

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: Earth & Environment

Subject(s):

Programme(s) / Module(s): Exploration Geophysics

Awards (e.g. BA/BSc/MSc etc): MSc

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.

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?

Yes

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

NA

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 standards and course programme are fully appropriate for the stated ILOs and award of the MSc degree in Exploration Geophysics.

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.

NA

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.*

A good mix of assessment methods is used in this programme including coursework, group projects, written examinations and an end of year project leading to a dissertation and oral presentation.

Arrangements for the marking of modules and classification of awards appear to be of a high standard. Return of Moderated Marks Forms have been completed for all course modules. All marks appear to have been carefully moderated and the moderator comments taken into account by module leaders. However, the quality of the forms completion is variable; some are very detailed while others are fairly patchy, with one of them not signed by the module leader.

The Petroleum Geology course sub-module is assessed by marking an individual student report and a group exercise. There is no exam component in the marking. It has been observed that student grades are too homogeneous for this sub-module. This problem has been recognized in the corresponding Return of Moderated Marks Form. The assessment method for this course sub-module should be reconsidered in the future.

The quality of teaching methods and material is generally of a high standard. All course material is available via the VLE on-line system and lectures are video-captured to facilitate learning. Module surveys completed by the students show that they are generally very satisfied by the quality of the teaching and course material, with the exception of the Seismic Reservoir Evaluation sub-module for which the overall level of satisfaction is well below 50%. This is a cause for concern which should be investigated by the Department.

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 performance of the students is comparable to that achieved by students at Imperial College for the (now discontinued) MSc in Petroleum Geophysics programme for which I was External Examiner in the past.

5. For Examiners responsible for programmes that include clinical practice components, please comment on the learning and assessment of practice components of the curriculum

NA

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.

- 1) The recent appointment of a Deputy Programme Leader is a positive development that will enhance the support provided to students and facilitate the programme management.
- 2) The plan to create an External Advisory Board will help ensure that the course content remains in line with industry needs.
- 3) The students are given 24h access to a lab equipped with workstations loaded with state-of-the-art software packages from the industry (e.g., ProMAX, Kingdom Suite, Hampson-Russell and Petrel). Use of these tools for coursework prepares the students well for their future professional career.
- 4) Placement of the students in the industry for their independent projects results in high quality work and facilitates students' future employability.
- 5) The geophysical field trip included in the curriculum provides direct exposure to geophysical acquisition techniques.

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 course sub-module on "Recent Developments" is useful to expose students to the latest technology trends in the industry, for example micro-seismic monitoring of hydraulic fracturing in shale plays. Several of the student independent projects were linked to research conducted at the university for example in geomechanics, stochastic modelling of reservoir heterogeneities and Q estimation from seismic data.

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

NA

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

NA

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.

Clear guidance was provided by the Course Programme Leader and by the Programme Administrator. Access to all needed material was provided. The review was facilitated by making all exam / course material available in one room in a well-organized manner.

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.

Complete access was given to course programme description, module handbooks and teaching material via the VLE online system and/or in hardcopy form. Assistance from the Programme Leader and Administrator was readily available and questions were answered in a straight and comprehensive manner.

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?

I was provided with the draft examination papers but I did not review them as my appointment as External Examiner was made late in the academic year.

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?

Access was given to all marked exam papers for all course modules and to some of the assessed coursework. Access was also given to the return of moderated marks forms and module student surveys. This provided a fairly complete picture of the assessed /examined work. I was able to ascertain that the exam papers are carefully marked and moderated and that the student evaluation process is rigorous.

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

The independent project module is marked based on dissertation (80%), oral examination / viva (10%), seminar presentation (5%) and poster (5%). All marks are carefully assessed following a rigorous procedure. I was given access to about half of the student dissertations for review. I attended some of the student vivas as an observer. I also attended a number of student seminar presentations.

The dissertations cover a wide range of topics, reflecting the excellent breadth of the MSc programme and research activities at the School. The choice of dissertation topics was appropriate with a few exceptions where I felt that the aim of the project was poorly defined or did not reflect state-of-the-art practice in the subject area. As indicated above (question 7), some of the dissertations were related to research conducted at the School. However, I would have expected to see a larger proportion of dissertations with a strong research component, including algorithmic development and scientific programming. Instead, a significant number of dissertations merely involved the application of industry-standard workflows to real data.

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?

Administrative arrangements were excellent thanks to the dedication of the programme academic and administrative staff. I did attend the final board of examiners and was satisfied with its operational procedures and recommendations. External examiners were able to give their comments on the course programme during the board meeting.

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

Yes, appropriate procedures are in place, including a sub-committee in charge of reviewing mitigating circumstances.

Other comments

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

- 1) Overall, the course programme is of high quality and prepares the students very well for a professional career in Exploration Geophysics. The breadth of the course modules is particularly remarkable as they address both seismic and potential field methods, and cover geophysical data acquisition, processing, inversion and geological interpretation.
- 2) The "end-of-project assessment week" was very well organized by the Programme Leader and Administrator. In particular, the Open Day with student presentations and posters was run efficiently with parallel sessions and session chairmen like at a professional conference.
- 3) I was generally impressed by the quality of the student end of project presentations. They delivered their talks in a clear and confident manner, kept to the allocated time and were able to answer questions from the audience in a meaningful way. The slide material was generally of high standard, as would be expected at the level of a professional conference. My only criticism would be that some of the slides were too busy (too much text and/or too many figures) and graph annotation was not always readable.
- 4) The seminar presentation currently corresponds to only 5% of the mark for student independent projects. The Department should consider increasing this percentage to reflect the importance of good oral presentation skills.
- 5) The posters were generally of high quality but they contained far too much text and too many illustrations. Students should probably receive better guidelines to ensure that poster material focuses on key points instead of providing a complete summary of the work.
- 6) I was not allowed to review some dissertations or attend the corresponding seminar presentations due to commercial confidentiality. This limited somewhat my exposure to the work of the students and my ability to make an overall assessment of the dissertation quality and range of covered topics. Based on my experience as External Examiner at Imperial College, I would not have expected any commercial confidentiality restrictions in my role of examiner.
- 7) The viva sessions were held before the seminar presentations. If allowed by the time schedule of the end-of-project assessment week, it would be preferable to have the vivas after the seminar presentations.
- 8) Some of the dissertations were provided too late to allow time for a meaningful review. I would recommend a stricter enforcement of submission deadline.
- 9) The course module survey forms provided valuable information about the quality of the teaching as experienced by the students. With a couple of exceptions, the course evaluation feedback was very positive. However, the % of students completing the forms was highly variable from module to module and was sometimes as low as 50%. It would be advisable to find a way of ensuring much higher survey participation in future years and obtain more statistically representative information.
- 10) The programme intake includes a mix of geologists, geophysicists and other scientists. Although all students achieved adequate results, it is not completely clear how the programme supports the needs of students with such different backgrounds. The geology module in the programme is probably too basic for geologists while the inverse theory course may be too simple for geophysicists. In fact, I understand that undergraduate students at Leeds may already have seen some of the course material taught as part of the MSc programme. Would it make sense to have optional modules as follows?
 - For geology undergraduates, a more advanced geology class or an applied mathematics module serving as an introduction for the inverse theory course
 - For geophysics or physics undergraduates, an advanced computational inverse theory class with a basic geology module?

A meeting with the students was organized. It was attended by 16 of the 32 students. They made a number of comments and raised several issues:

- 1) High praise was given to the programme leader, programme administrator and support staff member responsible for the computer lab.
- 2) Students appreciated the industrial connection of the programme, in particular the lecturers coming from the industry, the job fair and opportunity to attend the EAGE conference.
- 3) Positive feedback was given regarding the geophysical field trip. The students indicated their preference to have the field trip scheduled during the 2nd semester. (It is normally scheduled during the 1st one.)
- 4) Positive feedback was received regarding 24h access to the computer lab and access to a large suite of geotechnical software packages used for the coursework.
- 5) Particularly positive feedback was given for the teaching quality of seismic processing, petrophysics and recent developments (sub) modules.
- 6) The students commented that some of the lecturers show a lack of enthusiasm in their teaching. They also indicated that the corresponding course material was of poor quality and that marking of the associated coursework was questionable; most students received the same mark due to poor marking criteria and lack of clarity regarding expected deliverables. These comments should be of serious concern and the department should attempt to rectify the problem for the 2016-17 academic year. The poor level of student satisfaction was also reflected in the completed module survey forms, as indicated earlier in my review.

- 7) Students would like their personal tutors to be more pro-active in the support they provide, for example by organizing regular meetings with the students. Only one meeting was apparently organized with the tutors.
- 8) The students complained that they only received group feedback on their exam performance for one of the course modules. They also indicated that they received only a global mark for each exam and did not get information on their performance for exam components corresponding to different sub-modules. (I was not able to find any trace of exam results commentary on the VLE system.) In addition to written exam feedback, the department might consider having a session with the students (at the beginning of 1st term and the end of 2nd one) to provide face-to-face feedback.
- 9) Some students commented that supervision for independent projects conducted in house was not always adequate. (Based on my review of the dissertation material and the vivas, I observed that this was perhaps the case, but only for a small number of students.)
- 10) Computational inverse theory course is given to some 3rd year undergraduate students at Leeds Uni and no alternative course can be taken at the MSc level, in part due to course scheduling conflicts. [This comment relates to my observation 10) above.]
- 11) Students would like to be given more opportunities to develop their oral presentation skills during the year, for example by presenting their field study report to the class.
- 12) Students suggested that an integrated field study group project would be a good addition to the course. Students commented that this would be a good preparation before joining an integrated asset team in the petroleum industry.

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UNIVERSITY OF LEEDS

09 November 2016

Dr

RE: Response to External Examiner's Report – MSc Exploration Geophysics 2015-16

First, I must thank you for your hard work in reviewing us for the first time, and I am glad that you are pleased, overall, with the standards and student experience.

I echo most strongly his positive comments about the administrative support staff – they are superb, and this programme is only as good as it is because of them.

I'm pleased you have found many academic and scientific positives, but also grateful for his list of comments and suggestions that 'fresh eyes on us have been able to identify. Below, I will respond to each item of concern (some of which we knew already and have already taken action on for the 2016-17 cohort). This will all be made available at our next Exploration Geophysics (XGP) Programme Delivery Team (PDT) meeting.

PLEASE NOTE the original report is edited, even within 'boxes', to show only those points inviting or requiring a response

3. Please comment on the assessment methods and the appropriateness of these to the ILOs

Moderated Marks Forms **quality of the forms completion is variable**; some are very detailed while others are fairly patchy, with one of them not signed by the module leader**Petroleum Geology course sub-module grades are too homogeneous**quality of teaching methods and material is generally of a high standard. with the **exception of the Seismic Reservoir Evaluation sub-module**

Similar frustrations regarding moderation forms have been expressed in School internal assessment board, with the result that often the forms are sent back to the teaching team, for more content. I will reinforce the need for clarity on the process of moderation with our Programme Delivery Team.

Re Petroleum Geology the need to adjust the assessments, specifically to address the narrow range of marks, has been accepted and 'signed off on' in Module Moderation documents by the relevant staff member.

Re teaching standards: we were made very aware of this at the time. Whilst it is partly a reflection that we need to reinvigorate a part of our teaching, in part at least, the catalysts seemed to be friction caused by the ill-fitting merger with SGeol schedule, and the XGP class' own poor attitude (created by their late realisation of limited job

prospects). SEE's Teaching Management has had discussion with the relevant staff and we will monitor closely for any recurrence.

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

The independent project modulechoice of dissertation topics was appropriate with a few exceptions where I felt that the **aim of the project was poorly defined** or did not reflect state-of-the-art practice in the subject area. As indicated above (question 7), some of the dissertations were related to research conducted at the School. However, I would have expected to see a **larger proportion of dissertations with a strong research component**, including algorithmic development and scientific programming. Instead, a significant number of dissertations merely involved the application of industry-standard workflows to real data.

This year, disappointingly many projects stumbled, some weeks into the summer, for various reasons outside our control: new ones had to be devised at very short notice, which I think explains the poorly-designed ones. In general, allocation of topics is driven by student choice – the demand for mimicking industry practice through case studies is very strong, and sometimes mandated by students' sponsors (especially overseas NOCs). We do make sure that more research based projects are always available for students wanting them..

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

- 3) ...student end of project presentations. some of the slides were too busy
- 4) The seminar presentation currently corresponds to only 5% of the mark for student independent projects. The Department should consider increasing this percentage to reflect the importance of good oral presentation skills.
- 5) The posters were generally of high quality but they contained far too much text and too many illustrations. Students should probably receive better guidelines to ensure that poster material focuses on key points instead of providing a complete summary of the work.
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- 10) The programme intake includes a mix of geologists, geophysicists and other scientists. Although all students achieved adequate results, it is not completely clear how the programme supports the needs of students with such different backgrounds. The geology module in the programme is probably too basic for geologists while the inverse theory course may be too simple for geophysicists. In fact, I understand that undergraduate students at Leeds may already have seen some of the course material taught as part of the MSc programme. Would it make sense to have optional modules as follows?
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.....

- 3) Positive feedback was given regarding the geophysical field trip. The students indicated their preference to have the field trip scheduled during the 2nd semester. (It is normally scheduled during the 1st one.)
- 4)
- 5)
- 6) The students commented that some of the lecturers show a lack of enthusiasm in their teaching. They also indicated that the corresponding course material was of poor quality and that marking of the associated coursework was questionable; most students received the same mark due to poor marking criteria and lack of clarity regarding expected deliverables. These comments should be of serious concern and the department should attempt to rectify the problem for the 2016-17 academic year. The poor level of student satisfaction was also reflected in the completed module survey forms, as indicated earlier in my review.
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- 11) Students would like to be given more opportunities to develop their oral presentation skills during the year, for example by presenting their field study report to the class.
- 12) Students suggested that an integrated field study group project would be a good addition to the course. Students commented that this would be a good preparation before joining an integrated asset team in the petroleum industry.

Re (3)-(5). Much advice is offered, but clearly not well taken, about seminar presentations – less about posters, and the “*Skills@Leeds*” guidance on the latter is indeed hard to find. Explicit pointers have already been added to the 2016-17 Project Handbook on these matters. Re weighting: we will consider moving to 7½:7½:5 from 10:5:5 for viva-seminar-poster respectively.

Re (6). This was a residual effect from last year, when our industry External’s *own employer* obliged him not to see *any* company projects. The Programme Leader admits to being over-cautious this year, but will be more assertive with the companies over who among the staff is allowed access next year. Our External Examiners are, legally, equivalent to in-house Leeds staff. It should be noted that at least one multinational company will *only* offer and host projects provided their confidentiality can be assured. Very few asked the Programme Leader to identify examiners’ and markers’ names, and forbid an industry-based External.

Re (7). I understand why this is attractive, and agree – but there is a lot to schedule that week, integrating with MSc Structural Geology activity and staff availability – we will do what we can!

Re (8). You're right. In future, the Programme Leader will require any students given a deadline extension to submit 'placeholder' content at the same time as those submitting full Dissertations. The 2016-17 project module Handbook has already been modified accordingly. Then, Externals have full flexibility in when/how they receive Dissertations or their proxy documents.

Re (9). Our teaching support staff are always striving to achieve this too. Incremental change in process happens every year.

Re (10). Our own former undergraduates do indeed have difficulty with 'replacing' SOEE5116 and any other that they may already have done. In fact, an advanced, field-based, reservoir geology course, SOEE5615, was (and still is, this year) available without any timetable clashes. A large number of others (geomechanics, reservoir simulation, GIS, even mathematics) have timetable clashes – at least one has now been avoided, making SOEE5070 Hydrogeology available easily. Nevertheless, I will still approach the 5116 teaching team with ideas for accommodating such students with e.g. more advanced assignments.

Re: student meeting

Re (3). We recognised the enforced re-timing as a useful "experiment", and sought feedback from the class at the time – only *one* student responded, who was completely equivocal! But yes, there are possible benefits and attractions. It's too late to move it for 2016-17 (logistics and payments have already had to be finalised) but we will discuss and review for future years. If it *is* moved, it *will* have to be formalised within a module e.g. including some assessment, though – perhaps of the form you suggest in your point (12).

Re (6). See Box (3) above, where this issue is also raised and a response offered.

Re (7). We have been providing the amount of formal contact defined in our Code Of Practice i.e. very few 'formal' meetings, but an 'open door' policy if individuals want to meet. The School now has a "Tutorials Manager", to improve this process throughout the School. I'll pass this on.

Re (8). This is a surprise. Exam Feedback forms are supposed to be a mandatory part of our marking. All S1 exams' feedback forms were done: several staff have since confirmed that they responded to all individual requests for exam debriefing. We will explore where the 'communication breakdown' arose. Yes, a brief feedback meeting on S1 exams could be held in term 2, but doing the same for S2 exams is less feasible because, by the time the exams are marked, the cohort has begun projects and dispersed to placements.

Re (9). Two supervisors who were away a lot *did* arrange for supervision to be covered by laboratory and/or academic staff, but I am sure there was a perception of, and possibly an actual, shortfall. The need to arrange **appropriate** cover if away will be stressed this in PDT meetings,

Re (10). Indeed – see point (10) above, where this issue is addressed.

Re (11). There is at least 1 team-based seminar in a taught module, and a practice opportunity is given part-way through the project. At this stage, we can't add/change assessed activity for 2016-17, but it can be borne in mind for the future. We have, in the past, had a formal series of short presentations included in one or more modules – but I was obliged to remove them as I was told we were 'duplicating teaching' and the course workload was too high.

Re (12). See point (3) above

Once again, let me thank you for your detailed and constructive comments, which I can assure you will be taken into consideration by the Programme Leader and the rest of the Programme Delivery Team.

Yours sincerely,

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EXTERNAL EXAMINER'S REPORT

ACADEMIC YEAR: 2015– 2016

Part A: General Information

Subject area and awards being examined

Faculty / School of:	Earth & Environment
Subject(s):	
Programme(s) / Module(s):	Exploration Geophysics
Awards (e.g. BA/BSc/MSc etc):	MSc

Name and home Institution / affiliation of Examiner

Completed report

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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?

NA

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

NA

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.*

Standards and programme-content are completely appropriate for an MSc level qualification in this field.

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.*

No national benchmarks

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.*

Assessment is through a combination of coursework, examinations, project-based dissertations and presentations. This combination is appropriate and accepted practice for master's level programmes in this subject area. The combination is also well suited to determining whether ILOs have been achieved.

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 breadth of assessment methods (see above) gives all students ample opportunity to demonstrate whether or not they have achieved the aims and 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

NA

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.

Excellent progress has been made, since last year, in spreading the management load for this programme so that issues such as succession-planning and programme-robustness in the event of staff unavailability are now much less of a concern than they were. In particular, I believe it is good practice to have an identified deputy leader for all such programmes.

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.

Several of the summer projects were in areas of active research by the staff (e.g. fractal modelling of reservoir properties) and this should be encouraged.

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

NA

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

NA

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.

I have nearly always been given all the information I need but, on the rare occasions where I have had to request additional information, that has been produced rapidly and courteously.

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.

Handbooks, specifications and teaching materials were provided in a combination of hard-copy and on-line formats. All such documents are appropriate for their tasks and most of them are excellent.

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?

I reviewed all exam papers prior to their finalization and my comments were taken fully into consideration. The exam questions were of an appropriate standard and written in a manner that enabled students to demonstrate their competence and knowledge.

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?

Clearly annotated exam papers, much of the coursework and half of the dissertations were made available to me. In addition, I attended the student seminars and observed student vivas. I am confident that I was able to accurately evaluate the standard of student work.

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

The breadth of topics covered by the dissertations is to be commended. Assessment is very thorough and the standard expected is appropriate.

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?

Administrative arrangements are exceptionally good, thanks to the dedicated (in both senses) staff member who oversees administration of master's degrees in the Earth & Environment School. I attended the board of examiners and was satisfied with the fairness and appropriateness of all procedures and am happy to endorse the board's recommendations.

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

Mitigating circumstances were considered by an appropriately staffed sub-committee and their conclusions were taken account of in an appropriate way.

Other comments

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

I am generally impressed by this programme. It does a good job of teaching geology-graduates physics and an even better job of teaching physics-graduates geology. The entire cohort then work through a challenging, appropriate and relevant syllabus which produces post-graduate alumni that Leeds can be proud of.

Based upon my own observations, the only significant areas of concern revolve around presentation skills. I am sure that the

comments I am about to make are already emphasised to the students but it is clear that they are not yet taking these issues with the seriousness they deserve and so I'd like to add my weight to the argument in the hope this will help to encourage better performance in future years. The issue is that the students produced excellent dissertations and then did not take on-board the fact that a verbal-presentation and a poster are very different things to a dissertation. As a result, the presentation slides and posters were far too text-rich and tended to show far too much information rather than concentrating on a few key points. In particular, many of the slides and posters showed a large number of tiny graphs for which the axis labels and axis values were completely unreadable. If the audience/poster-reader cannot see a plot clearly, it may as well not be there at all. Furthermore, nearly all the posters this year (with one exception) were in the form of A4-like pages of small text printed side by side, i.e. they were an executive summary of the dissertation rather than a poster. I have found some good advice on your VLE concerning presentation slides but I've not found any advice on poster presentation apart from the poster marking-criteria.

Other, minor issues are:

1. The paper-trail for mark moderation is excellent and extremely useful. However, it would help if people could very explicitly state things like "I agree that there is no scope to raise this mark" or "after discussion we agreed to award 55%" or whatever. I.e. please make it very clear that the full moderation process has been gone through and be very clear about what the result of that process was. It would then be very easy for me to agree that due process has been followed and, hence, to approve your marks.
2. Student comments gave me the impression that there was some dissatisfaction concerning practical instructions across a number of different courses. Staff who received a score below 50% for questions 1.10 & 1.11 should consider running their instructions past a colleague to see if any issues can be identified and rectified.
3. The quality of the final projects demonstrates that you have done a good job of teaching maths to geologists and geology to physicists but the process has been painful for some students. Can more support be put in place, especially to encourage students to help each other? Are students directed towards reading and on-line materials that could help? Is there a strategy or do you just throw them in and hope they can swim? This seems to be more of an issue for teaching the maths than for teaching the geology.

These were the concerns I had based upon my own observations of the documentation, seminars and vivas. However, we also held a meeting with the students and they raised a number of issues. The most important of these were as follows:

1. The programme leader and the programme administrator are superb and the students only had praise for these members of staff.
2. Many aspect of the programme were excellent such as the continuous access to a high standard of equipment/software, the links with industry and the EAEG trip.
3. As a result of field-equipment unavailability, the geophysics fieldtrip was held at the end of the taught programme instead of near the beginning. However, nearly all the students felt that this was a much better place to have this trip and so the programme leader should consider permanently moving it.
4. Two of the lecturers were not enthusiastically engaged with the programme. This lack of engagement led to a number of other problems such as excessive delays in return of coursework, poor lectures and poorly run practical sessions. This is very surprising to me; I have undertaken many external examiner duties over several decades and I have never heard this complaint before. The department needs to find out what has gone wrong and rectify the situation; are the issues with these staff members personal or are they indicative of a more general problem of excessive workload?
5. Students complained of lack of generic feedback on exam performance. The programme leader has shown us documentary evidence that this feedback is produced but we were unable to find it on the VLE. Is there a problem in the system somewhere so that the documentation is not getting to the VLE or is it put somewhere obscure making it hard to find? It would seem that the appropriate systems are in place but are not quite working out as they should.
6. The University's policy of not making past MSc papers available was criticised and I have to say that this is not a common policy in other institutions. The University may wish to reconsider this ruling.
7. Courses that were jointly attended by Geophysics and by Structural students caused several problems. Specifically: (i) there was insufficient time to get between classes; (ii) some days had no break, not even for lunch; (iii) some deadlines for coursework did not allow for the high lecture load and lack of daytime access to the PC lab when it was in use for this teaching; (iv) identical exercises had very different weightings for the two cohorts of students; (v) there was a much heavier workload in term 2 than in term 1. I understand that these issues are known and will be fixed for 2016-17.

As a caveat it should be said that, in most years, a much higher proportion of the students would have obtained jobs by this point. This issue is the consequence of the current low oil price but it almost certainly has an impact on students' perception of the programme.

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UNIVERSITY OF LEEDS

09 November 2016

Dear

RE: Response to External Examiner's Report – MSc Exploration Geophysics 2015-16

First, I must thank you for your hard work in reviewing the programme, and I am glad that you are pleased, overall, with the standards and student experience.

Academic staff on the course echo most strongly his positive comments about the administrative support staff – they are superb, and make a central contribution to maintaining the excellence of this and other programmes..

I am pleased that you have found many academic and scientific positives – such as the 'deputy PL,' the breadth and scope of projects, and so on. Below, I will respond to items of concern (some of which we knew already and have taken action on for the 2016-17 cohort), all of which are to be found in the "Other Comments" section of the report. This will all be made available at our next Exploration Geophysics (XGP) Programme Delivery Team (PDT) meeting.

“only significant areas of concern revolve around presentation skills”

Agreed. Much advice is offered, but clearly not well taken, about seminar presentations – less about posters, and the “*Skills@Leeds*” guidance on the latter is indeed hard to find. Explicit pointers have already been added to the 2016-17 Project Handbook, and the suggestion of your fellow External that we raise the weighting of the seminar may focus students' attention on this aspect.

“please make it very clear that the full moderation process has been gone through and be very clear about what the result of that process was.”

This has been expressed in School internal assessment board, with the result that often the forms are sent back to the teaching team, for more content. We will reinforce the need for clarity on the process of moderation with our Programme Delivery Team.

“practical instructions across a number of different courses”

This will be passed to all Module Leaders via the Programme Delivery Team Meeting.

“more support be put in place, especially to encourage students to help each other”

The geology training is fully timetabled, with a field class and team exercises where the disparate backgrounds are deliberately mixed. The mathematics has, previously, been purely online materials: however, starting *this* year, a set of support tutorials has already been added to the schedule. We will assess their impact (on e.g. SOEE5116 Inverse Theory), and consider it further.

“

“As a result of field-equipment unavailability, the geophysics fieldtrip was held at the end of the taught programme instead of near the beginning. However, nearly all the students felt that this was a much better place to have this trip and so the programme leader should consider permanently moving it”

We recognised the enforced re-timing as a useful “experiment”, and sought feedback from the class at the time – only *one* student responded, and was completely equivocal! But yes, there are possible benefits and attractions. It’s too late to move it for 2016-17 (logistics and payments have already had to be finalised) but we will discuss and review for future years. If it *is* moved, it *will* have to be formalised within a module e.g. including some assessment, though.

“Two of the lecturers were not enthusiastically engaged with the programme excessive delays in return of coursework, poor lectures and poorly run practical sessions”

We were made very aware of this at the time. Whilst some of these concerns reflect a need to reinvigorate our teaching, in part at least, the causes seemed to be friction caused by the ill-fitting merger with SGeol schedule, and the XGP class’ own poor attitude (created by their late realisation of limited job prospects). SEE’s Teaching Management has had discussion with the relevant staff and we will monitor closely for any recurrence. The need to modernise some content, delivery, and assessment, has been accepted and this is recorded in Module Moderation documents.

“generic feedback on exam performance”

Exam Feedback forms are supposed to be a mandatory part of our marking. The Student Support office will look into the VLE aspect, and I’ll stress the point at a Programme Delivery Team meeting. A brief feedback meeting on S1 exams could be held in term 2. Doing the same for S2 exams is less feasible, since by the time the exams are marked, the cohort has begun projects and dispersed to placements.

“not making past MSc papers available”

Whilst we cannot make full papers available where questions are re-used, we do ask Module Leaders to make sample questions and indeed mock papers available to enable students to revise effectively and practise exam technique.

“Courses that were jointly attended by Geophysics and by Structural students caused several problems”

This process has run fairly smoothly in the past, but for 2015-16, the existing XGP syllabus had to be blended into a much-rearranged Structural Geology programme (with modules of different credit value, etc.). Much discussion and negotiation has already taken place between Programme and Module Leaders. We hope these teething troubles will be ironed out this year.

“in most years, a much higher proportion of the students would have obtained jobs by this point”

For information, our tally 3 weeks after the end of the course is 30% in geoscience jobs, 20% in other professional jobs, 50% unknown or still seeking. I am sure this did influence the cohort’s attitude – many staff remarked on it, especially during some of the contentious sessions noted above.

Yours sincerely,

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