

## The University of Leeds

### EXTERNAL EXAMINER'S REPORT

ACADEMIC YEAR: 2015– 2016

#### Part A: General Information

##### Subject area and awards being examined

Faculty / School of:	Mathematics																								
Subject(s):	<i>Applied Mathematics</i>																								
Programme(s) / Module(s):	<table border="0"> <tr> <td>BS-MATH</td> <td>BSc Mathematics</td> </tr> <tr> <td>MMBS-MATH</td> <td>MMath, BSc Mathematics</td> </tr> <tr> <td>BS-MATH-ST</td> <td>BSc Mathematical Studies</td> </tr> <tr> <td>BS-MATH&amp;STAT</td> <td>BSc Mathematics &amp; Statistics</td> </tr> <tr> <td>MMBS-MA&amp;ST</td> <td>MMath, BSc Mathematics &amp; Statistics</td> </tr> <tr> <td>BS-BLGY&amp;MATH</td> <td>BSc Biology &amp; Mathematics</td> </tr> <tr> <td>BS-MATH&amp;MUSC</td> <td>BSc Mathematics &amp; Music</td> </tr> <tr> <td>BS-MNGT&amp;MATH</td> <td>BSc Management &amp; Mathematics</td> </tr> <tr> <td>BS-ECON&amp;MATH</td> <td>BSc Economics &amp; Mathematics</td> </tr> <tr> <td>BS-ACMATH</td> <td>BSc Actuarial Mathematics</td> </tr> <tr> <td>BS-MATH/FIN</td> <td>BSc Mathematics with Finance</td> </tr> <tr> <td>GDP-FIN&amp;AC</td> <td>Graduate Diploma Financial &amp; Actuarial Mathematics</td> </tr> </table> <p><i>Plus all International and Industrial variants of these programmes</i></p>	BS-MATH	BSc Mathematics	MMBS-MATH	MMath, BSc Mathematics	BS-MATH-ST	BSc Mathematical Studies	BS-MATH&STAT	BSc Mathematics & Statistics	MMBS-MA&ST	MMath, BSc Mathematics & Statistics	BS-BLGY&MATH	BSc Biology & Mathematics	BS-MATH&MUSC	BSc Mathematics & Music	BS-MNGT&MATH	BSc Management & Mathematics	BS-ECON&MATH	BSc Economics & Mathematics	BS-ACMATH	BSc Actuarial Mathematics	BS-MATH/FIN	BSc Mathematics with Finance	GDP-FIN&AC	Graduate Diploma Financial & Actuarial Mathematics
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##### Name and home Institution / affiliation of Examiner

##### Completed report

The completed report should be attached to an e-mail and sent as soon as possible, and no later than six weeks after the relevant meeting of the Board of Examiners, to [exexadmin@leeds.ac.uk](mailto:exexadmin@leeds.ac.uk).

Alternatively you can post your report to: **Head of Quality Assurance**  
Room 12:81, EC Stoner Building  
The University of Leeds, Leeds LS2 9JT

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

##### **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.

##### **Only applicable in first year of appointment**

*Were you provided with copies of previous relevant External Examiners' reports and the response of the School to these?*

n/a

##### **For Examiners completing their term of appointment**

*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*

n/a

## Standards

- 1. Please indicate the extent to which the programme Aims and Intended Learning Outcomes (ILOs) were commensurate with the level of the award**
  - *The appropriateness of the Intended Learning Outcomes for the programme(s)/modules and of the structure and content of the programme(s);*
  - *The extent to which standards are appropriate for the award or award element under consideration.*

Learning outcomes were appropriate to the level of award for all modules I was asked to look at, and standards are appropriate for a UK university mathematics programme.
  
- 2. Did the Aims and ILOs meet the expectations of the national subject benchmark (where relevant)?**
  - *The comparability of the programme(s) with similar programme(s) at other institutions and against national benchmarks and the Framework for Higher Education Qualifications.*

Yes. The standard of those modules I looked at, I found to be comparable to those at other UK institutions.
  
- 3. Please comment on the assessment methods and the appropriateness of these to the ILOs**
  - *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.*

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.
  
- 4. Were students given adequate opportunity to demonstrate their achievement of the Aims and ILOs?**
  - *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.*

Yes. All examined modules contained some unseen material enabling students to demonstrate a genuine understanding of the ILOs.
  
- 5. For Examiners responsible for programmes that include clinical practice components, please comment on the learning and assessment of practice components of the curriculum**

n/a
  
- 6. Please comment on the nature and effectiveness of enhancements to the programme(s) and modules since the previous year**

*It would be particularly helpful if you could also identify areas of good practice which are worthy of wider dissemination.*

The overall programme has been strengthened and made more rigorous by the discontinuation of the MATH3000 module, which I felt allowed too many marks for 'soft' non-mathematical skills. The second year modules I looked at also seemed to be more uniform in breadth and quality compared to last year.
  
- 7. Please comment on the influence of research on the curriculum and learning and teaching**

*This may include examples of curriculum design informed by current research in the subject; practice informed by research; students undertaking research.*

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).
  
- 8. Where the programme forms part of an Integrated PhD, please comment on the appropriateness of the programme as training for a PhD**

n/a

## For Examiners involved in mentoring arrangements

- 9. If you have acted as a mentor to a new External Examiner or have received mentor support please comment here on the arrangements**

n/a

**The Examination/Assessment Process**

**10. The University and its Schools provide guidance for External Examiners as to their roles, powers and responsibilities. Please indicate whether this material was sufficient for you to act effectively as an External Examiner.**

*Whether External Examiners have sufficient access to the material needed to make the required judgements and whether they are encouraged to request additional information.*

Yes, sufficient material was promptly provided.

**11. Did you receive appropriate documentation relating to the programmes and/or parts of programmes for which you have responsibility, e.g. programme specifications or module handbooks, marking criteria?**

*The coherence of the policies and procedures relating to External Examiners and whether they match the explicit roles they are asked to perform.*

Yes.

**12. Were you provided with all draft examination papers/assessments? Was the nature and level of the questions appropriate? If not, were suitable arrangements made to consider your comments?**

Yes. Such comments that I made on examinations were responded to / taken into account by the examiners in a prompt fashion.

**13. Was sufficient assessed / examined work made available to enable you to have confidence in your evaluation of the standard of student work? Were the scripts clearly marked/annotated?**

Yes.

**14. Was the choice of subjects for dissertations appropriate? Was the method and standard of assessment appropriate?**

The mathematical projects I looked at were of an appropriate standard and were well-conceived.

**15. Were the administrative arrangements satisfactory for the whole process, including the operation of the Board of Examiners? Were you able to attend the meeting? Were you satisfied with the recommendations of the Board?**

Yes. The examinations process was administered very efficiently by all of the relevant staff at Leeds. The meeting, which I attended, was chaired with great efficiency and I was satisfied with the recommendations of the board.

**16. Were appropriate procedures in place to give due consideration to mitigating circumstances and medical evidence?**

Yes. Detailed evidence of mitigating circumstances was made available to the external examiners.

**Other comments**

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

This year there was considerable debate between the examinations officers and the externals over whether marks should be 'signed off' by externals before the examination meeting, as has been the practice over the last several years. I was pleased that this issue was aired, and I hope that a satisfactory arrangement can be reached for next year that will allow examiners some flexibility if they subsequently find that a module has not been marked to their satisfaction.

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**Response to the Applied Mathematics External Examiner's Report  
on Undergraduate Programmes in Mathematics, 2015/16**

We thank <<>> for <> work as an external examiner throughout this academic year, and particularly <> contributions at the Board of Examiners meeting in June. We are grateful for <> broad and positive comments on the standard of our programmes, the efficiency of our exams operation and the quality of staff teaching. We are pleased that <> finds the new final year projects to be an improvement on the previous scheme.

At the end of his report, <<>> raises administrative questions relating to the ordering of various components of the marks approval process. We have looked again at the way this operates, and after some internal discussion, have produced a new timetable that has been agreed by the External Examiners. We hope that this new approach will provide <<>>, and the other External Examiners, with assurance that they are able to raise any concerns they may have at the appropriate juncture.

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Head of School of Mathematics

October 2016

## The University of Leeds

### EXTERNAL EXAMINER'S REPORT

ACADEMIC YEAR: 2015– 2016

#### Part A: General Information

##### Subject area and awards being examined

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

##### Name and home Institution / affiliation of Examiner

##### Completed report

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

##### **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 are no urgent matters.

##### **Only applicable in first year of appointment**

*Were you provided with copies of previous relevant External Examiners' reports and the response of the School to these?*

Yes, where they were available.

##### **For Examiners completing their term of appointment**

*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

- 1. Please indicate the extent to which the programme Aims and Intended Learning Outcomes (ILOs) were commensurate with the level of the award**
  - *The appropriateness of the Intended Learning Outcomes for the programme(s)/modules and of the structure and content of the programme(s);*
  - *The extent to which standards are appropriate for the award or award element under consideration.*

The content of the programme is appropriate for the intended learning outcomes. The standards set were in line with the awards given.
- 2. Did the Aims and ILOs meet the expectations of the national subject benchmark (where relevant)?**
  - *The comparability of the programme(s) with similar programme(s) at other institutions and against national benchmarks and the Framework for Higher Education Qualifications.*

The programme is similar to other such programmes across the UK.
- 3. Please comment on the assessment methods and the appropriateness of these to the ILOs**
  - *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.*

The assessment arrangements, teaching methods are sensible for assessing pure mathematics.
- 4. Were students given adequate opportunity to demonstrate their achievement of the Aims and ILOs?**
  - *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.*

The students were given good opportunities to demonstrate their understanding of the subject and to show what they had learnt. They performed as well as other students on similar programmes.
- 5. For Examiners responsible for programmes that include clinical practice components, please comment on the learning and assessment of practice components of the curriculum**
- 6. Please comment on the nature and effectiveness of enhancements to the programme(s) and modules since the previous year**

*It would be particularly helpful if you could also identify areas of good practice which are worthy of wider dissemination.*
- 7. Please comment on the influence of research on the curriculum and learning and teaching**

*This may include examples of curriculum design informed by current research in the subject; practice informed by research; students undertaking research.*

The research of the members of staff could be deduced from the examinations I assessed. It is clear that the teaching in Leeds is research led. This is particularly transparent in the final year projects.
- 8. Where the programme forms part of an Integrated PhD, please comment on the appropriateness of the programme as training for a PhD**

## For Examiners involved in mentoring arrangements

- 9. If you have acted as a mentor to a new External Examiner or have received mentor support please comment here on the arrangements**

**The Examination/Assessment Process**

- 10. The University and its Schools provide guidance for External Examiners as to their roles, powers and responsibilities. Please indicate whether this material was sufficient for you to act effectively as an External Examiner.**

*Whether External Examiners have sufficient access to the material needed to make the required judgements and whether they are encouraged to request additional information.*

My role was very clearly explained.

- 11. Did you receive appropriate documentation relating to the programmes and/or parts of programmes for which you have responsibility, e.g. programme specifications or module handbooks, marking criteria?**

*The coherence of the policies and procedures relating to External Examiners and whether they match the explicit roles they are asked to perform.*

The documentation was appropriate.

- 12. Were you provided with all draft examination papers/assessments? Was the nature and level of the questions appropriate? If not, were suitable arrangements made to consider your comments?**

Yes

- 13. Was sufficient assessed / examined work made available to enable you to have confidence in your evaluation of the standard of student work? Were the scripts clearly marked/annotated?**

Yes, but the other roles we had to perform gave me limited opportunity to inspect the marked scripts.

- 14. Was the choice of subjects for dissertations appropriate? Was the method and standard of assessment appropriate?**

Yes to both questions

- 15. Were the administrative arrangements satisfactory for the whole process, including the operation of the Board of Examiners? Were you able to attend the meeting? Were you satisfied with the recommendations of the Board?**

Yes, yes and yes.

- 16. Were appropriate procedures in place to give due consideration to mitigating circumstances and medical evidence?**

Yes.

**Other comments**

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

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**Response to the External Examiner's Report  
on Undergraduate Programmes in Mathematics, 2015/16**

We thank <<>> for <> thorough work in examining our programmes and for <> valuable contribution to the Board of Examiners meeting in June. We welcome <<>> favourable comments on the overall standards of our teaching and assessment. We are particularly pleased by <<>> comment on the clear evidence of research-led teaching in Leeds.

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Head of School of Mathematics

October 2016