

# The University of Leeds

## EXTERNAL EXAMINER'S REPORT

ACADEMIC YEAR: 2018-19

QAT Received 06/07/2020

### Part A: General Information

#### Subject area and awards being examined

*Title and Name of Examiner:*

*Faculty / School of:*

Chemical Engineering

*Subject(s):*

MSc Advanced Chemical Engineering  
MSc Chemical Process Engineering

*Programme(s) / Module(s):*

Specific taught and project modules covered  
CAPE5300M01 Chemical Product Design and Development  
CAPE5301M01 Separation Processes  
CAPE5305M01 Chemical Process Technology  
CAPE5311M01 Reaction Engineering  
CAPE5312M01 Batch Process Engineering  
CAPE5315M01 Chemical Engineering Principles  
CAPE5325M01 Pharmaceutical Formulation  
CAPE5331M01 Nuclear Operations  
CAPE5340M01 Advances in Chemical Engineering  
CAPE5330M01 Advanced Reaction Engineering  
CAPE5000M Research Project (MSc)

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

MSc

### 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.*  
My main comment is to thank the commitment of staff to deliver a range of courses to a very specific group of students who have come through a chemical and process engineering first degree, and to those who have not, across both MSc programmes. Balancing the prior knowledge and background of individual students to fit with range of subjects is a challenge.

Some of the examination papers are particularly focused rightly on the research strengths within the School and some are general – which is just as it should be for the programmes, but it is pleasing to see such a strong link.

#### Enhancements made from the previous year

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

The main challenge last academic year was to deal with the changes in infrastructure – changes to the buildings and access to specific laboratory areas. Students interviewed in previous visits mentioned these as difficulties and the impact on their degree awards. It was unfortunate that no students were available to discuss the aftermath of these changes on their experience.

#### 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*

I made a specific comment regarding the lack of emphasis on safety in one of the project components that was presented to me this year. I understand it may have been a change introduced this year. Process safety and risk assessment is a critical part of a process engineer's discipline and it would be remiss to not include this in a design type project even if this is part of a taught course/module.

#### For Examiners in the first year of appointment only

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

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

4.	Have you observed improvements in the programme(s) over the period of your appointment?	Y / N
5.	Has the school responded to comments and recommendations you have made?	Y / N
6.	Where recommendations have not been implemented, did the school provide clear reasons for this?	Y / N
7.	Have you acted as an 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 / N
9.	Does the programme structure allow the programme aims and intended learning outcomes to be met?	Y / N
10.	Are the programme aims and intended learning outcomes commensurate with the level of award?	Y / N
11.	Did the Aims and ILOs meet the expectations of the national subject benchmark (where relevant)?	Y / N
12.	Is the programme(s) comparable with similar programmes at other institutions?	Y / N

*Please use this box to explain your overall impression of the programme structure, design, aims and intended learning outcomes.*

The programme structure allows for a range of core and specialist topics to be covered in a well packaged arrangement. The level of examinations and project work matches those which you would find in equivalent programmes, possibly more challenging in some areas that are of specific research interest in the School. With any programme that has optional courses, ensuring attainment of overall learning outcomes is a challenge and the articulation between programme aims and LO's to those needed by the PSRB will have to be clearly annotated.

13.	Is the influence of research on the curriculum and learning and teaching clear?	Y / N
-----	---	-------

*Please explain how this is/could be achieved (examples might include: curriculum design informed by current research in the subject; practice informed by research; students undertaking research)*

There is a strong influence from the research to these taught programmes shown through the research projects.

14.	Does the programme form part of an Integrated PhD?	Y / N
-----	--	-------

*Please comment on the appropriateness of the programme as training for a PhD:*

Students on the CDT take some of the courses offered and it has been a pleasure to speak to those students on previous visits. It has been unfortunate that for this year, that none of the current cohort were available.

15.	Does the programme include clinical practice components?	Y / N
-----	--	-------

*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 / N
-----	--	-------

*Please comment on the value of, and the programme's ability to meet, PSRB requirements here:*

The Engineering Council web site lists both programmes as accredited as further learning for CEng, under the remit of the Institution of Chemical Engineers. I note that the programme is only accredited up to 2019. Any requirements for re-accreditation have not been part of discussions with staff.

## Assessment and Feedback

17.	Does the programme design clearly align intended learning outcomes with assessment?	Y / N
<p><i>Please comment on the assessment methods and the appropriateness of these to the ILOs, in particular: the design and structure of the assessment methods, and the arrangements for the marking of modules and the classification of awards; the quality of teaching, learning and assessment methods that may be indicated by student performance.</i></p> <p>In terms of the assessment methods, and the marking arrangements are appropriate to the degree. There is a mix of formal examinations in mandatory and optional courses/modules and project work as part of or as complete courses/modules. The variation in type of subject areas provides the breadth needed to satisfy a number of key engineering based learning outcomes that would constitute those needed for a CEng qualification. The marks for each separate course are collated in an appropriate manner to award the MSc degree.</p>		
18.	Is the design and structure of the assessment methods appropriate to the level of award?	Y / N
19.	Were students given adequate opportunity to demonstrate their achievement of the programme aims and intended learning outcomes?	Y / N
<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>Based on the marks, students exhibited an expected variation in levels of understanding. There wasn't one particular subject/course which was markedly different from another as I can recall.</p>		
<p><i>Please use this box to provide any additional comments you would like to make in relation to assessment and feedback:</i></p>		

## The Progression and Awards Process

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

33.	Were you able to attend the Progression and Awards Board meeting?	Y / N
34.	Were you satisfied with the recommendations of the Progression and Awards Board?	Y / N
35.	Were you satisfied with the way decisions from the School Special Circumstances meeting were communicated to the Progression and Awards Board?	Y / N

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

In relation to point 24 – on the majority of exam solutions provided prior to the exam, a detailed marking scheme would be provided which helped to identify the more key points to be assessed. There were some that didn't which made it a challenge to match the given mark.

In relation to point 29 – all examination scripts were annotated by the primary marker with marks transcribed to the front cover. On some scripts, there was evidence of second marking and checking using a red-green pen approach. I made a comment at the board meeting that this was good practice and was to be encouraged across the programme team.

In relation to point 32, the arrangements for passing examination scripts and for reviewing the papers, coursework and project work was more than satisfactory. Efficient layout of the completed scripts and project work makes the external examination process easier.

#### Other comments

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

### Name of School and Head of School (or nominee)

Title and Name of Examiner:

Subject(s):

MSc Advanced Chemical Engineering  
MSc Chemical Process Engineering

Programme(s) / Module(s):

Advanced Chemical Engineering:  
CAPE5300M01 Chemical Product Design and Development  
CAPE5312M01 Batch Process Engineering  
CAPE5325M01 Pharmaceutical Formulation  
CAPE5331M01 Nuclear Operations  
CAPE5340M01 Advances in Chemical Engineering  
CAPE5330M01 Advanced Reaction Engineering  
CAPE5000M Research Project (MSc)

Chemical Process Engineering:  
CAPE502001 Team Design project  
CAPE5300M01 Chemical Product Design and Development  
CAPE5301M01 Separation Processes  
CAPE5305M01 Chemical Process Technology  
CAPE5311M01 Reaction Engineering  
CAPE5312M01 Batch Process Engineering  
CAPE5315M01 Chemical Engineering Principles  
CAPE5000M Research Project (MSc)

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

MSc

Title and Name of Responder:

Position\*:

Head of School

Faculty / School of:

Engineering and Physical Sciences / Chemical and Process Engineering

Address for communication:

School of Chemical and Process Engineering  
Engineering Building  
University of Leeds  
Leeds LS2 9JT

Email:

Telephone:

\*If the individual responding to the report is not the Head of School please state their position within the School.

### Completing the School response

The completed School response (including the full original report) must be sent directly to the External Examiner. A copy must also be emailed to the Quality Assurance Team at [gat@leeds.ac.uk](mailto:gat@leeds.ac.uk). External Examiners should receive a formal response no later than six weeks after receipt of the original report.

#### Response to Points of innovation and/or good practice

We would like to thank \_\_\_\_\_ for his positive remarks about the innovation and good practice aspects of the MSc programmes. The comments on the examination papers are also very welcome.

#### Response to Enhancements made from the previous year

Although the backlog maintenance work caused some difficulties in accessing the SCAPE building and laboratories, it was not to the detriment of attainment of students' academic potential. The maintenance work completed before the start of the 2019-20 academic year. The changes in the building infrastructure have provide improved facilities including laboratories, study and breakout areas for students, which is expected to have a positive impact on their work

**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:

The External Examiner's comment regarding the lack of emphasis on safety in the project component (CAPE5020M Team Design Project of the MSc Chemical Process Engineering programme) has been addressed by introducing a section on the *Safety, Health and Environmental*. In addition, students are required to attend a 2-hour lecture and 1-hour tutorial on *HAZOP* delivered by engineers from the National Nuclear Laboratory. This aspect will be further enhanced in 2020-21 by introducing *Plant health and safety issues (HAZOP)* in the syllabus of CAPE5305M Chemical Process Technology.

**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:

N/A

**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:

Once again, the positive comments on the standards are very welcome. We have noted the point on articulation between programme aims and LO's of the optional modules (for the MSc Advanced Chemical Engineering programme). This will be clarified in relevant documents.

**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:

The Examiner was satisfied with assessment methods and feedback arrangements. Although no urgent action is required, we always strive to improve these aspects through annual module and programme review.

**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:

In response to comment on point 24 – The School has a clear policy on providing a detailed marking scheme in the model solutions of each exam question. This was strictly enforced for all exam papers in 2019-20.

In response to comment on point 29 – We have noted Examiner's comment at the board meeting. In fact, it is the School policy to independently check the marks transcribed to the front cover of the examination script by the primary markers for all modules.

In response to comment on point 32 - It is gratifying to note that the Examiner was satisfied with the administrative arrangements prior and during the Progression and Awards Board meeting.

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

N/A