

The Science Curriculum: Questions and Answers

As you know, for some time the Faculty of Science has been reviewing its curriculum in detail, and thinking carefully about how it should be developed and enhanced. Here, I will attempt to answer some questions about the direction that has been agreed upon within the Faculty. Most of the proposals need formal approval through the University's committee structure over the next few months before they can be implemented. I will update the answers below as and when additional information becomes available, and in subsequent updates will also try to answer any further questions put to the Faculty.

What are the proposed new developments?

The five existing named undergraduate degrees that are the Faculty's responsibility (i.e. BSc (Hons) degrees in Geosciences, Life Sciences, Molecular Science, Natural Sciences and Physical Science) will be replaced by a single *new* BSc (Hons) Natural Sciences degree that will have a much broader remit than the current Natural Sciences degree. At present, there are no plans to replace the BSc (Hons) Environmental Science degree.

At the same time, all our SXR (i.e. residential school) courses with the exception of SXR103 will be withdrawn – those at Level 2 after 2011 and those at Level 3 after 2012. From autumn 2010, a new 10 point online course S155 *Scientific Investigations* will be available alongside SXR103 as an option in the new Natural Sciences degree. A new 30 point course, S288 *Level 2 Practical Science* (working title), will be introduced in 2012. From 2011, SX*390 *The Science Project Course* will be able to accommodate independent practical work (while still allowing students to submit entirely literature-based project reports, as at present).

Why change the degree structure in this way?

The take-up of our current named degrees has been quite low, with considerably fewer than 10% of the students who start 30 or 60 point Level 1 courses in Science graduating with one of these degrees. The proposed new Natural Sciences degree will give more students opportunities to graduate with a named degree in Science, specialising in different areas of science if they wish and benefitting from improved practical science teaching.

Why are SXR courses being withdrawn?

Many students who are primarily taking Science courses have been opting for the BSc (Hons) Open Degree rather than the specialist science degrees in science. One of the reasons for this is the expense and inconvenience of having to take SXR courses (as many as four in the case of the Life Sciences degree).

How will practical work be delivered in the absence of SXR courses?

We can now take advantage of (i) rapidly developing immersive technologies to deliver practical science experience through the new courses S155 and S288, and (ii) opportunities for laboratory and field work for shorter periods than week-long residential schools. If these technologies and opportunities had been available when the Open University was established over 40 years ago, it's likely that the current residential school model would never have been devised.

Won't the loss of SXR courses reduce the amount of practical work in the degree?

Quite the reverse. The new Natural Sciences degree will require students to take SXR103 or S155 (10 points) *plus* S288 (30 points). Thus, a minimum of 40 points will be devoted *explicitly* to practical work. Students can if they wish include *both* SXR103 and S155 (and, indeed, would derive considerable benefit from doing so). Students will shortly also be able to include independent practical work within any of the SX*390 suite of 30 point courses.

Does this mean that most practical work will be simulated?

Although S155 will be an online course, it will include 'hands on' practical work options. S288 will include a total of more than 30 points worth of material. While it will be possible to follow entirely 'virtual' routes through this course (thereby making it accessible to a wider group of students than the SXR courses that it will replace), it will also include routes that involve 'hands on' laboratory work and/or 'hands on' field work for those willing and able to follow them. It is also worth noting that a considerable amount of practical work is already included in many of our non-SXR courses and there are no plans for this to diminish.

Will S155 be able to count towards the current science degrees instead of SXR103?

No - the current degrees will retain their existing residential school course requirements.

What about students who are part way through one of the current degrees?

While we hope to introduce the new BSc (Hons) Natural Sciences degree later in 2010 (subject to University approval), it will be possible to claim the current named degrees until at least the end of 2013. For most current students, the deciding factor on whether they claim one of the existing degrees or the new Natural Sciences degree may be whether they are able to take the relevant Level 3 SXR courses by 2012 at the latest. We anticipate that many current students will opt for the new degree anyway.

Will any of the credits students have already gained be wasted because of these changes?

The new Natural Sciences degree will be framed in such a way that all the Science courses that students have already passed can be counted towards it (subject to the normal rules about classification etc.).

Why not wait until current students have graduated before introducing these changes?

In contrast to the situation in conventional universities, the Open University does not recruit discrete cohorts of students that progress through their degrees together and in a relatively short time. So, it would be impossible to wait until all current students had graduated. Nevertheless, we are introducing these changes in ways designed to minimise the disruption to the majority of students.

Will there be fewer course options?

While some courses will end over the next few years, others will come on stream. There won't be a significant change in the number or variety of courses available. The new Natural Sciences degree (plus the ongoing Environmental Science degree) will continue to enable students to specialise in a range of subjects including:

- astronomy and planetary sciences
- biology
- chemistry
- environmental science
- geology
- health sciences
- physics

When will these changes happen?

I hope that the new Natural Sciences degree will be available later this year. However, the current range of science degrees will continue to be available until at least the end of 2013. S155 will be offered from autumn 2010. The Level 2 SXR courses will be withdrawn after 2011 and those at Level 3 after 2012. We plan for S288 to be first presented in February 2012 and for SX*390 to allow the inclusion of independent practical work from February 2011.

What recognition will the new Natural Sciences degree receive?

The new Natural Sciences degree will be fully compliant with the Bologna Accord (an agreement designed to achieve uniformity in university qualifications across Europe) and thus recognised worldwide. As well as being a 'first degree' in its own right, the new degree will qualify students to proceed to more specialist Masters degrees within The Open University or elsewhere and hence to Doctoral level study in appropriate cases.

How will employers know in which areas of science students have specialised?

A student's precise study path will be reflected in their degree transcript, which will also emphasise the skills they have acquired *en route*. Students can also provide potential employers with detailed course descriptions.

I hope you have found this useful in bringing you up to date with the latest news and thinking on the OU's science curriculum. If you have additional questions to those listed above, please email science-curriculum@open.ac.uk and we will answer them in the next update.

Phil Potts

Dean of Science

January 2010