

UNIVERSITY OF GLASGOW

Academic Standards Committee - Friday 24 May 2013

Periodic Subject Review: Responses to the Recommendations Arising from the Review of the School of Physics and Astronomy held on 13 and 14 February 2012

Mrs Ruth Cole, Clerk to the Review Panel

Conclusion

The School of Physics and Astronomy provides a supportive and progressive learning environment that is enriched by strength in research and by a broad engagement with the external environment. The School's success in recruitment and its ambitions for continued growth are bringing challenges which the School is embracing, and which now require careful utilisation of resources and continued support from the College.

Commendations

The Review Panel commends the School on the following, which are listed in order of appearance in this report:

Commendation 1

The Review Panel commends the School on its constructive engagement with the PSR process, the open and reflective approach adopted in the SER, the timely provision of all documentation required for the Review, the helpful preparation for the review visit particularly by the Convenor of Learning and Teaching, and the cooperation and the positive attitudes displayed by staff and students in discussions with the Panel during the review visit. *[para 1.9]*

Commendation 2

The Review Panel **commends** the School's measured consideration of how to amend its assessment practices, and encourages it to move forward with its proposals for increasing continuous assessment in courses at Honours and Masters level, and to consider other forms of assessment, with careful evaluation of the impact – on staff and on students – of the changes. *[para 3.3.10]*

Commendation 3

The Review Panel **commends** the School's proactive approach in keeping abreast of, and contributing to, developments in the external environment in relation to the Physics and Astronomy curriculum. *[para 3.4.1]*

Commendation 4

The Review Panel **commends** the School's emphasis on a broad range of activities associated with recruitment and general awareness raising, at a time when there are pressures on staff to engage in other activities that have tangible and more immediate financial results. *[para 3.5.1]*

Commendation 5

The Review Panel **commends** the School for the supportive community that it has created, through which students are supported in their learning and encouraged to pursue individual interests and opportunities. *[para 3.6.4]*

Commendation 6

The Review Panel **commends** the School on its provision of fortnightly small group supervisions from Level 2 onwards. *[para 3.7.3]*

Commendation 7

The Review Panel **commends** the School on its use of working parties with carefully defined remits to consider specific issues, such as the impact of increasing class sizes and the development of students' problem solving skills. *[para 5.3]*

Commendation 8

The Review Panel **commends** the on-going engagement of staff from the School with the Learning and Teaching Centre and the School's strong record of applications to the Learning and Teaching Development Fund. *[para 5.6]*

Recommendations

A number of recommendations have been made, many of which concern areas that the School had itself highlighted for further development prior to the review or in the SER.

The recommendations have been cross-referenced to the paragraphs in the text of the report to which they refer. They are listed in order of priority.

Response from School

The School of Physics and Astronomy welcomes the Report of the Periodic Subject Review panel and is pleased at the large number of commendations (C1-C8) the panel made regarding the work of the School. In particular we are pleased that the panel recognised our efforts to encourage innovation in teaching (C8) and our strong support for student learning (C5, C6). In addition the report highlights a number of general issues and makes fifteen specific recommendations (R1-R15). The majority of these recommendations are currently being addressed by the School of Physics and Astronomy. However some of the issues specifically required a response by other University bodies including Senate (R15), the College of Science & Engineering (R3, R12), and Estates & Buildings (R2).

Recommendation 1

The Panel **recommends** that the School carefully consider its requirements for enhancing the learning and teaching environment at the Observatory and maintains close contact with Estates and Buildings with a view to achieving as quickly as possible a successful refurbishment project similar to that achieved in the Kelvin Building Physics laboratories. *[para 3.8.17]*

For the attention of: **Head of School**
For information: **Estates and Buildings**

Response

The refurbishment of the Observatory remains the top priority for the School in enhancing the student learning environment. The numbers of students taking Astronomy labs have increased from last year's figures and this has made the completion of the Observatory refurbishment even more important. By Summer 2012 roughly 1/3rd of the refurbishment had been completed. The improvements made so far have been very beneficial and the flexibility of the design now allows the rooms to be used for a wider range of purposes, including research meetings. The completion will make it an excellent site for self-contained events, particularly out of teaching time. What remains to be done is the conversion of the east half of the building and the workshops. The School would like this work to be completed during Summer 2013. Access to the site will be available from April 2013 onwards.

Recommendation 2

The Panel **recommends** that Estates and Buildings address two pressing issues regarding accessibility for disabled students and staff of the School: access to the Common Room in the Kelvin Building (as recommended in the 2006 DPTLA); and access to the University Observatory. [para 3.8.18]

For the attention of: **Estates and Buildings**

For information: **Head of School**

Response: Estates and Buildings

University Observatory – Access improvement works to this building were completed during summer 2012, this made provision for a new ramped approach at the main entrance, automated entrance doors and provision of a new disabled toilet.

Kelvin Building – Access improvement works required to this building have been debated in the past however they would require significant changes to the building. This can be reviewed in the future.

Response – Head of School

As part of the first phase of the Observatory refurbishment a wheelchair ramp has been installed providing access to the building for disabled users and a new disabled toilet facility has been installed.

The passenger lift in the Kelvin Building is small and antiquated with manually operated double doors. Wheelchair users are unable to operate the lift on their own and require assistance. The floor area is insufficient for a wheelchair user to turn round and the lift does not meet modern standards for disabled access. Even so, with assistance, wheelchair users still can access the lecture theatres and teaching labs on levels 2, 3 and 4 of the Kelvin Building and the School office on level 5. However, the common room and all rooms on level 6 are completely inaccessible as these can only be reached by narrow stairs.

Several schemes have been proposed in recent years to replace the main passenger lift with one which meets modern standards for disabled access in order to provide unassisted access to the main teaching areas and for a separate and additional one-floor lift to provide direct access to the common room. However, these schemes have not proceeded due to very considerable costs involved.

The School of Physics and Astronomy strongly supports the principles of improving access to the public areas of the Kelvin Building and to the common room in particular. It strongly endorses the recommendation of the PSR panel that Estates and Buildings address this issue.

Recommendation 3

In recognition of the key role played by technicians in the successful delivery of laboratory-based teaching, the Panel **recommends** that the College consider approving the recruitment of a technician to replace the technician lost in 2010. *[para 3.8.1]*

For the attention of: **Head of College**

For information: **Head of School**

Response:

The College of Science and Engineering budget for 2013-14 has a vacant technician post which addresses recommendation 3. This post is budgeted through until July 2016 at which point it can be reassessed in light of any changes to student load.

Recommendation 4

The Panel **recommends** that the School continue to engage in dialogue with the College to consider the case for the introduction of dedicated teaching administration. *[para 3.8.5]*

For the attention of: **Head of School**

For information: **Head of College**

Response:

The School notes that it is out of step with many other Schools in the University which have a dedicated teaching administrator. There are many tasks which are currently carried out by academic staff which could be more efficiently carried out by a teaching administrator, releasing academic time for research and scholarship. These tasks include timetabling of classes, room bookings, recording and following up student absences, monitoring tier 4 student attendance and engagement, processing course assignments and results, inputting and updating course information in PIP, organising and taking the minutes of exam boards, organising and taking the minutes of Teaching Committee meetings. At present these tasks are split between many different people including Classheads, Labheads, Advisors of Studies, the School Examination Officers, the School Convenor of Learning and Teaching, University Teachers, PGR and PGT Convenors, Head of School Administration and various secretarial staff.

The School will therefore continue to engage in dialogue with the College on the issue of dedicated teaching administration, although current constraints on the College budget mean that the appointment of an additional teaching administrator for 2013-14 appears unlikely. Consequently the School will continue to explore ways of improving its provision of teaching support with its existing complement of administrative staff, while seeking to maintain our Research Group structure and the highly effective and efficient secretarial support that underpins it.

Recommendation 5

The Panel **recommends** that the School implement a transparent scheme for the allocation of Demonstrators' duties, and a system of providing formal feedback on their performance, the latter as previously recommended in the 2006 DPTLA review. [*para 3.8.12*]

For the attention of: **Head of School**

Response:

There are a number of reasons why the current system of GTA demonstrator allocation is not fully transparent. Firstly lab demonstrating is not an isolated activity; it is a small part of the full range of teaching carried out by GTAs which generally will also include lectures, project work, tutorials, workshops and small group supervisions. Some of these activities are best carried out by more experienced GTAs. Some activities have specific subject skills which need to be matched. Other activities are open to all GTAs. The teaching load of GTAs is often restricted by staff availability as many carry out research abroad. The teaching duties of GTAs need to be limited so as not to adversely impact on their research work. As a policy we do not require Ph.D. students to demonstrate in the first semester of their 1st year or in their 4th year when they are heavily involved in training courses or in writing up their Ph.D. project respectively. However, we do use volunteers from these cohorts. In the past teaching duties have been allocated at various times throughout the year, and the nature of the discipline means there are a lot of last minute changes required to cope with research commitments and other work which arises at short notice.

To improve matters the Convenor of Learning and Teaching will revise the teaching allocation process. He will survey all teaching staff, including GTAs on their availability and preferences in May each year. He will explain the boundary conditions and priorities clearly to staff. He will then make the initial allocation of all the teaching duties for the following session at the same time and much earlier than in previous years. Clearly adjustments will still have to be made later on to cope with changes in the expected numbers of students in each class and to allocate duties to new staff. However, these changes should provide more clarity and transparency and give all staff greater notice of what is expected of them.

The nature of demonstrating duties varies markedly across our different classes, as does the organisation of the specific laboratories. The School feels it would be overly rigid and cumbersome to introduce a formal demonstrator evaluation system. Instead labheads have been asked to ensure that all demonstrators receive formative oral feedback on their work from the labhead, deputy or a delegated member of academic staff with whom they are working.

In addition the School has put in place a forum for GTAs to discuss issues of concern with academic staff and will invite a GTA representative to attend Academic Staff Meetings and Teaching Committee Meetings where they can raise relevant issues.

Recommendation 6

In the face of anticipated continued growth in the number of PGT students - with differing undergraduate backgrounds - the Panel **recommends** that the School consider how best to put in place the necessary diagnostic measures to identify whether there are significant gaps in incoming students' knowledge and skills, in order that these should be managed in an ordered way, whether by self-directed study or by additional staff support. [*para 3.4.9*]

For the attention of: **Head of School**

Response:

Dr N. Labrosse, our PGT coordinator routinely interviews PGT students on arrival to recommend a suitable curriculum for them. He uses this opportunity to identify any gaps in their skills or knowledge and to formulate a plan to address any deficiencies. Where there are gaps which are relatively small and common to several students these can be addressed in the context of the Phys 5015 Research Skills course which all PGT students take. In cases where knowledge of particular topics is weak, he will recommend the students use their available elective credits to choose specific courses that address these gaps. For any gaps which cannot be addressed in this way he will recommend an appropriate programme of self-study.

Recommendation 7

The Panel **recommends** that work is taken forward on the suggested production of an assessment guide/calendar, to be incorporated into course documentation, which would show students the various forms of feedback on assessment that they can expect to receive and the schedule for receiving such feedback. [*para 3.3.17*]

For the attention of: **Head of School**

Response:

The 2012 NSS figures are now available and show a strong overall improvement in the feedback category. The response to Q7 has increased dramatically from 61% to 86% and is now above the institutional benchmark. Q9 has increased by 5% to 82% and is also now above the institutional benchmark, although Q8, at 61%, remains below the benchmark.

The School organised a student focus group in November 2012 to discuss these results and the NSS survey was discussed further at the School Teaching Committee meeting in November 2012. Classheads have subsequently been asked to take steps to provide more detailed feedback to students and to make sure students' expectations about the feedback that will be provided are realistic.

The report recommended the creation of a feedback guide/calendar. This was also discussed at the School Teaching Committee meeting in November 2012 and Classheads have been asked to make clear to their classes the timescale on which they can expect feedback on submitted work.

The question of providing feedback on the outcomes of degree examination results was discussed at the University Learning and Teaching Away Day on 27th November 2012. The Vice Principal for Learning and Teaching, Prof. F. Coton, stated that there should be a University-wide policy on this and it would be the subject of discussion at future University Learning and Teaching Committee Meetings.

Recommendation 8

The Panel **recommends** that the School produces, and publicises to its staff, an overview of the various funds available to support the enhancement of teaching, covering School, College, University and external sources. [*para 5.6*]

For the attention of: **Head of School**

Response:

The Convenor of Learning and Teaching regularly passes on opportunities and calls for proposals to enhance learning and teaching to staff. In addition the School SMT is always willing to receive and consider specific requests for additional funding for worthwhile projects. To assist this process a list of sources of funding for teaching initiatives will be drawn up shortly and distributed to staff.

Recommendation 9

The Review Panel **recommends** that the School investigate the feasibility of incorporating some additional basic programming into the undergraduate curriculum, in order to prepare students better with computing skills required throughout their programmes of study. *[para 3.4.10]*

For the attention of: **Head of School**

Response:

This issue was considered by the School Teaching Committee at its first meeting in session 2012/13. The Teaching Committee set up a Working Group in November 2012 to investigate this issue in detail and make recommendations for the development of student programming skills. This Working Group has not yet reported.

Recommendation 10

The Panel **recommends** that the School consider how best University Teachers can be supported in their career development and given time and opportunity to develop the scholarship that is a requirement for promotion. *[para 3.8.7]*

For the attention of: **Head of School**

Response:

This issue has already been touched upon in our comment on Physics Education and Communication in Schools, where we stated that the School will generally support all reasonable initiatives by University Teachers to innovate teaching methods and explore new techniques which can provide the scholarship necessary for publication. The School also provides encouragement for University Teachers to engage with the wider scientific community and to raise their profile through work with colleagues in other Schools, Colleges and Universities, learned societies, the Higher Education Authority, SQA and other similar bodies. However, there remain a number of very strong structural impediments to career progression for University Teachers. By their job description they are expected to undertake a much larger quantity of teaching and administration than other academic staff. This leaves them with very little time for research or scholarship. The resources available for research and scholarship, particularly in Physics Education, are extremely limited. The University Learning and Teaching Development Fund is contracting and its focus is shifting away from innovation to sustainable implementation, which offers less opportunity for scholarship. The number of publications which an excellent University teacher is able to produce is very low in comparison to what can be achieved in more traditional physics research areas. There is no obvious source of funds to support PhD students in Physics Education.

The requirements for advancement, particularly to Grade 9, require the achievement of notable esteem, a substantial publication record, the generation of substantial external grant income

and the successful supervision of PGR students. While such requirements are roughly comparable with the requirements for advancement of staff on a Research and Teaching path, they are much harder for a University Teacher to achieve, given the factors listed above.

The School feels that this is not an issue it can address on its own and asks the University to monitor and review the promotion rates of University Teachers across the whole University to check whether the advancement criteria are set at a level which is achievable and are appropriate for this class of staff.

Recommendation 11

While sympathetic to the limitations placed on the School by accreditation requirements, the Panel **recommends** that the School investigate options for further enhancing and promoting opportunities for study abroad, cognisant of the fact that study abroad is not intended to mirror the learning available at Glasgow, and that concerns about issues such as requirements for entry to Honours should be solvable. *[para 3.4.16]*

For the attention of: **Head of School**

Response:

The School of Physics and Astronomy is taking a number of initiatives to enhance its international profile. It is bringing forward plans to introduce a new PGT course in Nuclear Technology in session 2013/14. This is likely to be attractive to international students. In 2012/13 the School enrolled its first South American student through the Brazilian Science without Borders student exchange initiative, and also welcomed the first group of students from Xian University in China who are undertaking an Honours year in Glasgow. To promote external study our international student officer, Dr. E. Yao, will continue to publicise opportunities and encourage Glasgow students to take a year out to study abroad.

Recommendation 12

The Panel **recommends** that the College consider ways of promoting cross-College interaction particularly between early career and other new-to-Glasgow staff, one suggestion for this being a cross-College poster event. *[para 3.8.13]*

For the attention of: **Head of College**

For information: **Head of School**

Response:

The School of Physics and Astronomy supports the idea of greater cross-College interactions and the Convenor of Learning and Teaching raised the issue with the College Dean of Learning and Teaching at the University Learning and Teaching Away Day on 27th November 2012. However, due to its nature, any event or programme of events needs to be organised at College level. The School notes that since the PSR took place several College initiatives have already been introduced, including a College Crucible, paper writing workshop, industry day and informal College lunches. Most of these events have targeted ECRs and/or new-to-Glasgow staff.

Recommendation 13

In view of comments regarding questionnaire fatigue, the Panel **recommends** that the School consider a range of means of eliciting meaningful feedback from students as recommended in the University's Code of Practice on Obtaining and Responding to Feedback from Students - http://www.gla.ac.uk/media/media_107529_en.pdf (e.g. using focus groups or mid-course questionnaires). *[para 5.5]*

For the attention of: **Head of School**

Response:

The University regards student feedback as very important and also recommends that surveys be carried out timeously to allow feedback to be acted on. In 2012/13 the School of Physics and Astronomy reinstated its systematic programme of lecture course questionnaires, which had suffered from lack of staff effort in the previous year. Additional secretarial effort was allocated to produce and distribute the large number of forms required. The College Dean of Learning and Teaching instituted a review of processes in each school to define the best practice in this area. This issue is also being closely looked at by the University Learning and Teaching Committee which wishes to introduce a uniform approach across all colleges, subjects and schools. It is currently piloting in four schools a new EVASYS questionnaire system which can be answered either electronically or in hardcopy format. The University Learning and Teaching Committee recognises that current questionnaires are often too long and often ask irrelevant questions. A standard shorter set of University questions is therefore being used with the facility for Schools to include a couple of relevant subject-specific questions. It is likely that this new scheme will be rolled out across the University in 2013/14 and will make the process more relevant to students.

In addition to making improvements to the standard questionnaire process, the School of Physics and Astronomy uses the Staff-Student Liaison Committee system to provide feedback to staff. In 2012/13 a large number of issues raised by students at the staff-student liaison committee meetings were taken up as items for consideration at the School Teaching Committee, providing a direct input into decision making.

Each of our classes uses the Moodle website platform for course information and discussion. The discussion fora on Moodle allow a means of raising questions about any issue affecting particular classes. Students are encouraged to make full use of this facility.

Further feedback is made to staff through small group discussion sessions and by students directly with class and labheads. All our classheads demonstrate in the labs which are assigned to their classes to increase the opportunities for interaction and feedback.

The School has also made use of the specific suggestions for focus groups and mid-course questionnaires suggested by the panel.

In October, Dr Sneddon, the new Physics 1 Classhead ran a short mid-course questionnaire of 1st year lecture topics. This was useful to identify issues affecting the whole class and to identify areas for specific improvement. To avoid questionnaire fatigue among students these topics were excluded from the general course monitoring questionnaire programme.

In November 2012 the school held a focus group discussion with volunteers from honours and PGT courses to discuss issues arising from the 2012 National Student Survey. In practice this discussion extended to other issues, including MyCampus, and was extremely useful. A focus

group of classheads and advisors of studies was held shortly afterwards and exchanged information about MyCampus and other issues between staff. The school appreciates that this form of meeting can be a very effective means of raising concerns and sharing ideas.

Recommendation 14

The Panel **recommends** that the School carefully check all course and programme documentation to ensure that the content is both consistent with the Code of Assessment and reflects School practice. [*para 3.3.3*]

For the attention of: **Head of School**

Response:

The report recommendations were distributed to all academic staff and classheads were asked to review course documentation before the start of session 2012/13 in order to remedy the specific points raised by the panel. At its January 2013 meeting the School Teaching Committee adopted a new set of guidelines for Assessment and Examinations to ensure consistency of approach across all degree programmes and courses.

Recommendation 15

The Panel **recommends** that Senate Office produce guidance on how penalties for the late submission of coursework should operate where several sub-components contribute to an overall coursework mark. [*para 3.3.4*]

For the attention of: **Senate Office**

Response: School

The School agrees with the report's conclusions that this issue affects many different subject areas and it is appropriate for Senate to recommend a solution to this matter.

Response: Senate Office

This issue was considered by the Academic Regulations Sub-Committee, and the following additional guidance has been included in the Guide to the Code of Assessment: 'Sub-components of coursework are subject to penalties for late submission in the same manner as full coursework components – essentially a two secondary band deduction per day with a cut-off at five days after which the submission will receive a grade H. In cases where sub-components are marked in percentages, an equivalent reduction of 10% per day should be applied, with a cut-off at five days following which the grade awarded will be zero.'

Additional comments from the School

Commendation 2: *Piloting Continuous Assessment in Honours Courses:*

The report encouraged the School to move forward with the introduction of continuous assessment to some Honours Physics courses.

Proposals to do this were approved at the meeting of the College Learning and Teaching Committee on 22nd May 2012, following which elements of summative continuous assessment were introduced to a further three Honours Physics Courses in session 2012/13: Phys 4010

Magnetism and Superconductivity, Phys 4013 Medical Imaging and Phys 4017 Numerical Methods. The existing Phys 4034 Physics Education and Communication honours physics course already has 100% continuous assessment and Phys 5023 Energy and the Environment contains a summative course assignment as part of its assessment.

Commendation 8: Innovation in Learning and Teaching

While commending the School for the on-going engagement of staff with the University Learning and Teaching Centre, the panel recommended that the School produces an overview of the various funds available to support the enhancement of teaching, covering School, College, University and external sources.

The Convenor of Learning and Teaching regularly passes on opportunities and calls for proposals to enhance learning and teaching to staff. In addition the School SMT is always willing to receive and consider specific requests for additional funding for worthwhile projects. To assist this process a list of sources of funding for teaching initiatives will be drawn up shortly and distributed to staff.

Plagiarism in Continuous Assessment: P3.3.6

The report noted that with the piloting of continuous assessment in several new honours courses in 2012/13 the issue of plagiarism would need to be addressed carefully.

Class heads for these new courses have contacted students to emphasise the importance of this issue