

UNIVERSITY OF GLASGOW

Academic Standards Committee – 22 March 2019

Periodic Subject Review: Responses to the Recommendations
Arising from the Review of Physics and Astronomy held on 15
February 2018

Mrs Ruth Cole, Clerk to the Review Panel

Conclusion

The Review Panel welcomed an open and constructive engagement with the School of Physics and Astronomy. While facing considerable pressures, the School maintains a strong collegial approach to providing a student experience which is stimulating and well supported.

The Review Panel, guided by the views of the External Subject Specialist confirmed that, at the time of the Review, programmes offered by the School of Physics and Astronomy were current and valid in light of developing knowledge in the discipline and of practice in its application.

Recommendations

The following recommendations have been made to support the School of Physics and Astronomy in its reflection and to enhance provision in relation to teaching, learning and assessment. The recommendations have been cross-referenced to the paragraphs in the text of the report to which they refer and are **ranked in order of priority**. The Review Panel notes that several of the Recommendations relate to areas already identified by the School for further development.

Recommendation 1

The Review Panel recommends that the School continue to review possible means of alleviating the administrative burden currently carried by academic staff. The Panel is not able to recommend resource investments per se, but would stress the need for this aspect of administrative support to be considered from a strategic perspective so as to create capacity for the learning and teaching developments identified elsewhere in this report. The Panel also notes that the College is currently conducting a comprehensive review of support services, and this may impact on the School's response to this recommendation. [Paragraph 4.3.2]

**For the attention of: The Head of School
For information: The Head of College, Dean of Learning and Teaching**

Response:

A comprehensive review of administrative support at University and College level is currently being undertaken. In particular, the College review of Professional Services is examining the provision of teaching administrative support and the School is fully engaged with that review

process. Following completion of the College review, the School will create a Working Party to consider and, where appropriate, implement its recommendations as quickly and smoothly as possible. In the meantime, the School has continued to make improvements in its administrative and technical support for teaching – with additional (initially fixed-term) technician and teaching administrative support posts appointed, or their fractional FTEs increased. We also continue to negotiate with the College on the issue of appointing a Teaching Administrator – recognising that we are currently the only School in the College without this position.

Recommendation 2

The Review Panel recommends that the School reflect on the various mechanisms by which good practice is currently disseminated and develop a more systematic means of sharing innovations and good practice to all staff within the School with a view to delivering a more consistent learning experience across all programmes. The School might also consider defining a set of minimum expectations for staff and students to ensure some consistency in delivery, whilst not restricting pedagogic freedom and innovation. In making this recommendation the Panel notes the proposal referred to in the SER for the introduction of a regular staff event for this purpose. [Paragraph 4.1.6]

**For the attention of: The Head of School
For information: Dean of Learning and Teaching**

Response:

The School Management Team has approved the creation of a Physics and Astronomy Educational Research (PAER) group, initially under the leadership of the School's Convenor of Learning and Teaching Professor Soler, to share ideas and expertise and promote scholarship. This group will encourage and support good practice in scholarship among all members of staff and students and will share innovations through regular meetings and by promoting and coordinating seminars in the area of Educational Research, open to all students and staff in Physics and Astronomy and across the university.

Recommendation 3

The Review Panel recommends that the School review the training provided to demonstrators in relation to:

their supporting undergraduate labs, with particular emphasis on promoting problem-solving techniques for the students both in completing the labs and in being assessed by interview. [Paragraph 4.1.9]

their assessment of the undergraduate labs, with particular emphasis on achieving consistency in the amount of feedback provided to students, the provision of feedback that will identify to students how they can improve their grades (including how to achieve the highest grades), and the delivery of adequate preparation for their conducting of interviews. The demonstrators' view (paragraph 4.3.6) was that statutory GTA training was of limited value in relation to labs, as the focus was more on classroom based teaching and the Panel notes that some work is already underway on these matters in the College of Science and Engineering. [Paragraph 4.2.9]

**For the attention of: The Head of School
For information: The Dean of Learning and Teaching
Ms Nathalie Sheridan, LEADS**

Response:

Laboratory demonstrations are carried out by postgraduate students, postdoctoral research staff and academic staff. For several years it has been challenging to find enough demonstrators for the laboratories and for supervisions. Going forward, our Laboratory Heads will meet annually to ensure that a consistent set of criteria are being used for training of all demonstrators. In particular, demonstrators that carry out marking through oral interviews will receive specific training on the conduct of these interviews to ensure that they are carried out consistently and fairly. Laboratory Heads will continue to monitor marking consistency amongst all demonstrators (something that is already being carried out).

Recommendation 4

The SER noted that the number of students undertaking either one semester or one session of study abroad in the last six sessions ranged from two to ten. In the SER it was explained that students were encouraged to undertake study abroad during their second year. The undergraduate students who met with the Review Panel noted that in order to go abroad in semester 1 of second year they were required to put themselves forward during their first semester at the University. At that point many of them had not felt ready to consider that possibility and the strong view was expressed that more interest would be generated if study abroad opportunities during third year were promoted. The Review Panel recommends that, with a view to the achieving the University's strategic target for at least 20% of students to experience a period of international mobility, the School review its approach to promoting study abroad in year 2 and investigate the feasibility of promoting opportunities for a year or a semester abroad during third year, as is the norm across the University. [Paragraph 4.1.16]

For the attention of: The Head of School

Response:

The 20% target for Glasgow students to study abroad is extremely challenging in the current context for Physics and Astronomy. Currently students are encouraged to study abroad in 2nd year so their grades do not adversely impact their final Honours classification, and to ensure that the accreditation by the Institute of Physics is not affected by different curricula studied by students. However, we are exploring possibilities with our international student adviser, Dr Eric Yao, to partner with a small number of institutions with similar academic standards, to create compatible exchange programmes. In this case, students would be able to study abroad more easily in the 3rd year of their studies. We are also consulting with our partner SUPA institutions to gain better insight on their approaches to international exchange and study abroad programmes. We will also monitor summer exchange programmes, in order to gain unofficial recognition for students performing summer research projects and academic training at foreign institutions, to enhance their international experience.

Recommendation 5

In the SER it was explained that opportunities for industrial placements were limited. In discussion with the Review Panel, the Head of School indicated that furthering links with industry had already been identified as an area for future development. The Panel noted that links with industry offered the potential for alleviating some of the burden on School staff in relation to the supervision of student projects. The students also referred to such links representing valuable work experience relevant to finding employment after graduation. There was currently some activity in this area on PGT programmes through the External Advisory Board. There was an aspiration to broaden the work of the Board to encompass undergraduate students and the Head of School expressed the view that there could be value in involving some College-level input as well. In view of the potential benefits to be gained both by staff and students in this area, the Review Panel recommends that the School move forward with this work as a priority. [Paragraph 4.1.17]

**For the attention of: The Head of School
For information: Dean of Learning and Teaching**

Response:

Currently, the only course that includes a Work Placement year in industry is the Chemical Physics MSci degree. All students in this degree spend a year with an industrial partner or research organisation during their 4th year of studies. We do not currently offer placement programmes in industry for other courses.

We will pursue further some of the industrial links currently available in the School, for example in the provision of projects for CDT or MSc students. Some industrial partners might also be amenable to offering projects for undergraduate students; however, these would have to be local, so students may continue with their studies at the university simultaneously.

Recommendation 6

The Review Panel recommends that the School reflect on the feedback received in relation to small group teaching to minimise inconsistency in what is currently delivered and to review the potential for varying the format so as to maximise meaningful attendance and response to the issues on which students wished to have more input. This might benefit from some external comparison with peer institutions that also value small group provision as well as with other Schools in the College that continue with the practice such as Mathematics and Statistics. [Paragraph 4.1.11]

For the attention of: The Head of School

Response:

The PSR report highlighted that students consider small group supervisions as important, but attendance by students is variable. Therefore, we will continue to offer small group supervisions and strive to enforce better attendance, but we will also consider the approaches adopted by cognate subjects and other institutions that have high assessment and feedback scores in the NSS, to explore best-practice and to study their approach for delivering effective feedback. Third year Physics supervisions have been made more consistent, by adopting set

weekly problems, while fourth year supervisions remain more open ended. We recognise that adopting a more consistent style of supervision should enhance their effectiveness.

Recommendation 7

The Review Panel learned about a recent change to the fourth year curriculum for integrated Masters students: in response to an identified weakness in the key skills of report writing, the fourth year practical project had been replaced with the Physics Literature Project, which offered students the opportunity to look in-depth at a chosen research topic. The undergraduate students acknowledged that there was value in this but they were concerned that the change meant that in fourth year they undertook no practical work and could be short of experimental practice for the crucial project in fifth year. The Panel recommends that the School reflect on the concerns being voiced by students regarding the lack of practical work in year 4 and consider how best to either reassure students that this should not put them at a disadvantage or incorporate some element of advanced practical work into the curriculum. [Paragraph 4.1.14]

For the attention of: The Head of School

Response:

Session 2018/19 is only the second year in which we have offered the Physics Literature Project for Physics 4M students, in order to enhance the scientific communication skills of our MSci students. Anecdotal evidence suggests that the quality of project reports improved for the first cohort of 5th year students that had performed a Literature Project in 4th year, without adversely affecting their practical skills. We are not aware of any other institution in the UK that offers research projects in both their final and penultimate years as part of their course structure. However, we will continue to monitor the attainment of our 4th and 5th year MSci students, to ensure that they are not placed at a disadvantage.

Recommendation 8

The Review Panel noted the on-going work in relation to the teaching of programming in the curriculum. The Panel noted that a Working Group on this issue had produced an interim report in May 2017, putting forward a wide range of proposals and areas for further investigations. The Review Panel recommends that the School continue this work to focus efforts on revising the provision of computing teaching in the curriculum. [Paragraph 4.1.15]

For the attention of: The Head of School

Response:

The changes to the provision of computing teaching are being rolled out this year (2018/19). Physics and Astronomy 1st year and 2nd year courses will include new Python modules, which offer specific training and problem-solving exercises using the Python computer language under the Jupyter framework. We are introducing computing exercises as part of assigned problems, in addition to the traditional pen and paper problems, which rely heavily on analytical mathematics. Next year (2019/20) Python exercises will be rolled out into 3rd year Physics and Astronomy, so that all students in Physics and Astronomy will have a consistent level of computing training as part of their graduate attributes.

Recommendation 9

The Review Panel was disturbed to hear from staff that some of the feedback given through course evaluation surveys was inappropriate and personally offensive, which undoubtedly was the very undesirable result of anonymity. The Panel recommends a review of the wording of the University's message inviting students to complete course evaluation surveys, to include a clear direction on the unacceptability of such comments. [Paragraph 5.1.3]

For the attention of: The Senate Office

Response: Senate Office

The wording of the email invite that is sent to students completing online EvaSys surveys to remind them not to leave offensive or inappropriate remarks in their surveys has been updated. We have also noted that any comments of this nature will be disregarded by staff.

Response: School

This action is being taken forward by the Senate Office. However, we have been seeking to reinforce it by promoting a culture of respect between staff and students through Head of School statements to all years in Moodle, and at induction events. We are, therefore, making very clear that professional conduct is expected amongst all students in all their interactions with staff, and with each other, at the university.

Recommendation 10

The undergraduate students told the Review Panel that they were unclear as to how the teaching of labs was evaluated. The students had responded to a survey being carried out by 3rd/4th year students but did not know what had been done with the information that had been gathered. At the meeting with staff it was noted that the lab survey carried out by students was not complete by the end of the labs and this meant that the feedback loop was not being closed with the cohort who had provided the responses. It was acknowledged that this would be straightforward to address and the Panel recommends that this is taken forward. [Paragraph 5.1.5]

For the attention of: The Head of School

Response:

The laboratory survey mentioned in the PSR report is part of a research project being carried out by Dr Peter Sneddon, and included as a 3rd year Group Project, to study the attitudes of students to laboratories, so the report resulting from the surveys is normally submitted as an undergraduate report for a 3rd year Group Project. However, in view of the interest that the findings might have, we will arrange that the feedback loop be closed and that the results of this survey be made available to undergraduate students via Moodle. The Head of School will also feature them in a future edition of the School newsletter.