

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:	Mathematics
Subject(s):	<i>Applied Mathematics modules as part of:</i>
Programme(s) / Module(s):	BS-MATH BSc Mathematics MMBS-MATH MMath, BSc Mathematics BS-MATH&STAT BSc Mathematics and Statistics MMBS-MA&ST MMath, BSc Mathematics and Statistics BS-MATH-ST BSc Mathematical Studies BS-MATH&MUSC BSc Mathematics and Music BS-BLGY&MATH BSc Biology and Mathematics BS-MATH/FIN BSc Mathematics with Finance BS-ACMATH BSc Actuarial Mathematics BS-ECON&MATH BSc Economics and Mathematics BS-MNGT&MATH BSc Management and Mathematics GDP-MATH Graduate Diploma in Mathematics Plus Industrial and International variants where applicable.
Awards (e.g. BA/BSc/MSc etc):	BSc, MMath, BSc and Graduate Diploma

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.

There are a large number of initiatives to promote good practice in teaching and course implementation at Leeds. These are summarised in a handout distributed to lecturers.

The initiatives include evidence that different innovations are being encouraged with respect to lecturing mathematics (use of video, flipped lectures, mixed lecture/ workshop etc.), and that a significant number of staff are involved.

Enhancements made from the previous year

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

A major change to the exam processes from last year is that the externals were invited to visit a week or so before the Progression and Awards meeting. I am strongly in favour of this change, because it allows externals to view exam scripts prior to signing off on marks, and creates a mechanism to detect and correct problems with marking or moderation.

Another change is the implementation of an algorithm for considering borderline degree cases. This is sensible, and saves time, given that the process is anonymous in any case.

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 completing their term of appointment

1.	Have you observed improvements in the programme(s) over the period of your appointment?	Y
2.	Has the school responded to comments and recommendations you have made?	Y
3.	Where recommendations have not been implemented, did the school provide clear reasons for this?	Y
4.	Have you acted as a 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

Overall I have been very satisfied with the standards of the degree programmes at Leeds throughout my time as external, and I believe that the current system of learning and teaching provision needs only to evolve organically to maintain standards. The exam administration has been excellent throughout, due to the professionalism and competence of the administrative staff and academics managing the process.

One highly satisfactory improvement in assessment during my time is the migration of students from the now-discontinued (and relatively unsatisfactory) 'soft-skills' third-year module MATH3000 to the much more rigorous and satisfactory MATH3001 Project in Mathematics. I looked at a selection of projects from the latter during my recent visit and was impressed with the way the module was organised to facilitate a good combination of group and individual research. I was particularly impressed by the fact that the module set-up allows staff to supervise an impressively large number of projects, but which nevertheless allows the more capable students to get a taste of original research.

The advanced level MATH5003 projects have produced some impressive research-led work for which the department should be commended.

One suggestion (and I emphasise that this comment is just a suggestion for the department to consider), following reflection on my three-year appointment, is to occasionally (e.g. once every 3 years or so) meet to discuss the relative difficulty and assessment style of exams at the same level, in the light of module results and externals' comments viewed over a number of years. This suggestion arises because, while my comments on exam assessments were efficiently fed back to examiners and acted upon promptly on a year to year basis, I am unsure that there is a mechanism to 'even out' the disparate exam styles and exam difficulties adopted by different examiners over a longer period. As an example of a longer-term issue with different exam styles, a final year course I looked at has consistently had a rather discursive style compared to similar courses. While this examining style did not result in a problem with any of the individual assessments, it has perhaps through unfamiliarity discouraged students from taking this module, as the numbers are in apparent decline. The variations in exam difficulty that I've seen at Leeds are not very serious, and are largely compensated by scaling. Nevertheless there is a danger that disparities in exam difficulty that persist year after year will result in some final year courses being seen as an 'easy option'. I can think of a few courses for which I've been making similar comments on difficulty over successive years.

A major change in the exam procedures is the introduction this year of an earlier external's visit (see comments above).

Standards

5.	Is the overall programme structure coherent and appropriate for the level of study?	Y
6.	Does the programme structure allow the programme aims and intended learning outcomes to be met?	Y
7.	Are the programme aims and intended learning outcomes commensurate with the level of award?	Y
8.	Did the Aims and ILOs meet the expectations of the national subject benchmark (where relevant)?	Y
9.	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 programme design is typical of UK mathematics degrees at good institutions, and gives a good foundation in mathematics, followed by the opportunity to explore a wide range of interesting third and fourth year optional topics, which are strongly influenced by staff research interests.

The ILOs are appropriate in all of the modules I looked at.		
10.	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 clear that the research interests of staff strongly influence course structure at the higher levels, and there are a number of courses, particularly at level 5, that prepare students well for independent study at a higher level (e.g. PhD level).</p> <p>The MMath projects MATH5003 are strongly driven by staff research interests and it is clear from the projects I looked at that the students engage with research-level mathematics, and in the very best projects are actively engaged with research itself.</p>		
11.	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>N/a</p>		
12.	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>		
13.	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

14.	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 assessment is mainly by examination, as is appropriate for university mathematics, with a small project component. The examination levels and student performance indicate that the teaching and learning methods are of good quality.</p>		
15.	Is the design and structure of the assessment methods appropriate to the level of award?	Y
16.	Were students given adequate opportunity to demonstrate their achievement of the programme aims and intended learning outcomes?	Y
<p><i>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:</i></p> <p>The academic standards are exactly as I would expect and hope for from a good quality UK mathematics department. Regarding the cohort's strengths in applied mathematics these are aligned with the research interests of the staff (e.g. fluid dynamics, nonlinear waves, asymptotic methods, dynamical systems, etc.).</p> <p><i>Please use this box to provide any additional comments you would like to make in relation to assessment and feedback:</i></p> <p>No additional comments</p>		

The Progression and Awards Process

17.	Were you provided with guidance relating to the External Examiners role, powers and responsibilities in the examination process?	Y
18.	Was the progression and award guidance provided sufficient for you to act effectively as an External Examiner?	Y
19.	Did you receive appropriate programme documentation for your area(s) of responsibility?	Y
20.	Did you receive appropriate module documentation for your area(s) of responsibility?	Y
21.	Did you receive full details of marking criteria applicable to your area(s) of responsibility?	Y
22.	Were you provided with all draft examination papers/assessments?	Y
23.	Was the nature and level of the assessment questions appropriate?	Y
24.	Were suitable arrangements made to consider your comments on assessment questions?	Y
25.	Was sufficient assessed work made available to enable you to have confidence in your evaluation of the standard of student work?	Y
26.	Were the examination scripts clearly marked/annotated?	Y
27.	Was the choice of subjects for final year projects and/or dissertations appropriate?	Y
28.	Was the method and standard of assessment appropriate for the final year projects and/or dissertations?	Y
29.	Were the administrative arrangements satisfactory for the whole process, including the operation of the Progression and Awards Board?	Y
30.	Were you able to attend the Progression and Awards Board meeting?	N
31.	Were you satisfied with the recommendations of the Progression and Awards Board?	Y
32.	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 struck by the fact that it is unclear from looking at exam scripts the extent to which questions have been second marked. I would recommend that the second marker (checker) indicates on the scripts that all pages of work have been seen, and in doing so confirms that they have been first marked (e.g. in our department we are encouraged to mark every page with green ink). I saw some scripts where just a few pencil marks had been made and with pages of working without any marks. This leaves the system open to challenge by students who might claim that some of their work has been overlooked.

Other comments

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

None.

Part C: School Response to External Examiner Report**Name of School and Head of School (or nominee)**

Title and Name of Responder:

Position*:

Faculty / School of:

Address for communication:

Email:

Telephone:

Head of School	
School of Mathematics	
University of Leeds	

*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

We are grateful to _____ for _____ comments on our innovations in teaching, and we hope to continue pressing forward in these areas.

Response to Enhancements made from the previous year

We are pleased to hear that the change in visit arrangements has improved matters. We continue to look at our arrangements and are adjusting them for next year to improve their fit with the exams processes.

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:

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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:

We are grateful to _____ for _____ very positive overview of our teaching, including the recent introduction of MATH3001 projects.

We have discussed _____ comments with respect to consistency of examinations. Within the last 24 months, we began highlighting repeatedly scaled modules to Heads of Department before exam papers are requested, so that they can discuss potential issues with lecturers.

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:

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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:

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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:

We had, for internal purposes, asked transcription checkers to provide a count of the number of errors they found in a stack of exam scripts, but moved away from this recently. We will be reinstating this as a simple way to provide external examiners with reassurance that the checking has been done accurately. This will be done by adding two boxes to our marksheet, to record the number of errors in marking and the number of transcription errors.

We are concerned at report that some scripts did not show evidence of thorough checking by markers; our checking processes should catch such cases. We will be encouraging our external examiners in future to raise such cases with us at their visit, so that we can investigate and rectify them, as well as instructing examiners and checkers for the future.

Other comments

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

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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:	Mathematics
Subject(s):	<i>Statistics modules as part of:</i>
Programme(s) / Module(s):	BS-MATH BSc Mathematics MMBS-MATH MMath, BSc Mathematics BS-MATH&STAT BSc Mathematics and Statistics MMBS-MA&ST MMath, BSc Mathematics and Statistics BS-MATH-ST BSc Mathematical Studies BS-MATH&MUSC BSc Mathematics and Music BS-BLGY&MATH BSc Biology and Mathematics BS-MATH/FIN BSc Mathematics with Finance BS-ACMATH BSc Actuarial Mathematics BS-ECON&MATH BSc Economics and Mathematics BS-MNGT&MATH BSc Management and Mathematics GDP-MATH Graduate Diploma in Mathematics Plus Industrial and International variants where applicable.
Awards (e.g. BA/BSc/MSc etc):	BSc, MMath, BSc and Graduate Diploma

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.

Almost all staff are very efficient and helpful.

The responses to student complaints are very thorough and patient. The website on ideas for improving your teaching is helpful. It is interesting to see the emphasis in level 1 on writing and presentation; I am sure this will benefit students.

There are some very dedicated staff. The school projects were interesting.

Enhancements made from the previous year

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

It was good to be able to see examination scripts. There was time to check through scripts in advance. This allowed me to check the standard and to compare the lecturers proposed scaling with that of EMG.

The class of degree was more algorithmic, which reduces time taken.

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

There is still no evidence that scripts are checked. When we (all external examiners) queried this, we were given a list of mistakes found in 2016, not the current year. I remain of the view that the practice common in other universities, that scripts are marked in green on each page to confirm that they have been checked, should be adopted.

It is much easier for the external examiner and the checker if markers are required to write the mark in the left margin as x/y, with the total given as x/20, circled.

The school projects were interesting.

The school or university should ensure that lecturers observe deadlines, and treat comments from external examiners seriously.

The examination papers for MATH3714 and MATH5714M, on linear regression, were only given to the assessor on 11/11/16, therefore seriously limiting the assessor's scope to improve papers which did not test students understanding of linear regression methods. Further, the Assessor pointed out there was no content on robustness, and that the previous resit paper, if re-used, should be adapted. The Examiner effectively ignored these comments. My external examiner's report noted that the majority of the syllabus was not examined in the examination paper, and that I thought an entirely new paper should be written. Subsequent checking of the practicals showed little attention to a major aspect of the syllabus.

The Examiner did not merely ignore my comments, but was curiously rude. I had pointed out that to be consistent with the aims of the module, a question based on data which asked students to interpret a confidence interval for one of the regression coefficients required more information than was given. I stated: "The data ought to be properly introduced - units of measurement, source of the data and purpose of the analysis." The Examiner not only refused to provide units of measurement. He wrote "...Thus, given the circumstances, I strongly prefer to not regress to the level where computations need tangible objects attached. This is not primary school!" I considered writing a letter of resignation to Sir Alan Langlands, given that I had not been given any indication that the other staff in the School of Mathematics disagreed with the Examiner's opinion that I was unable to distinguish between primary school mathematics and level 3 or 5 mathematics.

I did subsequently receive an apology from the head of school and head of department. Later an apology was provided by the Examiner. Nevertheless, it might be useful for the university to consider what is written to external examiners.

For Examiners in the first year of appointment

1.	Were you provided with an External Examiners Handbook?	Y
2.	Were you provided with copies of previous relevant External Examiners' reports and the response of the School to these?	Y
3.	Were you provided with a External Examiner Mentor?	Y

For Examiners completing their term of appointment

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

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 programmes are sensible.		
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>The specialist modules offered in later years reflect the research interests of staff, as do the options for projects. This is realistic given the cumulative nature of mathematics.</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>		
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>		
16.	Is the programme accredited by a Professional or Statutory Regulatory Body (PSRB)?	Y / N
<p><i>Please comment on the value of, and the programme's ability to meet, PSRB requirements here:</i></p>		

Assessment and Feedback

17.	Does the programme design clearly align intended learning outcomes with assessment?	Y / N
<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>		

I gave specific feed back for specific modules with regard to ILOs. Generally appropriate.		
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
<p><i>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:</i></p> <p>The assessments allow a range of achievements to be distinguished. The performance is comparable with students on other courses.</p> <p><i>Please use this box to provide any additional comments you would like to make in relation to assessment and feedback:</i></p> <p>It can be useful for students to try to mark other students exercises or assignments (possibly anonymised). It is often easier for us to recognise lack of clarity of expression or mistakes made by others rather than ourselves. If students have to provide a written explanation of the marks they give, they really have to think about what is required.</p>		

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 Yes. Assessments No	Y / N

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 / N
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?	N
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:

25. I do not necessarily wish to see all assessments. In the case of more applied modules, it might be helpful to see the major assignments set for continuous assessment.

26, 27. In one case, (MATH3714 and MATH5714M) the assignment was not appropriate.

29. See remarks about checking and marking above.

Other comments

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

Name of School and Head of School (or nominee)

Title and Name of Responder:	
Position*:	Head of School
Faculty / School of:	Mathematics
Address for communication:	School of Mathematics University of Leeds Leeds LS2 9JT
Email:	
Telephone:	

**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 qat@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

We are grateful to _____ for _____ comments on the helpfulness of our staff and our efforts to improve student education; we will continue trying to provide our students with the best possible educational outcomes.

Response to Enhancements made from the previous year

We are pleased to hear that the change in visit arrangements has improved matters. We continue to look at our arrangements and are adjusting them for next year to improve their fit with the exams processes.

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:

Relating to the checking of exam scripts: We had in the past, for internal purposes, asked transcription checkers to provide a count of the number of errors they found in a stack of exam scripts, but moved away from this recently. We will be reinstating this as a simple way to provide external examiners with reassurance that the checking has been done accurately. This will be done by adding two boxes to our marksheet, to record the number of errors in marking and the number of transcription errors.

We do instruct markers to enter marks in the format suggested by _____, and have processes in place to check that this is happening, so we are concerned that _____ has identified cases where this has not happened. In the future we will be asking external examiners to raise any such cases with us at their visit, so that we can investigate and rectify them, as well as instructing examiners and checkers for the future.

Relating to the modules mentioned: we agree that the response sent by the module leader to _____ report was inappropriate, and we and the module leader have both already apologised to _____. We will in future be monitoring responses sent from module leaders to external examiners and if necessary ask module leaders to reconsider inappropriate responses. We have passed _____ concerns regarding the assessment of this module on to the module leader so that _____ is able to address them this year.

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:

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:

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 have responded to the comments about ILOs for specific modules above.

We thank _____ for the suggestion that students occasionally mark each others work; this year we are implementing this policy in some of our compulsory first year modules.

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:

We agree with _____ that it is in some cases appropriate for external examiners to look at coursework assessments in addition to exams. This year _____ is being given the opportunity to do so.

The comments about appropriateness of assessment for specific modules and on checking and marking have been responded to above.

Other comments

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

The University of Leeds

EXTERNAL EXAMINER'S REPORT

QA Team received 14.09.2017

ACADEMIC YEAR: 2016-17

Part A: General Information

Subject area and awards being examined

Faculty / School of:	Mathematics
Subject(s):	<i>Pure Mathematics modules as part of:</i>
Programme(s) / Module(s):	BS-MATH BSc Mathematics MMBS-MATH MMath, BSc Mathematics BS-MATH&STAT BSc Mathematics and Statistics MMBS-MA&ST MMath, BSc Mathematics and Statistics BS-MATH-ST BSc Mathematical Studies BS-MATH&MUSC BSc Mathematics and Music BS-BLG&MATH BSc Biology and Mathematics BS-MATH/FIN BSc Mathematics with Finance BS-ACMATH BSc Actuarial Mathematics BS-ECON&MATH BSc Economics and Mathematics BS-MNGT&MATH BSc Management and Mathematics GDP-MATH Graduate Diploma in Mathematics Plus Industrial and International variants where applicable.
Awards (e.g. BA/BSc/MSc etc):	BSc, MMath, BSc and Graduate Diploma

Part B: Comments for the Institution on the Examination Process and Standards

Points of innovation and/or good practice

The board of examiners has moved to an algorithmic procedure to consider borderline cases.

Enhancements made from the previous year

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

 The arrangements have been made so that external examiners can examine student scripts

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

 Regarding the scrutiny of marked scripts by postgraduate students. Perhaps summary sheet should be included in examiner pack for each course indicating any discrepancies in mark totalling of lecturers/missed questions discovered by postgraduate quality control. This would demonstrate that this quality control measure has actually taken place.

For Examiners in the first year of appointment

1.	Were you provided with an External Examiners Handbook?	NA
2.	Were you provided with copies of previous relevant External Examiners' reports and the response of the School to these?	NA
3.	Were you provided with a External Examiner Mentor?	NA

For Examiners completing their term of appointment

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

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

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 programme is well organized and designed. The programme is exactly in line with what is expected of a high quality undergraduate degree with a significant pure mathematical component.

13.	Is the influence of research on the curriculum and learning and teaching clear?	Y
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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)

This success of this is best exemplified by the third year and fourth year projects the subjects of which are deeply influenced by the research interests and expertise of the academic staff. The choices of subject chosen in the more advanced courses (3rd and 4th year) are also plainly influenced by the research of them member so the School. I am also confident that the teaching in earlier years is enhanced by the research expertise of the lecturers.

14.	Does the programme form part of an Integrated PhD?	N
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Please comment on the appropriateness of the programme as training for a PhD:

15.	Does the programme include clinical practice components?	N
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Please comment on the learning and assessment of practice components of the curriculum here:

16.	Is the programme accredited by a Professional or Statutory Regulatory Body (PSRB)?	N
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Please comment on the value of, and the programme's ability to meet, PSRB requirements here:

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>These are all as are expected for a high-quality mathematics degree. The standard of the student performance speaks well for the excellence of the undergraduate teaching.</p>		
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
<p><i>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:</i></p> <p>The academic standards attained by the students is in line with what would be expected in any comparable university.</p>		
<p><i>Please use this box to provide any additional comments you would like to make in relation to assessment and feedback:</i></p>		

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?	N

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
<p><i>Please use this box to provide any additional comments you would like to make on the questions above:</i></p> <p>This was all very well done and organized.</p>		

Other comments

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

This year, during my visit to Leeds, I mainly scrutinised the 3rd and 4th year projects. I was impressed by the standard of the projects and the way that the topics reflected the research interests of the academic staff. The thought and planning that the project leaders had given to the design of the tasks that the students worked on was evident. As a very mild criticism, I would like to have seen reports from both the first and second marker and then a final combined report. I also expected that there would be a moderation meeting where the marks across the programme were considered across a given course. It was not transparent that different graders were coming to comparable overall marks.

Name of School and Head of School (or nominee)

Title and Name of Responder:

Position*:

Faculty / School of:

Address for communication:

Email:

Telephone:

Head of School	
School of Mathematics	
University of Leeds	

*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 qat@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

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Response to Enhancements made from the previous year

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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:

We had, for internal purposes, asked transcription checkers to provide a count of the number of errors they found in a stack of exam scripts, but moved away from this recently. We will be reinstating this as a simple way to provide external examiners with reassurance that the checking has been done accurately. This will be done by adding two boxes to our marksheet, to record the number of errors in marking and the number of transcription errors.

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:

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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 thank _____ for _____ work in scrutinising our programmes and arrangements, and his contributions to our Boards and to the further development of our examinations arrangements. We welcome favourable comments on the overall standards of our teaching and assessment.

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:

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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:

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

Our project modules have been under development in recent years, and we are grateful for comments on improving the evidence of moderation in those modules. We will be modifying the forms for the Level 5 project modules in line with the layout for our Level 3 projects, so that individual supervisor and assessor marks are reported.

We have discussed in detail the issue of moderation for the MSc projects, and decided that a moderation meeting would be logistically impractical. We have decided that a lighter-touch approach is to rotate assessors more from year to year, which should give assessors a broad overview of project assessment.