outcomes in the programme.

iv)   The student handbook must provide adequate information regarding relevant regulations and policies, programme content, placement opportunities (if applicable), and if applicable funding arrangements, responsibilities of work-based supervisors, pastoral care arrangements, student support mechanisms, student representation system, career opportunities and the role of professional and regulatory bodies. Information about membership of the IBMS and its role must be clear and accurate.

v)   Project arrangements should include full details of the project organisation and support available (e.g., supporting lecture programme; amount of supervision available, etc.), information on the production/structure of the dissertation; assessment arrangements. This may be contained in the student handbook or a separate project handbook

vi)   There should be monitoring mechanisms to confirm a student's understanding of policies and procedures and support mechanisms for using them.

vii) There should be evidence of student feedback mechanisms and engagement with programme development.

4.5   Placement-specific

i.   Some education providers may wish to offer an integral placement. Please note that the IBMS does not stipulate the minimum/maximum number of hours students on a placement are expected to work, or whether students should receive payment. This is dependent on local resources and arrangements agreed with the placement provider. The number of students on placements must be submitted as part of the annual monitoring report.

ii. The following criteria (iii – ix) apply if there is a placement (work-based learning) opportunity in an IBMS-approved laboratory, for example for optional completion of the IBMS Registration Training Portfolio. The placement period is still recognised as part of the degree programme and therefore stays within the responsibility of the education provider for student welfare and placement support and is recognised in the final degree award title (e.g., degree + work-based experience).

These criteria do not apply if the student takes a break year from their programme and where the education provider does not recognise or contribute to the placement organisation/experience or is completing a part-time degree whilst in employment. In these cases, the accreditation process only recognises the taught academic components, and the award title of degree must reflect this.

iii. The education provider must maintain a thorough and effective system for approving all placements.

iv. For students undertaking a clinical laboratory (e.g., NHS) placement the laboratory must be approved by the IBMS for pre-registration training, and the placement provider must have an underlying commitment to provide the student with the opportunity to complete all, or part, of the IBMS Registration Training Portfolio. The portfolio is applied for by the training laboratory and provided by the IBMS. It is only valid for completion for the duration of the degree. It does not form part of the degree award.
(*Please note: this does not apply to non-UK programmes).*

v.   For students undertaking an industrial or academic placement during their studies on the degree programme there must be a formal arrangement between the education provider and placement provider underlying the commitment to the placement to provide the student with a meaningful experience that is complementary to their degree.

vi. There must be clear evidence of the collaboration and partnership arrangements between the two organisations, including audit of training standards, monitoring of

students and feedback arrangements, and clear lines of responsibility (student, placement provider and education provider).

vii. There are qualified and experienced staff to deliver student placement education and training and if appropriate the contribution of the placement to the degree award.

viii. Students and practice placement providers/trainers are fully prepared for placement. A placement handbook should be available for students and employers and must contain the following information:
- information provided prior to placement
- timings and the duration of any placement experience
- intended learning outcomes to be achieved and means of assessment
- expectations of professional behaviour
- communication and lines of responsibility/accountability
- support and monitoring during placement
- arrangements for completion and external verification of the IBMS Registration Training Portfolio where applicable.

ix. Learning, teaching and supervision must be designed to encourage safe and effective practice, independent learning and professional behaviour.

x. The measurement of student performance and progression is an integral part of the wider process of monitoring and evaluation and uses criteria that ensure fairness for all students.

xi. Professional aspects of practice are integral to the assessment procedures in both the education setting and practice placement.

SECTION 5: ACCREDITED SCIENTIFIC EDUCATION

Individual modules and exit awards (Postgraduate Certificates and Diplomas) from an IBMS accredited degree is recognised as accredited scientific education for the purpose of CPD.

If relevant to the subject specific content of the QAA subject benchmark descriptors for key pathology disciplines accredited modules could also be used as supplementary education for individuals requiring "top-up" modules for a non-accredited degree. This would require the education provider to demonstrate which modules (or combination of modules) map to specific disciplines as part of the accreditation process and for individual students this would be dependent on:

a) an assessment by the IBMS to identify the proportion of the non-accredited degree that is equivalence to an IBMS accredited biomedical science degree compared for the purpose of registration with the Health and Care Professions Council (HCPC).

b) any shortfall in equivalence being compensated for by accredited modules from the MSc.

APPENDIX 1: GENERAL INFORMATION

A.   Purpose of IBMS accreditation of MSc qualifications

Accreditation is a process of peer review and recognition by the profession of the achievement of quality standards for delivering BSc (Hons) Biomedical Science programmes which conform to the QAA subject benchmark statement for biomedical science (October 2019) and Masters level programmes. The following is not an exhaustive list but highlights the key purposes of IBMS accreditation.

1.   Evidences the achievement of a benchmark standard of education specific to careers in biomedical science.

2.   Promotes the development of specific knowledge and competence that advances professional practice to benefit healthcare services, patients and professions related to biomedical science.

3.   Ensures curriculum content is both current and anticipatory of future change.

4.   Ensures research is embedded in academic teaching and student development.

5.   Facilitates peer recognition of education and best practice and the dissemination of information through education and employer networks.

6.   Ensures qualification is fit for purpose and relevant to employment in the biomedical science sector.

7.   The degree award provides access to professional body membership as a Member and/or Chartered Scientist.

8.   Strengthens links between the professional body, education provider, employer and student.

B.   Framework for higher education qualifications

The Framework for Higher Education Qualification in England and Wales (FHEQ) defines Masters Level as presupposing that students can show originality in the application of knowledge, and the ability to deal with complex issues both systematically and creatively, showing originality in tackling and solving problems.

Students at this level should be able to demonstrate:

- a systematic understanding of knowledge and a critical awareness of current problems much of which, is at, or informed by, the forefront of the academic discipline.

- a comprehensive understanding of techniques applicable to their own research.

- originality in the application of knowledge.

- A conceptual understanding that enables the student to evaluate critically current research in their discipline.

Masters Graduates should be able to:

- deal with complex issues systematically and creatively and communicate findings to specialists and other professional groups.

- demonstrate self-direction and originality in problem-solving across a variety of areas.

- continue to advance their knowledge and understanding, and to develop new skills to a high level and possess the necessary qualities and transferable skills at an advanced professional level.

C.   Awarding and maintaining accreditation

As part of a continuing and substantial programme, the Institute will consider accrediting or re-accrediting full time and part time postgraduate degree programmes relevant to biomedical science as defined by the QAA Subject Benchmark Statement October 2019. (Note: The benchmark statement defines the subject area of biomedical science relating to BSc Honours degrees in Biomedical Science).

Although there are no specific QAA subject benchmarks relating to Biomedical Science at postgraduate level, Institutions should ensure that the learning outcomes of postgraduate courses at least meet, if not exceed, those stipulated in the relevant qualification descriptors for a higher education qualification at level 7 (Master's degree) as defined by the QAA Master's Degree characteristics statement, February 2020 https://www.qaa.ac.uk/docs/qaa/quality-code/master's-degree-characteristics-statement.pdf?sfvrsn=86c5ca81_18.

Accreditation is normally awarded for a period of five years. The education provider is awarded an accreditation certificate for the named programme(s) and period of accreditation. They also receive formal notification that they can advertise their programme using the IBMS accreditation logo. At the end of this period, the programme is eligible for re-accreditation. One-year extensions to accreditation may be granted if the education provider is undergoing reorganisation change or planning to introduce significance changes, provided it can be demonstrated that the accreditation criteria continue to be met.

Education providers are required to identify a university liaison officer, who is the main point of contact between the university and the Institute.

Changes made to the programme

It is a condition of accreditation that the education provider must notify the IBMS Education Office of any proposed changes that are related to the criteria for accreditation described in this document and would be different from the programme at the time the current period of accreditation was conferred. For example, changes that might affect the delivery and outcomes of the programme, course title, new pathway, overall aims or changes to academic teaching staff. A clear rationale for the changes must be provided. Proposed changes must ensure the programme continues to meet IBMS accreditation criteria and be approved by the Institute following submission of relevant documentation. A change form is available on the IBMS website or by request from education@ibms.org and must be completed <u>before</u> the changes are introduced.

Re-accreditation

During the final year of student admission, the education provider will be notified that re-accreditation documentation will need to be submitted for review and which can be regarded as an opportunity for periodic review and a quality enhancement of the programme. This is conducted in accordance with the specific and general guidelines appropriate to initial accreditation, with additional requirements. This is all specified in a full re-accreditation document.

A database of accredited programmes is held by the IBMS and updated as contact details or accreditation status changes. The list of accredited programmes is also published on the IBMS website.

For further information about accreditation, please contact the Education Office (education@ibms.org).

D.   Students and the IBMS

During their degrees, students are eligible to become an IBMS eStudent member (and receive an online subscription to our monthly magazine *The Biomedical Scientist* and quarterly publication the *British Journal of Biomedical Science*, plus many other benefits. The IBMS offers a group discount to universities wishing to purchase student membership for 10 or more students. Further information can be obtained by emailing subs@ibms.org.

All BSc graduates are eligible to join the IBMS as a Licentiate member.

Individuals awarded a Masters degree accredited by the Institute are eligible for the title of Chartered Scientist and the designation CSci if they meet the other eligibility criteria of corporate membership and active engagement in CPD.

A Masters level qualification will also give eligibility to apply for entry into the membership grade of Member and designation MIBMS for individuals who are not already members of the Institute.

E.   University/Employer Liaison

One of the requirements for all education providers seeking IBMS accreditation or re-accreditation of both undergraduate and postgraduate programmes is that there is satisfactory liaison with local employers as a formal mechanism for the views of employers and local Institute members to be taken into consideration in the design etc of the course. Ideally, this would include representation from the local region or branch of the IBMS as this provides a means of enhancing communication between universities, employers and the Institute.

In the context of university/employer liaison employers are seen as professional advisors who are experienced practitioners capable of having input to the development and improvement of courses by advising on subject-specific areas for theoretical knowledge and practical skills that underpin predominately professional training in pathology disciplines. However, not all students seek employment in pathology laboratories ands input from employers working in other biomedical science sectors may also be considered desirable, and essential where placement opportunities are being offered. Some of these advisors may have a teaching role on the course on a part time or visiting basis.

The ELG is expected to have a formal meeting at least one a year, either meeting face to face or on-line (e.g., Zoom, MS Teams).

Role of Employer Liaison Group (ELG)

The role of the ELG can apply to single of multiple programmes accredited by the IBMS. Minutes of the meetings should reflect the following roles of the ELG for each programme:

- offer expert advice to the Programme Leader and academic team on the content and relevance of the degree to professional practice in clinical pathology laboratories
- ensure that the delivery and structure of the programmes considers the support required from the laboratory (e.g., placements, teaching)
- contribute to the periodic review of degree programmes in line with service requirements and professional/regulatory standards
- advise on new opportunities in biomedical science education that could enhance education and training in biomedical science
- inform the education provider of changing needs relating to service delivery and employment as a biomedical scientist.

Specific to programmes with awork-based placement:

- ensure the students are trained in a supportive environment and fit to practice on graduation
- ensure that the quality of training is provided by reviewing student experience and making recommendations to enhance the quality of this experience.

The membership of the group should include:

- Chairman (usually the Programme Leader)
- Two -three academic representatives from the programme team for biomedical science
- professional representatives in each discipline from local employers
- local IBMS branch or regional member representative where available

The benefits of university/employer liaison committees are to:

- ensure biomedical science practitioners can input to the design of the programmes
- ensure the programmes reflect the professional ethos of biomedical science
- ensure the programme are current to the requirements of biomedical science and its practitioners
- ensure the programmes meet the needs of local employers
- provide useful advice/feedback from prospective employers
- provide laboratory placement and employment opportunities for students and graduates
- enable research strategy to include potential partnerships with employers.

F.   External Examiners

Most universities will have a well-established external examiner policy and remit for their duties. The following information is provided as a general overview. The IBMS will expect to see External Examiner reports as part of the documentation for re-accreditation and references to them as part of its annual monitoring process.

Purposes and Functions of the External Examiner System

The External Examiner is involved in the quality assurance processes for a programme throughout the annual cycle, usually for a three- or four-year term of office. During the academic year the External Examiner is sent the draft of the Examination papers to review. Timings being dependent upon the university's academic cycle and processes (i.e whether there are exams after the first and second semester, or just at the end). They are asked to review the examination questions to confirm that they match the learning outcomes of the module and are appropriate for the level (i.e year) of study. They can give feedback and suggest rewording of the questions to ensure a progression of learning standards throughout the programme. The examiner is also an independent view on the questions and

can perhaps see where a question could be interpreted several ways and may suggest rewording to ensure clarity.

The primary roles of External Examiners are to ensure: -

- that the standards set for the University's awards and a programme's constituent courses are appropriate by reference to relevant national Subject Benchmark Statements, the National Qualifications Frameworks, the relevant Programme Specification and, where appropriate, the requirements of relevant Professional and Statutory Bodies;
- that the standards of student performance in a programme and its constituent courses are appropriate and comparable with those of other IBMS accredited programmes;
- that the processes for assessment, examination and the determination of awards are sound and have been conducted fairly in accordance with university regulations.

If required, further information is available from education@ibms.org

APPENDIX 2: RESEARCH/CAPSTONE PROJECTS

Adapted from "*Choosing your Bioscience Final Year research, Honours or Capstone Project*" guide for students.
Available at: **https://bit.ly/ChoosingBioCapstone**

Laboratory or Fieldwork (possibly undertaken remotely)
BRIEF DESCRIPTION: The aim of these capstones is gain research experience, either in the laboratory or field, and to develop research, experimental and technical skills. In the current circumstances of Covid-19, with restricted access to research facilities, some of this research experience may be gained remotely using simulations, virtual reality or pre-existing data or information.
KEY SKILLS DEVELOPED: Research skills, experimental and technical skills, analytical and numerical skills, experimental design, independent and team-working, planning and organisational skills, resilience.
IDEAL FOR: Careers in scientific or medical research. Careers in analytical or similar laboratories. Careers where knowledge or experience of the research process is required e.g., clinical trials, regulatory affairs, academic medicine, scientific writing.

Big Data and Bioinformatics
BRIEF DESCRIPTION: The aim of these capstones is for you to use existing very large datasets or other sources of information to address research questions relevant to your degree or discipline using bioinformatics, data mining, analysis and visualisation, or similar tools and approaches. These sources of data/information could include large publicly available datasets or information sources or historical data from research groups within your School or Department
KEY SKILLS DEVELOPED: Research skills, experimental design, data mining, analysis and visualisation, numerical and analytical skills, use of large datasets, digital tools and technological skills, critical thinking, planning and organisational skills.
IDEAL FOR: Careers involving the handling, analysis and interpretation of large datasets/information, may be scientific research but could be in other areas e.g., artificial intelligence, policy development, sales and marketing, business development or consultancy. Careers involving the storyboarding or dissemination of information, or the use of digital tools and technologies.

Computer modelling or simulations
BRIEF DESCRIPTION: The aim of these capstones is gain research experience investigating the physiological, pharmacological or biochemical modulation of established models or simulations of body systems, organs or tissues (e.g., intact animals, heart, neurones). For models or simulations used in student education, it could include an evaluation of the scientific accuracy, validity and educational benefits of these.
KEY SKILLS DEVELOPED: Research skills, use of computer models and programmes, analytical and numerical skills, experimental design, independent and team-working, planning and organisational skills.
IDEAL FOR: Careers in scientific or medical research, or education. Careers involving the use of digital tools and technologies. Careers where knowledge or experience of the research

process is required e.g., clinical trials, regulatory affairs, academic medicine, scientific writing.

Systematic Review with quantitative data-analysis

BRIEF DESCRIPTION: Systematic reviews are a highly systematic, pre-defined way of undertaking a critical review of the literature or other information. They are used extensively in clinical trials/health care research, and increasingly in other fields. In research, systematic reviews are normally undertaken by a team and therefore they make an ideal team-based capstone, more representative of the real-world. The data analysis aspect of a systematic review may entail formal meta-analysis techniques.

KEY SKILLS DEVELOPED: Research skills, qualitative & quantitative research methods, large datasets, ICT skills, numerical and analytical skills, planning and organisation, team working, leadership.

IDEAL FOR: Careers involving the collation, critical (including numerical or meta) analysis and reporting of large datasets/information (e.g., marketing, business, industry, government) or careers where systematic reviews are used extensively (e.g. clinical trials/health care, policy, social sciences). Careers involving significant scientific, technical or other prescribed formats of writing.

Qualitative Research

BRIEF DESCRIPTION: Qualitative research focuses on in-depth analysis of non-quantitative data. It is used to answer many types of research questions for which quantitative approaches would be inappropriate and contributes to knowledge-generation across a range of medically related fields. Qualitative research classifies data into patterns and themes to arrange and conclude results and does not usually employ statistical tools.

Examples include: semi-structured interviews (e.g., of patients or healthcare professionals); structured reviews of internet content (e.g. services offered by stem cell clinics); systematic reviews that explore qualitative themes (e.g. patient or service-user motivations and perspectives); ethical analyses of issues in biomedicine (e.g. ethics of sperm donation or organ transplantation); and systematic reviews of primary qualitative studies.

(Note that 'literature reviews' are not appropriate as projects – qualitative projects must involve the generation of new knowledge.)

KEY SKILLS DEVELOPED: Research skills, qualitative study design, thematic analysis, conceptual analysis, classification/taxonomy construction, theoretical discourse, reflexivity, planning and organisation, team working, leadership.

IDEAL FOR: Careers involving the collation, critical analysis and reporting of qualitative data (e.g., health policy, social science applied to medicine and healthcare, market research); careers where obtaining and analysing views from stakeholders is central (e.g. mediation, patient representation, government); careers involving dealing with philosophical arguments and debates (e.g. public health, medical ethics, civil service).

Stakeholder Opinion

BRIEF DESCRIPTION: The aim of Stakeholder Opinion capstones is for you, either individually or part of a team, to gather relevant stakeholders (e.g., students, employees, identified sections of the public) opinions on a topic relevant to the Biosciences. This gathering of

opinions could be via surveys, focus groups, semi-structured interviews, social media, other means, or a combination of multiple tools.

KEY SKILLS DEVELOPED: Qualitative and qualitative research methodologies and skills, numerical and analytical skills, communication skills, planning and organisation, independent and team working, leadership, resilience, cultural and ethical awareness.

IDEAL FOR: Careers that require interaction and engagement with different sections of the community e.g., social science research, market research, sales and marketing. Careers where you would analyse and use/implement information from stakeholders e.g., sales and marketing, policy development, business, healthcare, consultancy.

Educational Development

BRIEF DESCRIPTION: The aim of Educational Development capstones is for you to create new, or re-purpose existing, educational resources or activities for use in your Schools /Departments undergraduate programmes. It includes evaluation of need and/or the effectiveness of the developed resource or activity. It is NOT a research capstone evaluating educational methodologies/theories or using them as "human participants" in a scientific study. Instead, its principal output is an educational resource.

KEY SKILLS DEVELOPED: Communication skills, creativity, use of initiative, planning and organisational skills, independent working, educational awareness, digital and technological skills

IDEAL FOR: Careers in education, training or professional development, or in the development of educational resources or activities. Careers that require excellent communication skills or involve taking complex information and making it accessible to different audiences (e.g., public)

Team and Multi-team based

BRIEF DESCRIPTION: In the workplace (including scientific research), outputs are usually not the work of a single individual but a team. Graduate employers require employees who are team-players, have significant experience of team-working (on large projects) and though it, have developed leadership skills. Team-based capstones are a much better representation of the workplace than individual capstones, and an ideal opportunity to develop these key skills and graduate attributes. Taking this one stage further, any team comprises of individuals with widely differing knowledge, expertise and skill sets i.e. sub-teams within a team, all contributing to a common goal or output. In research, you will have different research groups collaborating on the same research question e.g. at the molecular, cellular and systems levels. Therefore, we should replicate this in multiteam based capstones, either in research or combining teams undertaking different formats of capstone (e.g. research, stakeholder opinion & public engagement) to collaborate on the same enquiry-based activity.

KEY SKILLS DEVELOPED: Team working, leadership, planning and organisation, emotional intelligence, skills gained via your individual capstone format.

IDEAL FOR: Any careers that involve team-working or leadership roles.

APPENDIX 3: DOCUMENTATION CHECKLIST

Please copy this table and complete for circulation with the submission documents

Accreditation Document and Criteria	Source in document provided (section/page)
Programme specification (4.1 i), 4.2 i)	
Course Handbook	
General information: Course title, duration, modes and all named award titles; course aims and learning outcomes at each stage; rationale for the design of the programme (section 3, 4.1. 4.2ii); external liaison arrangements with employers (4.3.ii) and the Institute (4.3.iii); information on the relevance of the IBMS and HCPC to the programme (4.4. iv),	
Programme management: Faculty/school support and resources. Infrastructure of teaching and research and relationship with similar courses. 4.1. i), ii), iii). Staff development arrangements, including arrangements for external lectures. (4.1.vi) Quality assurance processes, including a process of external examination. (4.1.vii, 4.2 vii), 4.3 iii), 4.4. v), vi)	
Admissions requirements: Knowledge and skills; access arrangements; credit transfer; APL; selection procedures; student induction; equal opportunities. 4.4. i) - iv)	
Assessment: Details of assessment strategies and rationale; schedule of assessment; Assessment Board arrangements; details of penalties for late submission of coursework; approaches to preventing plagiarism. An assessment mapping document should be available which explicitly shows the module name, code and type of assessment with e.g. word limits. 4.2. iv), v), vi, vii) ,	

Accreditation Document and Criteria	Source in document provided (section/page)
<u>Modules:</u> There must be clear descriptions of the modular content of the whole programme and mode of delivery (lectures, practicals, tutorials, flexible learning, summary timetables), including the level and credit points of each component with learning outcomes and methods of assessment. Practical classes / incorporation of laboratory / technical skills and competencies should be evident. Section 3.1, 3.2, 3.3, 3.4, 3.5 4.2.iii), iv), viii), v), vi) The contents of each individual module must have sufficient detail to indicate the depth and breadth of its contents and indicative reading. Reading lists and other resources for each module must be current and appropriate. 4.2 iii) Where university regulations restrict the amount of information in module descriptors a list of the lecture series should be included with a brief synopsis of the content covered. Section 2b	
<u>Project arrangements:</u> These should include full details of the project organisation and support available (e.g. supporting lecture programme; amount of supervision available, etc.), information on the production/structure of the dissertation; assessment arrangements, and if applicable funding arrangements, responsibilities of work-based supervisors. A separate project Handbook would be preferred. Section 3.5, 4.4. v)	
<u>Reference to placements being offered (where applicable):</u> A summary must be included in the course handbook to demonstrate students are provided with sufficient information to make	

Accreditation Document and Criteria	Source in document provided (section/page)
informed choices. For example 4.5 i, iv, and v) and 4.6 i) to give an overview.	
Student Handbook (if different from Course Handbook) 4.2 ix), 4.4. i) – vii)	
Placement Handbook (if applicable) Detailed information must be documented in a Placement Handbook with specific information regarding the responsibilities of students, placement providers and the education provider. Information must include preparation for placements, support and expected outcomes. (All criteria listed in 4.5) Where there is completion of the IBMS Registration Training Portfolio, details of responsibilities for training, assessment and the end-point verification must be included. 4.5	
Short CVs of academic teaching staff 4.1.v)	
Employer liaison meeting minutes (with indicative membership) 4.1 iv) 4.3 ii)	

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