Informatics Taught Programme Review 2015
Executive Summary

The Taught Programme Review (TPR) of all of our undergraduate and postgraduate teaching is conducted every five years and forms an essential part of the School’s work to maintain the standard and quality of our teaching. The next review will be conducted on 25th and 26th February 2015 with a two-day visit by a panel of internal and external reviewers. The panel includes staff members from elsewhere in the University and beyond, as well as a student representative. Based on a portfolio of documentation submitted by the School early in January, the review team will discuss all aspects of the School’s teaching with a broad range of Informatics staff and students, and produce a report with a series of “commendations” and “recommendations”. The School is obliged to respond to these recommendations in writing and take action as we judge necessary.

The core of our submission to the TPR is an Analytical Report of around 40 pages that describes key aspects of teaching in Informatics and also addresses a specific list of remit items identified by the University, the College, Informatics teaching staff, and our students.

The rest of this paper gives a brief overview of the range of the School’s teaching covered by the review, and the opening pages of the report. These give an outline of the report content, details of the specific remit items, a summary of consultation carried out prior to the TPR, and information on actions taken following the previous TPR. The full Analytical Report is available online to members of Informatics teaching staff at http://www.inf.ed.ac.uk/teaching/tpr-analytical and to student reps on request.

Overview of Teaching Activities in Informatics

The School of Informatics is the largest centre of computing research in the UK with over 100 academic staff and a consistently outstanding record in both research and teaching. We currently teach 613 undergraduate and 164 taught postgraduate students on programmes in Computer Science, Artificial Intelligence, Cognitive Science, Software Engineering, Informatics, and Design Informatics. We offer a broad range of degree programmes that involve combinations of these areas with outside subjects, and allow a great deal of flexibility for students to transfer across programmes. Informatics students work together across programmes as cohorts “by year”, grouping horizontally rather than vertically; reflected, for example, in the students’ own organisation of Facebook groups for each graduation year.

We have established in the School a comprehensive teaching management structure, supported by a highly professionalised teaching administration unit (the Informatics Teaching Organisation — ITO), that delivers a learning experience characterised by high academic standards, a breadth of effective student support mechanisms, and a research-oriented outlook to teaching. Our portfolio of more than 100 taught courses across a very broad range of topics offers students an unparalleled level of student choice. Our strengths in research enable our students to be taught by research leaders, and to benefit from an intellectually highly stimulating academic environment. We are one of the most ethnically and culturally diverse schools in the University of Edinburgh — our students come from over 70 countries, and our academic staff come from 20 nations. The School is one of only two UK departments in the subject area to hold a Silver Athena SWAN award, recognizing our commitment to advancing women's careers in our discipline. Our exceptional survey scores of 94% in the area of equality and diversity attests to our broader commitment to equality and diversity. We regularly receive accolades and prizes for our teaching excellence, and have a strong 90% overall satisfaction ratings at the National Student Survey (NSS).

Michael Rovatsos and Ian Stark — February 2015
Taught Programme Review

ANALYTICAL REPORT

School of Informatics
Academic Year 2014-15

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Report Outline

This is the comprehensive analytical report prepared for the School of Informatics Teaching Programme Review (TPR) held during the 2014/15 academic year. The narrative report has been prepared in conjunction with extensive supporting material, which is available on the review wiki and should be read alongside the main report.

TPR wiki: http://www.inf.ed.ac.uk/teaching/tpr1415

The School of Informatics is a large academic department, the largest of its kind in the UK, with a long-standing and internationally excellent record in teaching and research. The School has a broad vision of Informatics that brings together Computer Science, Artificial Intelligence and Cognitive Science in the study of natural and engineered computational systems. This breadth is expressed in the structure of our degree programmes and the range of our research institutes.

The School offers taught undergraduate BSc/BEng degrees and postgraduate MSc programmes. These follow the standard Scottish framework, which is traditionally longer and broader than elsewhere in the UK. The undergraduate Honours degree is a four-year programme, with a five-year undergraduate masters MInf and a one-year postgraduate MSc. The early years of the undergraduate degree encourage diverse study: one third of the first-year programme is a free choice of courses outside Informatics, and there is access to courses in other departments throughout later years. We offer a number of joint honours degrees and there are a range of opportunities for students to change their programme of study, particularly in the early years, as well as suitable early exit qualifications for those not completing the full degree.

The main text of this report follows the standard university model, structured to match the review remit:

Section 1 on the student experience describes key features of the school’s approach to learning and teaching: our curriculum, its structure, design and review; its delivery through a range of mechanisms and media, and how these are experienced by students; resources, facilities and practical aspects of the learning environment; personal tutoring and wider student support; staff development; and how all these aspects are managed and reviewed over time.

Section 2 on quality and standards reports on quality management and the effectiveness of this learning and teaching environment: academic standards, accreditation and external oversight; student representation and engagement with quality enhancement; assessment, progression and the evaluation of student achievement.

Section 3 on enhancement and sharing of good practice reviews our progress in improving the student experience: our focus on better feedback, developing a streamlined flexible curriculum, and effective communication between staff and the student community. We identify key examples of successful good practice for sharing beyond the review.

Within this structure we highlight discussion of certain subject-specific remit items, listed in full on the next page. These have been selected by the University, College, and School students and staff as key areas for review. Where most of the report is a straightforward analysis of current learning and teaching in Informatics, for these remit items we present a more wide-ranging discussion of challenges and possible strategies for future development.
Specific Remit Items

School remit items

1. Review of the School’s teaching of programming to undergraduates, looking in particular at how to raise the overall standard at graduation across a cohort with a highly diverse experience on entry.

   Section 1.5 discusses opportunities to learn programming during our degrees, observed performance, surveys of students, alumni and employers, and plans for further action.

2. Review of the significant growth in first and second year class sizes, and its impact on the student experience; both from the School’s own intake and its unlimited-entry policy for outside students taking Informatics courses.

   Section 1.3 describes the scale of this growth, its effect on students, and some of the practical challenges arising. We outline possible responses to this, some of the trade-offs between outcomes, and challenges in resourcing.

Student remit items

3. Review of the School’s lab and tutorial provision, with a focus on class sizes, number of contact hours and quality of teaching support staff used for tutoring and demonstrating.

   Section 1.4 includes a reflection on lab and tutorial provision, the practical impact of a larger student cohort, and how to manage issues arising from this. We review recruitment and training of teaching support staff, how this is changing, and possible further actions.

4. Review of the desirability of moving to a general end of semester rather than end of year examination schedule for honours courses.

   Section 2.4 on assessment and achievement addresses examination timing: practical considerations for course delivery; the use of in-course and final assessment; and pedagogical aspects such as time for consolidation between learning and assessment and the impact of the spacing effect on long-term retention.

College remit item

5. Review of the effectiveness of the School’s approach to assessment, including volume and type of assessments.

   Section 2.4 on assessment and achievement reports on the extensive discussion of this within the School: balancing in-course and final assessment; student and staff workload; and the distinct roles of formative and summative assessment. A significant challenge here is the expectation, widely expressed by students, that every piece of work should contribute to final course grade in proportion to the effort spent on it.

University remit item

6. Community

   Section 1.4 explores the scope of community-building activities and events within Informatics, in support of student learning and engaging both staff and students. These range from student-staff engagement events and cross-year peer-assistance learning teams through Hackathons to student societies and meetup events with local technology firms.
Dissemination and consultation

Consultation with staff and students has taken place over the past twelve months through reports to several Teaching Committee and General Staff meetings, discussions of individual items at our regular Staff-Student Representative meetings, and elicitation of student views through two Informatics Conversations events and a School Council meeting open to all Informatics students. The School Council meeting, in particular, was specifically dedicated to the preparation of the review with its main topic being the definition of student remit items. Also, an online form was provided where students could enter issues they would like to see highlighted in the review.

Dissemination of the School’s submission and the overall review process will be through a summary report sent out by email to staff and students, and through presentations to Teaching Committee and our Staff-Student Representative meetings before and after the review. Individuals will be given access to the full report on request.

Completion of recommendations from previous review

The previous review, in 2008, made a number of recommendations; we summarise here our actions in response to these:

- We are reviving our local schools outreach activities to increase our domestic undergraduate intake.
- Training and mentoring of Directors of Studies (now Personal Tutors), Teaching Support Staff, student representatives, and new lecturing staff has been significantly improved.
- The teaching management structure has been overhauled, and we have taken significant steps toward engaging more academic staff with teaching matters.
- We have simplified our degree programme structures in Years 3-5, and the number of different degree programmes has been reduced by 30%.
- Sustainability of the MInf programme is no longer an issue, with a significant growth on entry as well an increase in student choosing to transfer in from BSc/BEng.
- We have reinstated our Industrial Advisory Board to provide guidance regarding employability and graduate attributes.
- We have worked towards introducing more 20-point courses, but with only limited success.
- Teaching performance has not been made a required formal element of staff appraisal. However we are pleased to note that our most recent professorial promotions have all involved a significant element of excellence in teaching.
- We launched a major “Improving Informatics Feedback” initiative with real effect, visible in feedback turnaround times and a step-change 18% increase in our NSS scores in the feedback category.
- Publication and dissemination practices regarding course information, student handbooks, survey results, and guidance on feedback have been greatly improved.
- We have introduced more group activities in our MSc programmes, have improved the guidance on programming skills provided to prospective MSc students, and have introduced pre-sessional programming course for those with less programming experience.

The main text of the report comments in more detail on each of these in the appropriate section.