

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:	Earth and Environment
Subject(s):	<i>Environmental Sciences</i>
Programme(s) / Module(s):	BSc Environmental Science (and Industrial/International variants) BSc Meteorology and Climate Science (and Industrial variant) MEnv Environmental Science (International) MEnv Meteorology and Climate Science (International)
Awards (e.g. BA/BSc/MSc etc):	BSc/MEnv

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 is a strong module moderation procedure involving a written comment-response exchange between the module teaching staff and the moderator. This provides clear documented evidence of changes needed to benefit individual modules, and there are good examples of this mechanism being put to use very effectively.

The enthusiasm of the teaching staff comes across very strongly in both the module surveys and in discussions with current students, and the School should be commended for this.

There is an extensive and valuable diversity in assessment approaches across the modules on these programmes, and this of great benefit to students, both for widening the range of skills they develop and for engaging them more effectively with module subject matter.

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 new level 3/5 module on Ice in the Earth System was introduced this year, and this has broadened and strengthened the offering in the Environmental Science programme in particular. The module survey suggests that it was well received by students, with a range of very positive comments.

Matters for Urgent Attention

None

For Examiners in the first year of appointment

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

For Examiners completing their term of appointment

4.	Have you observed improvements in the programme(s) over the period of your appointment?	Y / N
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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 clearly and logically structured, and include a broad range of content that spans both core and optional material. There is support for students' academic development as they progress from year to year, and high standards are maintained throughout. The aims and learning outcomes of the different modules are tailored to the module content, allowing students to build appropriate skills and understanding, and these fit together well to meet the overall aims of the programmes.

13.	Is the influence of research on the curriculum and learning and teaching clear?	Y
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Many of the individual modules on these programmes are research-led, taught by active and internationally-respected researchers, and this is a major strength of the programmes that has a direct benefit to the student learning experience. There is a strong interaction with current research through the Frontiers module (SOEE3710), where students are exposed to the broad range of research going on in the School. This module gets positive ratings from students, with minor issues over assessment approaches that I raise below. Students undertake their own research as part of their dissertation project (SOEE3030/5400M), and there are examples of these that span a wide range of topics, building strongly on the research interests of the School. The completed dissertations are generally of excellent quality, often nearing the standards needed for publication in the scientific literature.

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)?	Y
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The Environmental Science programme is accredited by the Institution of Environmental Sciences, and the Meteorology and Climate Science programme is accredited by the Royal Meteorological Society. The former have

few requirements beyond alignment with QAA benchmarks, but accreditation allows students to benefit from IES student membership, which may benefit them in their future careers in the field. The latter have more stringent and rigorous requirements for meteorological content, and gaining RMetS accreditation clearly benefits the Meteorology and Climate Science programme through recognition of the high standards at which it is taught.

Assessment and Feedback

17.	Does the programme design clearly align intended learning outcomes with assessment?	Y
<p><i>Please comment on the assessment methods and the appropriateness of these to the ILOs, in particular: the design and structure of the assessment methods, and the arrangements for the marking of modules and the classification of awards; the quality of teaching, learning and assessment methods that may be indicated by student performance.</i></p> <p>The programmes include a healthy variety of assessment methods across the component modules that includes essays, multiple choice questions, group presentations, oral weather forecasts, media articles/rebuttals, learning logs/wikis, and modelling, lab and fieldtrip reports. This diverse range of approaches is a major strength of the programme, and the assessment methods typically align well with the aims of the individual modules.</p> <p>I reviewed the marking of exams and coursework across a wide range of modules at L2/L3/L5 levels, and this appeared fully appropriate. There is some inconsistency in the amount of feedback provided from module to module and marker to marker. While there are certainly many examples of good practice, there are also areas for improvement, and I have noted some of these in the sections below. I am pleased to see electronic/online marking and feedback provision for coursework being used very effectively across a wide range of modules.</p> <p>The quality of the teaching is very high, and students were very positive about their learning experience, commenting on the enthusiasm of many lecturers as a particular strength.</p> <p>The moderation procedures adopted across the programme are good, but I feel that it is best to avoid moderation by staff teaching on the module wherever possible – a more independent perspective would be beneficial.</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 on the programme are high, and match or exceed those with which I am familiar from comparable programmes at other institutions.</p> <p>Students in the current third year are notably weaker than those in previous years, and this is fully consistent with their performance in the second year last year, so is not unexpected. In fact, I feel that the consistency in the performance drop seen across third year modules is good evidence for the consistency of assessment procedures across modules and between years, and can thus be seen as a strength of the existing programme structures and procedures.</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>SOEE3030/5400M dissertation project marking: The range of dissertation topics is really impressive and the overall standards are high, but the approaches to assessment need to be clarified. The marks distribution is relatively narrow, and many students lie very close to the 2:1/1st boundary. There is little agreement between first and second markers; for the seventeen students lying in the 68-71 range, none received marks from their initial markers that were even in the same class. This suggests that the diversity in marking is as great as the diversity in student performance. The approach of calling on third markers to resolve these differences is appropriate, but was not always sufficient to settle on a satisfactory final mark. I would recommend that markers are given stronger guidance on classifications, for example through the use of clearly-defined grade descriptors that indicate what is expected of a dissertation reaching 1st, 2:1, 2:2 levels, etc, so that the discrepancy between first and second markers can be kept to a minimum. On the positive side, the feedback sheets that the students receive for their dissertations are very good, and the transparency of the moderation process through exchange of emails is to be commended.</p> <p>SOEE3710 Frontiers module: Students I spoke to were positive about the module, but complained about the lack of lecture capture, not knowing what topic was up next, and low lecture turnout (not helped by being scheduled at 9 am). The most substantive complaint was about assessment through an assigned literature review; students</p>		

wanted some element of choice at this stage in their programme. A literature review is a good approach to assessment for an L2 module, where it can serve as a foundation/trial run for future dissertation work, but this benefit is lost at L3. An alternative assessment approach should be considered here – perhaps an exam with questions covering a predetermined range of topics (rotating from year to year), or alternatively a coursework activity that draws on the breadth of the subject matter and allows students to make links between different parts of their programme (e.g. covering big-picture environmental issues). Either of these approaches would permit marking by a relatively wide range of teaching staff and thus avoid the problem of overburdening particular staff.

Consistency of marking: Students I spoke with expressed concern about inconsistency of marking between modules, and thus the implications of module choice for their final marks. I did not find clear evidence to support this, although I would agree that L5 coursework marking for SOEE3760 was rather generous (as fully recognised in the module moderation form), with the potential to disadvantage students not taking the module.

Feedback: Students feel that this is often insufficient, and would like more information on how they could improve. This was a particular problem for the Arran fieldtrip (which in other respects received very positive comments), where comments made to them about how well things were going during the trip were not consistent with the final marks they received. They did not feel that they got feedback on what they could have done to score more highly.

The Progression and Awards Process

20.	Were you provided with guidance relating to the External Examiners role, powers and responsibilities in the examination process?	Y
21.	Was the progression and award guidance provided sufficient for you to act effectively as an External Examiner?	Y
22.	Did you receive appropriate programme documentation for your area(s) of responsibility?	Y
23.	Did you receive appropriate module documentation for your area(s) of responsibility?	Y
24.	Did you receive full details of marking criteria applicable to your area(s) of responsibility?	Y
25.	Were you provided with all draft examination papers/assessments?	Y
26.	Was the nature and level of the assessment questions appropriate?	Y
27.	Were suitable arrangements made to consider your comments on assessment questions?	Y
28.	Was sufficient assessed work made available to enable you to have confidence in your evaluation of the standard of student work?	Y
29.	Were the examination scripts clearly marked/annotated?	Y
30.	Was the choice of subjects for final year projects and/or dissertations appropriate?	Y
31.	Was the method and standard of assessment appropriate for the final year projects and/or dissertations?	Y
32.	Were the administrative arrangements satisfactory for the whole process, including the operation of the Progression and Awards Board?	Y
33.	Were you able to attend the Progression and Awards Board meeting?	Y
34.	Were you satisfied with the recommendations of the Progression and Awards Board?	Y
35.	Were you satisfied with the way decisions from the School Special Circumstances meeting were communicated to the Progression and Awards Board?	Y

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

As in previous years, the administrative team in the School have been highly efficient in providing access to all the appropriate module and programme documentation, along with coursework and exam scripts, in a timely and effective manner.

Other comments

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

Module Survey: It was good to see the new student surveys used consistently across modules, providing valuable student feedback, but the response rate remains very low, often close to a 30% level. Some effort is needed to try to raise this level so that the statistics are more meaningful, and so that a more representative range of comments from students is available.

SOEE2165 climate change: human dimensions: There were a number of issues associated with delivery and assessment of the module this year, and the student feedback was not positive. I understand that the module leader left; I feel that the moderation procedure adopted was fully appropriate under the circumstances and that the resulting marks were a good reflection of student performance.

SOEE2700 research and career skills: This is a valuable module covering an important range of skills, but there is a problem with its overall coherence. Students I talked to were insufficiently clear about the purpose of the module. Question 1 on the module survey regarding overall satisfaction did not receive a single "Strongly Agree", and this sets it apart from almost every other module on the programme. There were positive comments (mostly) on the statistics section, but the environmental measurements lectures came in for criticism for relevance. There were negative comments on the careers elements, which need some refinement (too much consultancy, all past students male). There was also some concern from students over the balance of assessment, where the weighting of component pieces of coursework did not reflect the time required (Kyoto report vs. careers plan, in particular).

SOEE3700 weather forecasting: This remains an important, well-received, but challenging module. Students I talked to commented that expectations need to be clearer and they felt that they needed more support, particularly at the start of the module where the learning curve is steep.

SOEE3610 oceanography: Difficulties from last year associated with this module being taken over by a new teaching team have generally been overcome. However, there is still an issue with the marks distribution (a large proportion of firsts); it would be helpful to make the exam questions less fact-based (moderator suggestion) and to introduce a coursework element (suggested in student feedback, and in my examiner comments last year: it is not clear why this module is assessed through an exam only).

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	
<i>Faculty of Environment / School of Earth and Environment</i>	
School of Earth and Environment Maths/Earth and Environment Building The University of Leeds Leeds. LS2 9JT United Kingdom	

*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

It is pleasing to hear that our module moderation process is clear, effective and strong, and that you deemed our range of assessments valuable. We always highlight the final year dissertation as a key component of our degrees and it is therefore pleasing that the high quality of these dissertations stands out. Finally, it is always pleasing to hear that quality of our teaching is high and that our students praise the enthusiasm of our staff.

Response to Enhancements made from the previous year

I was pleased to see that you find the new module on Ice in the Earth System has strengthened the Environmental Science programme.

Response to Matters for Urgent Attention

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

No matters were raised.

Response to questions 1-7 (and related comments)

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

These questions were not answered and no comments were made.

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:

I am pleased that you are satisfied with the overall standards of our degrees and that our students are receiving a high quality, well-structured and rigorous course.

You have pointed out that the diverse range of assessments in our programmes is one of our major strengths, which is encouraging to hear. However, you also point out that there is some inconsistency in the amount of feedback provided from module to module and marker to marker. We realise that there is still a small proportion of staff, who do not provide the expected level of feedback and we are working to address this through staff briefings and through the moderation process. Please note, this is a school-wide issue. The school is experimenting with

different forms of feedback to find methods, which increase student learning.

We are pleased that you recognise the robustness of our moderation processes. We have traditionally tried to ensure moderators have some familiarity with the material in the module to ensure they can make informed comments on the module assessments and delivery, however with a move towards team-teaching and a larger modules it has become harder to ensure the moderator is also independent from the delivery of the module. Where moderators are involved in delivering a component of a module there is always cross-moderation. Typically the module leader would moderate any coursework on that component of the module. We realise that for transparency this is not ideal and it is something we can revisit in assigning module moderators for next year. We will look to remove this practice where possible. However, there are a few modules where specialist knowledge is required to moderate the module.

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:

It is good to hear that the **dissertations** at both level 3 and level 5 cover an impressive range and that detailed feedback is given for the dissertations. You are particularly concerned with the facts that marks distribution is relatively narrow (many students lie very close to the 2:1/1st boundary), and that for the few students in the 68-71 range there was disagreement between marker one and marker two and that often both markers were giving marks in a different marking category. We are taking your suggestions very seriously. A key part of this is that we are rewriting the marking criteria to make them more detailed and more fine-grained, so that it is very clear to every marker what is expected for each marking category from the students.

You point out that the students like **SOEE3710 *Frontiers in Environmental Research***, but that they are unhappy about the lack of lecture capture, not having a schedule for all the lectures, the timing of the lecture (9 a.m.), and mainly about the assessment, which is currently in the form of a literature review on an assigned topic. The first two points can be addressed easily by making this information available in the module handbook. The outgoing module leader had decided against using lecture capture in order to motivate students to attend the lectures. The timing is harder to change as it depends on a number of timetabling constraints. Regarding the assessment, this is good point that we need to address. We are in the process of updating the programme learning outcomes for all of our programmes and evaluate if the individual modules address these learning outcomes. As part of this exercise we need to critically rethink what we assess in each module. This provides a good opportunity to update the assessment for SOEE3710. We will discuss if an exam or different form of course work appropriate for level 3 would be a better alternative. The current idea of the new module leader is to accompany the lectures by a seminar every three weeks run by a lecturer and a PDRA with roughly 10 students attending each seminar. Each student is required to read a paper, which will be assigned to him/her by the lecturer. All students need to attend at least one seminar. The students need to write a short summary about the paper and present the paper in the seminar. This work will then be marked. The additional course work might encourage attendance at the lectures, and would help to stimulate inter-disciplinary thinking. The “paper summary and context” assessment would make up 30% of the coursework and the 3000-word essay 70%.

You mention that the students are very concerned about inconsistency of marking, but that you did not find evidence for that. The only module you highlight is **SOEE3760 *Terrestrial Biosphere in the Earth System***, where the level 5 marks were given too generously as also mentioned in the module moderation form. This is a point we will address by rethinking what is expected from level 3 and level 5 students in this module. The above mentioned exercise to see how each module maps against the programme learning outcomes will provide a good opportunity to do that.

We have worked hard to improve the quality and timeliness of **feedback** over the last few years, particularly with the introduction of electronic marking and feedback. You mention, that students still find that the feedback is insufficient. You highlight that on the Arran fieldtrip the students would have liked to get more feedback on how they could have achieved higher marks. The module delivery team can directly address this point next year. In this year field trip to Arran a lot more feedback has been provided to the students. Additionally, areas where the students lost marks or could have gained additional marks were identified by the staff marking the various activities.

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:

It is pleasing to see that our administrative team impresses you, and that you have raised no issues regarding the

progression and awards process.

Other comments

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

The **module surveys** provide valuable insights into how the students perceive our teaching. As you mention the response rate is very low at about 30%. We are looking to increase participation by allocating time in lectures for students to complete the forms or by finding ways to make it more appealing for students to complete the forms. This is an across-school issue and something that will be discussed at the school teaching staff meetings.

I note the student dissatisfaction with **SOEE2165 Climate Change: Human Dimensions**. As you point out, the module leader has left the university and someone else will teach the module this year. The module has been overhauled considerably since last year by the new module leader. Some of the content, assessment and format of delivery are different now. The overall change of the module will hopefully address the majority of negative feedback points. The late feedback this year was related to the delay in the moderation process. The outgoing module leader was late with submitting the moderation form and did not provide sufficient and correct information about the marking. An additional moderator was asked for help and the whole process took much longer than it normally would. The moderation procedure was very thorough, and the moderator checked all marks and not just a subset of 20%. An additional moderator was then asked to carry out the actual moderation. As the module leader has left the university and the new module leader has restructured the module this will not be an issue in the current academic year.

I am pleased to read that you see the high value in **SOEE2700 Research and Career Skills**. We have discussed how we can change and joint up the different aspects of this module in several Programme Delivery Team meetings and come up with a plan, which we will be put forward for approval in January. We would like to introduce more lab work and practical skills and join the different aspects of the modules so the students are able to see the benefits of the course. As part of this we will also revisit the forms of assessments.

As you have mentioned in your report this years level 3 students have been consistently weak. They have struggled more than students in previous years with **SOEE3700 Practical Weather Forecasting**. Nevertheless, as you pointed out, the learning curve for this module is very high, as the students have to learn how to use a numerical weather prediction model, a scripting language and to use the Linux environment. To provide more support we have more demonstrators this year in the first couple of weeks to provide more one-to-one help for the students in this critical phase. Additionally, we are strengthening the teaching on 'computing' throughout the programmes and have introduced tutorials on Python in level 1 (SOEE1442) and are currently developing a new module on programming and data analysis with Python for level 2. The consistent teaching of programming through all levels of our programmes will make it easier for students in the future to make progress in SOEE3700 as they will be familiar with Linux and scripting.

I am pleased to see that the previous difficulties with **SOEE3610 Oceanography in the Earth System** have been overcome. You point out that there is a large proportion of firsts, which could be due to the fact that a number of exam questions are fact-based. You suggest introducing an additional coursework element to have two forms of assessment. This is how many of our modules are assessed and we will consider developing a new form of assessment for this module. The module leader has made the exams less fact based and focussed the long answer questions on critically assessing problems and approaches in oceanography. There were a lot of firsts in the cohort of 2016/17 as you have pointed out. The module leader has the impression this was a particular good cohort of students and feels the high marks are justified.

Once again we would like to thank you for your detailed and constructive comments. It is pleasing to know that we are doing well and that overall our students are satisfied. We are however always looking to improve and as always your independent perspective is a valuable part of the review and development process.