

The University of Leeds
EXTERNAL EXAMINER'S REPORT
ACADEMIC YEAR: 2016-17

Part A: General Information**Subject area and awards being examined**

Faculty / School of:	Biological Sciences
Subject(s):	<i>Medical Sciences</i>
Programme(s) / Module(s):	BSc Medical Sciences; BSc Medical Sciences (Industrial); BSc Medical Sciences (International); MBiol, BSc Medical Sciences (Integrated Masters)
Awards (e.g. BA/BSc/MSc etc):	BSc/MBiol

Part B: Comments for the Institution on the Examination Process and Standards**Points of innovation and/or good practice**

Please highlight areas of innovation or good practice within the programmes or processes you have been involved with in this box.

I consider that the BSc Medical Science programme is a very well run, high quality course where teaching is strongly informed by research. Areas of good practice that I commend strongly include first, the widespread use of lecture recording and its quality. It was again clear from my meeting with students studying on the programme that they valued greatly the recorded lectures and other online tools available to them to support student learning. Second, the strong emphasis on practical teaching throughout the three years of the programme. I commend most strongly academic staff for providing students with high quality practical training, which both challenges students and provides them with insight into laboratory research. Third, the Advanced Topics and their assessment. The students that I met were enthusiastic about the opportunity to learn about the latest developments in selected areas of medical research through the Advanced Topics. Fourth, I am impressed by the peer assisted study scheme whereby Year 2 students assist Year 1 students with their studies. It was clear from the enthusiasm of the students that this scheme is a win-win for both groups of students. I commend strongly this scheme and encourage its wide adoption. Finally, I applaud the excellent self-reflection exercise that Year 3 students undertake as part of their research dissertation. I would very much like to see a similar exercise adopted by my own Department for the Year 3 research projects undertaken by undergraduate students.

Enhancements made from the previous year

Please highlight any enhancements made to the programme(s) or processes over the past year in this box.

My impression is that few enhancements were necessary during academic year 216-2017 compared to the previous year. One small enhancement that I welcomed as an external examiner was the annotation of Year 3 student dissertations by the student's supervisor. This change allows external examiners to better evaluate the standard of student work and the justification for the awarded mark.

Matters for Urgent Attention

If there are any areas which you think require urgent attention before the programme is offered again please note them in this box

None

For Examiners in the first year of appointment

1.	Were you provided with an External Examiners Handbook?	N/A
2.	Were you provided with copies of previous relevant External Examiners' reports and the response of the School to these?	N/A

3.	Were you provided with an External Examiner Mentor?	N/A
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For Examiners completing their term of appointment

4.	Have you observed improvements in the programme(s) over the period of your appointment?	Y
5.	Has the school responded to comments and recommendations you have made?	Y
6.	Where recommendations have not been implemented, did the school provide clear reasons for this?	Y
7.	Have you acted as an External Examiner Mentor?	N

Please comment on your experience of the programme(s) over the period of your appointment, remarking in particular on changes from year to year and the progressive development and enhancement of the learning and teaching provision, on standards achieved, on marking and assessment and the procedures of the School

I have had a very positive experience of the BSc Medical Science programme over my period as the external examiner. I consider that the curriculum is excellent, the quality of the teaching very high, the assessments appropriate and the organisation first class. I particularly applaud the commitment of staff to high quality practical teaching.

I have not witnessed significant changes in the programme over the period of my appointment. In my view few enhancements were necessary because the programme was already excellent. Nevertheless, I recognise that academic staff and administrators have been proactive with improvements to their programme. For example, they have enhanced further communication with students, increased annotation of examination scripts and introduced annotation of dissertations.

I applaud most strongly the commitment, dedication and accessibility of academic staff. I congratulate all staff, academic and administrative, for this excellent BSc programme.

Standards

8.	Is the overall programme structure coherent and appropriate for the level of study?	Y
9.	Does the programme structure allow the programme aims and intended learning outcomes to be met?	Y
10.	Are the programme aims and intended learning outcomes commensurate with the level of award?	Y
11.	Did the Aims and ILOs meet the expectations of the national subject benchmark (where relevant)?	Y
12.	Is the programme(s) comparable with similar programmes at other institutions?	Y

Please use this box to explain your overall impression of the programme structure, design, aims and intended learning outcomes.

The BSc Medical Science programme aims to provide students with comprehensive knowledge and understanding of major areas of medical science. Teaching is research-led and equips students with knowledge of research techniques and their practical application. Students are equipped with appropriate transferable skills for advanced study or employment in medical research. To achieve these programme specifications, students study a broad range of modules. In Year 1, all modules are compulsory, whereas in Years 2 and 3, there is a balance of compulsory and optional units. The compulsory modules in Year 1 provide an appropriate foundation covering a broad range of medical science topics complemented with training in relevant scientific skills. The compulsory modules in Year 2 further develop student knowledge in physiology, pharmacology and neuroscience and extend training in scientific skills. The optional modules not only build on this knowledge, but through their diversity provide students with excellent opportunities to explore their own interests in the medical sciences. The compulsory modules in Year 3 include training in advanced scientific skills and a laboratory/literature-based research project. The optional modules allow students to explore research frontiers in a broad range of medical science areas. I commend the structure of the BSc Medical Science programme over the three years of study and the opportunities it provides to students to explore widely medical science.

My own institution does not offer a BSc Medical Science programme. However, the general structure of the programme at the University of Leeds is highly comparable to equivalent degrees at my own institution. There is a strong emphasis on training in scientific skills and critical transferable skills, not just the acquisition of knowledge. In part, this training is achieved through a research project, the largest single component of the Year 3 course. Importantly, at the University of Leeds, like at my own institution, teaching is research-led. Thus, through

comparison with equivalent courses at my own institution as well as discussions with colleagues at other UK universities, I am confident that the Aims and Intended Learning Outcomes of the BSc Medical Science programme more than meet the expectations of the national subject benchmark.		
13.	Is the influence of research on the curriculum and learning and teaching clear?	Y
<p><i>Please explain how this is/could be achieved (examples might include: curriculum design informed by current research in the subject; practice informed by research; students undertaking research)</i></p> <p>It is very clear that teaching is research-led on the BSc Medical Science programme at the University of Leeds. In Year 3, student research projects are strongly influenced by the research expertise of academic staff. These projects provided students with the opportunity to experience first-hand cutting-edge medical research competitive at the international level. The other modules in Year 3, particularly the advanced topics in medical sciences take students to the limit of current knowledge in selected areas, challenging students with the latest ideas and newest hypotheses in these areas. In addition, in Year 2, I saw evidence of neuroscience research informing teaching. The standard of some student work in Year 2 was at an advanced level that I did not expect for students at this stage of their undergraduate degrees. Thus, it was very clear that research influences strongly teaching on the BSc Medical Science programme. I commend strongly this practice.</p>		
14.	Does the programme form part of an Integrated PhD?	N
<p><i>Please comment on the appropriateness of the programme as training for a PhD:</i></p> <p>Through my role as the academic co-lead for an inter-institutional MRC-funded Doctoral Training Partnership (DTP), I have witness competition for PhD positions increase noticeably in recent years. Many of the students selected for PhD projects on this DTP have considerable research experience and some MSc (By Research) degrees. Nevertheless, I consider that the BSc Medical Science programme provides excellent training for PhD research. Students develop a passion for specific areas of biomedical research based on the teaching they receive from research leaders. They receive comprehensive training in essential research skills, including data analysis and interpretation, scientific numeracy, report writing and communication. They benefit greatly from the strong emphasis on "hands on" practical training throughout the degree programme, culmination in laboratory-based Year 3 student research projects. Those students fortunate enough to spend a year intercalated in Industry or undertake the Department's new degree programme, which includes a year-long laboratory based research project will be the strongest candidates for selection on PhD training programmes. However, I know of several current and past PhD students that graduated from the BSc Medical Science programme and related degree programmes at the University of Leeds. All achieved highly as PhD students.</p>		
15.	Does the programme include clinical practice components?	N
<p><i>Please comment on the learning and assessment of practice components of the curriculum here:</i></p> <p>N/A</p>		
16.	Is the programme accredited by a Professional or Statutory Regulatory Body (PSRB)?	N
<p><i>Please comment on the value of, and the programme's ability to meet, PSRB requirements here:</i></p> <p>N/A</p>		

Assessment and Feedback

17.	Does the programme design clearly align intended learning outcomes with assessment?	Y
<p><i>Please comment on the assessment methods and the appropriateness of these to the ILOs, in particular: the design and structure of the assessment methods, and the arrangements for the marking of modules and the classification of awards; the quality of teaching, learning and assessment methods that may be indicated by student performance.</i></p> <p>The BSc Medical Science programme employs a wide range of assessment methods. In Year 1 and 2, MCQs, EMQs and DI questions are widely used, but there are also some essay questions, particularly in Year 2. In Year 3, assessment of the research project, includes a literature review, a supervisor's report on laboratory work and a dissertation. Other Year 3 assessments include essays and questions to explore data interpretation, experimental design and paper review skills, all fundamental skills that students at this level should have acquired. I was encouraged greatly to see that some assessments in Years 1 and 2 included short note format. My own view is that short note questions enable greater exploration of student knowledge and understanding than computer-marked</p>		

questions. At all levels, I consider that student work was assessed appropriately and the boundaries of different degree classes were set correctly. Marking of student work was rigorous, but fair with all work in Year 3 double marked and student scripts well annotated; it was clear how examiners had decided what marks to award students. Thus, I consider teaching quality to be high and assessment methods rigorous, but fair.

18.	Is the design and structure of the assessment methods appropriate to the level of award?	Y
19.	Were students given adequate opportunity to demonstrate their achievement of the programme aims and intended learning outcomes?	Y

Please comment on the academic standards demonstrated by the students and, where possible, their performance in relation to students on comparable courses; the strengths and weaknesses of the students as a cohort:

Like at my own institution, the research project provided an excellent opportunity for students to demonstrate their achievement. The research dissertation synthesized student skills in an important number of areas, including literature review, data analysis and interpretation and scientific communication. The Year 3 examinations provided students with further opportunities to demonstrate their knowledge and understanding of specific areas of medical science, their ability to advocate a viewpoint and their skills in data interpretation, experimental design and paper review. I was greatly encouraged to see the full range of marks employed by academic staff when marking student work, with little bunching of marks at degree classification boundaries. I saw no evidence of grade inflation. My own marking of work was entirely consistent with that of the academic staff. The student work that I reviewed was of an equivalent standard to that of students at my own institution. I did not take a record of the distribution of marks across the different degree classes for the graduating cohort of students on the BSc Medical Science programme. However, my recollection is that it was as I expected it to be with a reasonable number of students attaining first class honours, the largest group upper second class honours and no long tail to the distribution of marks. This distribution of marks is consistent with those which I observed in the previous years that I have acted as external examiner for the BSc Medical Science programme. It is also consistent with the distribution of awarded degrees for similar programmes at my own institution.

Please use this box to provide any additional comments you would like to make in relation to assessment and feedback:

Students on the BSc Medical Science programme were provided with effective feedback in a timely fashion.

The Progression and Awards Process

20.	Were you provided with guidance relating to the External Examiners role, powers and responsibilities in the examination process?	Y
21.	Was the progression and award guidance provided sufficient for you to act effectively as an External Examiner?	Y
22.	Did you receive appropriate programme documentation for your area(s) of responsibility?	Y
23.	Did you receive appropriate module documentation for your area(s) of responsibility?	Y
24.	Did you receive full details of marking criteria applicable to your area(s) of responsibility?	Y
25.	Were you provided with all draft examination papers/assessments?	Y
26.	Was the nature and level of the assessment questions appropriate?	Y
27.	Were suitable arrangements made to consider your comments on assessment questions?	Y
28.	Was sufficient assessed work made available to enable you to have confidence in your evaluation of the standard of student work?	Y
29.	Were the examination scripts clearly marked/annotated?	Y
30.	Was the choice of subjects for final year projects and/or dissertations appropriate?	Y
31.	Was the method and standard of assessment appropriate for the final year projects and/or dissertations?	Y

32.	Were the administrative arrangements satisfactory for the whole process, including the operation of the Progression and Awards Board?	Y
33.	Were you able to attend the Progression and Awards Board meeting?	Y
34.	Were you satisfied with the recommendations of the Progression and Awards Board?	Y
35.	Were you satisfied with the way decisions from the School Special Circumstances meeting were communicated to the Progression and Awards Board?	Y

Please use this box to provide any additional comments you would like to make on the questions above:

I was provided with comprehensive information about my role as an external examiner. Staff at the University of Leeds were extremely helpful, clearly explaining about the BSc Medical Science programme and answering my questions thoroughly. I am very grateful to all staff for their collegiality. I was made to feel very welcome.

Ahead of my first visit in academic year 2013-2014, I received very detailed information about the BSc Medical Science programme; some information was in paper format, while other documents were made available online. As part of my briefing, marking criteria were clearly explained. As part of my visits this academic year, I was again able to access online information about the programmes and reminded about marking criteria.

I was provided with all draft examination papers in a timely fashion. I consider that the nature and level of difficulty of the questions was appropriate for each of the three years of study. The level of difficulty of the questions increased appropriately from one year to the next. The Year 3 examination papers provided students with opportunities to demonstrate the depth and breadth of their knowledge and understanding, their powers of data analysis and interpretation and their ability to advocate a viewpoint. The breadth of examination questions appropriately reflected the wide-ranging opportunities the course design provides for students to explore medical science. I provided some comments on the examination papers. However, the majority of these comments were minor in nature, focusing on ensuring that the meaning of questions would be clear for students and correcting some minor typographical errors.

More than sufficient student work was made available to enable me to have strong confidence in the standard of work on the BSc Medical Science programme. Thankfully, staff provided valuable direction as to which scripts I should focus my attention on first. The scripts were clearly marked with comments and justifying the awarded mark. Because of the breadth of material examined, the clear annotation of scripts was very helpful in my scrutiny of marking standards. I was encouraged to see that many second markers also commented on scripts.

I was greatly encouraged to see a wide range of subjects offered to students on the BSc Medical Science programme for Year 3 dissertations consistent with the breadth of the Year 3 course. I was further encouraged to see a substantial number of laboratory-based research projects offered to students, not just literature-based dissertations. I commend the use of a marking matrix. I found this tool particularly useful for judging the standard of work and comparing my own opinion of the work with those of the supervisors and independent second markers.

The standard of administrative arrangements was excellent. The whole process was conducted in a highly professional manner from the review of draft examination papers, to arrangements for visits to the University of Leeds, review of marked examination scripts and dissertations and finally the conduct of the Board of Examiners meeting. University academic staff and external examiners participated actively in the meeting. Individual students were considered in turn with adequate time allowed for full discussion of each student's performance, particularly those with mitigating circumstances and those at degree classification boundaries. All students were treated fairly and the process was fully transparent. Importantly, there was consistency and uniformity of standards across the different degree programmes considered by the Board of Examiners. I was fully satisfied with the recommendations of the Board of Examiners. The process was conducted professionally and the awarded marks fully justified.

Other comments

Please use this box if you wish to make any further comments not covered elsewhere on the form

I welcomed the opportunity to meet students studying on the BSc Medical Science programme when I visited the University of Leeds on Wednesday 22nd March 2017. I was impressed greatly by the enthusiasm of the students. It was especially helpful to meet again students that I had met on previous visits and hear them reflect on the course. As in my previous visits, the students that I met highlighted the breadth of choice available to them, the high standard of organisation of the course and the commitment, dedication and accessibility of the academic staff.

Name of School and Head of School (or nominee)

Title and Name of Responder:

Position*:

Faculty / School of:

Address for communication:

Email:

Telephone:

Programme Leader

Biomedical Sciences

University of Leeds
Leeds LS2 9JT

**If the individual responding to the report is not the Head of School please state their position within the School.*

Completing the School response

The completed School response (including the full original report) should be attached to an e-mail and sent to the Pro-Dean for Student Education in the relevant Faculty. Following approval by the Pro-Dean for Student Education, the School must send the response (including the full original report) directly to the External Examiner. A copy must also be emailed to the Quality Assurance Team at gat@leeds.ac.uk. External Examiners should receive a formal response no later than six weeks after receipt of the original report.

Response to Points of innovation and/or good practice

Thank you for the very positive comments, in particular recognising the work that has gone into ensuring that we continue to provide practical training of the highest standard. Our aim is to continue evolving in this area by giving our students more hands-on experience of digital data capture and on-line data handling via KuraCloud, providing them with a more realistic 'research lab' experience. With regard to the Peer-Assisted Study Scheme, we also believe that this is an excellent learning tool for both Level 1 students as learners and for Level 2 students as facilitators. It also helps the students realise just how difficult a job it can be! The fact that the scheme is self-sustaining is a clear indication of its success, with Level 2 students who have themselves gained from the scheme in Level 1 keen to get involved.

Response to Enhancements made from the previous year

We are pleased that the changes we made this year, providing annotation to research project dissertations, has proven useful. We will continue with this practice going forward.

Response to Matters for Urgent Attention

If any areas have been identified for urgent attention before the programme is offered again please provide a specific response to them here:

No matters were raised.

Response to questions 1-7 (and related comments)

Schools may provide a general response; however, where Examiners raise specific points these must be addressed individually:

No matters were raised.

Standards**Response to questions 8 to 16 (and related comments)**

Schools may provide a general response; however, where Examiners raise specific points these must be addressed individually:

We are of course extremely satisfied with your comments, in particular that our programme aims and intended learning outcomes more than meet the national subject benchmarks. As you highlighted, we are continuing to find new ways to provide training in transferrable skills with the overall aim of improving employability of our graduates, regardless of the career paths they choose.

Assessment and Feedback

Response to questions 17 to 19 (and related comments)

Schools may provide a general response; however, where Examiners raise specific points these must be addressed individually:

We were pleased that you recognised the range and appropriateness of assessment methods we currently use at all levels. There is of course always pressure to reduce staff workloads by using more computer-marked assessments, but we feel (as you do) that even at Levels 1 and 2 it is important that students should have the opportunity to show their knowledge and conceptual understanding through short answer questions. We will continue to follow this approach.

The Progression and Awards Process

Response to questions 20-35 (and related comments)

Schools may provide a general response; however, where Examiners raise specific points these must be addressed individually:

In recent years, as a School, we have pushed quite hard to get academic staff to provide more detailed comments on exam scripts and other written assessments, clearly linking these comments to the assessment criteria to which the students have access. We are pleased that efforts in this area are recognisable. As a School we also pride ourselves on the rigour and care with which we conduct our Examinations Board, and we are therefore pleased that you are able to express your complete confidence in our process.

Other comments

Response to items included in the 'Other Comments' section of the report

We were very pleased that a number of undergraduate students were able to meet with you to discuss the programme during your visit in March. We are fortunate to have an excellent body of highly committed and conscientious students who are happy to give of their time and energy selflessly to improving their degree programme.

Finally, I would like to thank you for all your hard work and helpful comments over your four years as External Examiner. Not only has your input helped us maintain the rigour and academic standards of the programme, but has also helped to make the Medical Sciences programme at Leeds a better experience for our students.