

The University of Leeds

EXTERNAL EXAMINER'S REPORT

ACADEMIC YEAR: 2011– 2012

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

Faculty / School of:	Engineering/Process, Environmental and Materials Engineering
Subject(s):	<i>Petroleum Engineering</i>
Programme(s) / Module(s):	
Awards (e.g. BA/BSc/MSc etc):	MEng/BEng

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 Academic Quality and Standards**
Academic Quality and Standards Team
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

Nothing urgent, although persuading the best students to go on to the MEng 4th year is an issue for maintaining the highest standards for this course. The benefits of this for both student and their employer perhaps need addressing early in the course. The top firsts were all awarded BEng.

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?

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

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.*

- *Programme aims and content are appropriate for what you would expect at undergraduate level.*
- *Standards are in line with level of a BEng course. No MEng cohort yet.*

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 ILOs and level of the taught material and assessment compares very favourably with the few similar courses offered at undergraduate level in the UK eg <>.*

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.*

- *There is good evidence from the papers and variety of assessment methods used that the course design has been innovative and at the forefront of petroleum engineering issues and principles.*
- *There is a problem with bunching of coursework marks around 70% which does not discriminate as much as the examinations between the very good and weaker students.*
- *There is some evidence that on coursework SOEE is more generous than SPEME, especially at the lower end. In a system where there are strong absolute guidelines on the marks required for each degree classification, uniformity of marking standards across Schools is key.*
- *The basis of awarding individual marks for the Design Project group activity is not transparent. In particular the marks for each component (Project Management, Part 1 Report, Part 2 Report and Oral Presentation) should be given with more information on how they are assessed and the assessment criteria eg sample marks form.*
- *The results, and reports/posters inspected by me, indicate that the overall quality of teaching was high and the assessment procedures rigorous and fair.*
- *The pro-forma used by SOEE for exam/course evaluation is excellent for feedback and continuous course improvement. Something similar for the Process Engineering courses would be extremely valuable, both for assessment purposes and quality control/improvement.*

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 results of the students reflected that the course aims and ILOs had been effectively communicated to the students through the teaching, with a degree class distribution typical of a normal, or possibly stronger than average, cohort: 8 1sts, 11 upper seconds, 8 lower seconds, 2 thirds.*
- *Their overall performance seems comparable to the Chemical Engineering BEng cohort with whom many modules were shared.*
- *The course is a good balance of Petroleum and Process Engineering, with a spread of upstream and downstream related topics, geological and chemical issues in addition to engineering.*
- *The Petroleum Engineering students again tended to do less well on the other courses (Separation Processes, Engineering Science, Chemical Sciences for Engineers...) than the mainstream Petroleum courses. In particular they generally struggled with courses given by SOEE, especially Strategic Energy Issues and Seismic Exploration.*
- *Overall the Design Projects were particularly strong. However, whilst three of the topics addressed key current process issues for oil and gas, with much scope for innovation; the fourth by contrast (North Sea reservoir water flooding) looked rather routine.*

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.

Nothing obvious. The Petroleum Engineering cohort were seen to participate better in the Reservoir Architecture field trip this year than last; this may be a quality issue or better integration of the courses across the two Schools.

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.

This is difficult to judge from the examinations and project work, although the latter covered several topics that are at the forefront of Petroleum Engineering new technology development (eg CO₂-enhanced recovery, heavy oil recovery), so the students will have been exposed to current research issues through these.

For Examiners involved in mentoring arrangements

8. 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

9. 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, the material provided and the access afforded were both sufficient to evaluate the course and the fairness of the assessments. Further information on project marks breakdown was provided on request and it was made clear that further information would be provided if needed. The Energy and Environmental Engineering external examiner and myself both agreed that full evaluation of the design and research projects really required us being present at the final presentations. It was agreed that this will be facilitated in 2012-13, even though this will mean one or two extra visits.

10. 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.

More details on the scope of the individual modules would be useful (and could have been requested). Judging this from examination content alone may be misleading. Marking criteria were generally provided with model solutions, but could be more explicit for the more qualitative questions. How coursework assignments are combined with examination marks to give an overall total should be made more explicit...sometimes the marks on the examination scripts do not correspond to those on the marks sheets, because of some unspecified assignment whose weighting is small but not explicit.

11. 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 – on both counts. Corrections were mainly about clarity rather than level. The questions had a strong numerical emphasis, as befitting the subject area, but gave scope for the better students to demonstrate understanding and insight into the process engineering concepts.

12. 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 – see above.

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

Yes – see above. The routine North Sea water-flooding design project could be replaced by a more leading-edge technology next year. More transparency on how individual design marks were assigned would be valuable – see above also.

14. 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?

Excellent...<<>> coordination and arrangements were first-rate. The meeting was very efficiently run, whilst allowing time for full discussion. I agreed with all the recommendations.

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

Each case was fully discussed, especially where special circumstances needed to be considered.

Other comments

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

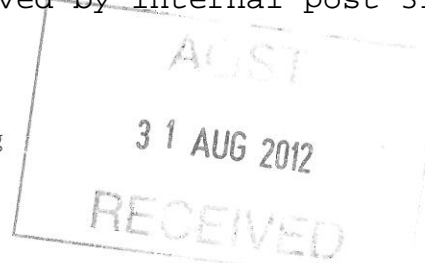
The course clearly attracts some excellent students. I interviewed two of the 2i's who were very articulate and a credit to the course, so there is clearly strength in depth. If anything can be done early on to encourage the top half of the class to persuade their sponsors of the benefits of the MEng course, the full potential of more students will be realised. I provide some of the feedback from the students for your consideration:

- Inclusion of more process engineering (alongside the petroleum) would be appreciated, along with more guidance on how to structure the project (which they felt the Chemical Engineering cohort had more of).
- Consider having the Energy Strategy course earlier in the course, with more help on how to structure essay type work with which they are less familiar than SOEE students) because of the generally quantitative nature of the course.
- More field work/site visits relating to the upstream operations would be appreciated eg rig visit or drilling school.
- Most students want to do a Masters before entering the oil and gas industry; the uncertainty over accreditation of the MEng course this year may have been a factor in so few students choosing this route, rather than going elsewhere.
- More use of peer assessment forms in the design projects (not used in term 2 this year?).

Overall the students were very appreciative of the strong support and teaching quality they received from the staff running the course.

Faculty of Engineering

School of Process, Environmental and Materials Engineering
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UNIVERSITY OF LEEDS

30 August 2012

Dear

External Examiner's Report 2011/12 – MEng/BEng Petroleum Engineering

Thank you for your External Examiner's Report for our MEng/BEng degree programme in Petroleum Engineering. I have copied this to our Director of Student Education () and the Head of Process Engineering (), and their comments are incorporated with mine below.

Firstly, thank you for the complimentary remarks about the content of the programme and the quality and standards that we aim to achieve. Your comments about the quality of the level 3 design projects are also much appreciated and will be passed on to the teaching team. However, your concern about the choice of one topic is noted and will be looked at by the staff responsible for design projects.

Secondly, in response to your particular points:

- The uniformity in marking of coursework between SPEME and SOEE will be raised at the next joint meeting of relevant staff from the two schools.
- The use of the SOEE feedback pro-forma in SPEME modules will be investigated.
- In line with other programmes in the School, further details on marking schemes and a breakdown of coursework/exam marks will be made available for each module during future visits.
- Your agreement with our suggestions for External Examiners to meet with students during project presentations is welcome and we will endeavour to facilitate this for next session.

This marks the conclusion of your duties for 2011/12. Once again, many thanks for your efforts this year and we look forward to seeing you again next session.

Yours sincerely

Head of School.