**UNIVERSITY OF ABERDEEN**

**COMPUTING SCIENCE**

**INTERNAL TEACHING REVIEW**

**SUMMARY**

The summary is extracted from the full report on the internal teaching review of Computing Science carried out in November 2007. It includes the Panel’s **overall impressions** of the provision, a record of the Panel’s **commendations** and **recommendations**, and a list of the programmes which were revalidated.

**1 Overall impressions**

Computing Science became a member discipline of the then School of Engineering and Physical Sciences in the College of Physical Sciences in 2003. In 2007, the School was re-structured to form the School of Engineering and the School of Natural and Computing Sciences.

The Panel **commended** Computing Science for its strong commitment to and engagement with the internal teaching review process. This was evidenced by the high quality of the submission and by the discipline’s positive approach to the review visit itself.

The Panel **commended** academic staff for their commitment to offering interesting, well-structured degrees which prepared students either for employment or for further study by equipping them with both technical and transferable skills. Academic staff were also **commended** for their willingness to identify and give extra support to students experiencing academic difficulties. Extra tutorial and other help sessions were provided. A **highly commendable** mentoring scheme (CS3021 Communication of Computing Science) was being piloted in which honours students mentored first year students. The scheme had been triggered by concerns over poor rates of level 1 retention and, while it was too early to judge the outcome of the initiative, students – both mentors and those mentored – were enthusiastic about its benefits. Student feedback confirmed that teaching provision was coherent and well-paced. Students valued the fact that staff are readily available and responsive to students’ concerns, and that support was in place, both within and outside Computing Science, for individuals who experienced personal problems.

Computing Science was **commended** for its positive approach to teaching undergraduate and non-specialist taught masters students about disabilities and cultural differences. While this had a clear link to the development of their technical skills, it was also a useful enhancement of transferable skills.

The Panel **commended** Computing Science’s intention to adopt a suggestion from current students that all PhD students who have recently completed their degrees should be invited to give a seminar to the discipline.

The Panel **commended** both the decision to introduce more team teaching and the introduction of a voluntary scheme for peer observation of teaching.

Technical and administrative staff also clearly understood their contribution to teaching and student support. Staffing difficulties caused both by absence through illness and staff changes had hampered their ability to provide the levels of support that should have been in place. The Panel **recommended** that Computing Science, in consultation with the School of Natural and Computing Sciences and the Directorate of Information Technology, put in place measures as a matter of priority to prevent a repetition.

There was evidence of very good practice within the discipline. For example, in addition to support for students experiencing academic difficulties mentioned above, the Panel **commended** Computing Science for its efforts to identify and support overseas students whose poor English language skills had a negative effect on their academic studies. They **recommended** that the discipline seek further assistance in consultation with the School of Natural and Computing Science and the Language Centre.

Computing Sciences was **commended** for its decision to include student representation on its Teaching and Learning Committees and it was **recommended** that serious consideration be given to including students in the membership of the External Liaison Committees and the Recruitment and Publicity Committee. The Panel **commended** Computing Science for the use of discipline questionnaires to supplement student feedback obtained via the SCEF exercise.

It was **commendable** that Computing Science was actively seeking to counteract the effects of a national and international drop in Computing Science recruitment by the introduction of a new BSc degree in Artificial Intelligence. They had recently signed articulation agreements for 2+2 undergraduate degrees with two Chinese universities and had plans to publish multilingual versions of their recruitment web pages. Computing Science was **commended** for its decision to formalise its working relationship with the Careers Service. As a result, students would more easily benefit from the Service’s support in developing job-seeking skills and the discipline would receive specialist help in seeking industrial placement opportunities for students on relevant programmes.

Computing Science was **commended** for its excellent website. The Panel **recommended** that the pages giving information about undergraduate industrial placements and for research students should be updated and restructured to match the high quality of the rest of the site.

**2 Commendable features**

 *(Numbers in brackets refer to the relevant paragraph of the Panel’s full report.)*

 The Panel **highly commended** the following aspects of Computing Science’s provision.

2.1 the introduction of CS3021, Communication of Computing Science, which is being piloted in 2007/8. Students in levels 3 and 4 mentor groups of level 1 students on the Foundations of Computing Science courses. Student feedback made clear that both mentors and those mentored found it a worthwhile and positive experience. [15.2.2]

2.2 the decision to include student representatives on the Computing Science Teaching and Learning Committees. It would formalise student contribution to all teaching developments. [5.1.7 & action point 7]

 The Panel **commended** the following aspects of Computing Science’s provision.

2.3 the recent introduction of the new BSc in Artificial Intelligence in academic year 2007/8. While it was too early to predict how successful the degree would be, it was a positive development based on an area of research expertise within the discipline.

2.4 the positive steps taken by academic staff to try to identify students who entered with lower levels of skills and to offer additional tutorials and other support sessions for students experiencing difficulties. [2.4, 15.1.2-15.1.5, 15.2.6 & 16.2.3]

2.5 the decision to introduce more team teaching within the discipline. It was recognised that it would help to make teaching less vulnerable to long-term staff illness by ensuring that planning and delivery of individual courses would be shared between several academic staff. [3.3, action point 1]

2.6 the introduction of an internal examiners’ meeting, held before the main examiners’ meeting, to consider medical and other extenuating circumstances, and the subsequent presentation of this and other information to the externals, including the identification of potential borderline candidates. [4.8.1]

2.7 the intention to set up a Progression Committee. [4.8.4, action point 6, 15.2.3 & action point 16]

2.8 the intention to re-instate a final year group from which Computing Science in the past had gained useful feedback about current undergraduate provision and possible future developments. [5.1.8 & action point 8]

2.9 efforts to try to identify and support students whose poor English language skills hampered their academic progress. [5.2.6, 6.3.1, 16.2.4]

2.10 the use of a year-long Software Engineering course at undergraduate level 3 and a similar course on the non-specialist masters programmes. The course was designed to be as realistic as possible to ensure students worked through all stages of developing a major system and to enhance students’ transferable skills. [6.1.3]

2.11 the use of a “trade fair” as part of the specialist masters programmes. It provided students with real-life experience of presenting their ideas to industry representatives. [6.1.5]

2.12 placing all teaching material on the discipline’s website in advance to benefit special needs students and students with poor English language skills. [5.2.6, 6.3.1 & 16.2.4]

2.13 the positive approach taken by Computing Science in teaching all undergraduate and non-specialist taught masters students about cultural differences, disabilities and ways in which assistive technologies could be used to help disabled students. [6.3.2, 12.7 & 19.2]

2.14 obtaining student feedback by mechanisms in addition to the SCEF exercise. [7.4.2]

2.15 the intention to move to providing more explicit information for students about course changes and the introduction of new courses. [7.4.3 & action point 11]

2.16 the foresight shown by Computing Science in developing procedures regarding first- and second-year presentations for off-campus research students so that they would be in place against future need. [9.3.4 & action point 12]

2.17 the intention to adopt a suggestion from current students that all PhD students who had recently completed their degrees would be invited to give a seminar to the discipline. [9.3.6]

2.18 the development of a closer working relationship with the Careers Service, both in seeking to find more industrial partners for industrial placement students and in enhancing the provision of careers-related presentations to students. [10.6]

2.19 the decision to establish a database to record and monitor staff training undertaken by members of Computing Science.

2.20 the introduction of a voluntary scheme of peer observation of teaching. [12.6]

2.21 the decision to create written job instructions (what to do when) for each of the roles within the discipline to give needed guidance for staff assuming new roles. [12.9 & action point 15]

2.22 the clear commitment of staff to offering well-structured, interesting courses and programmes which were designed both to equip students with technical capabilities relevant to future employment or further study and to develop a good range of transferable skills.

2.23 the provision of extra support to help students with relatively weak technical skills. [2.4, 15.1.2-15.1.5, 15.2.6 & 16.2.3]

2.24 the discipline’s excellent website. [15.1.9]

2.25 the welcoming reception held at the start of the first half-session to which all undergraduate level 4 students, Erasmus students, prize-winning students from undergraduate levels 1-3 and staff are invited. [15.1.10]

2.26 the intention to set up a Progression Committee to enhance the transparency of decisions regarding admission to junior honours and progression from junior to senior honours. [4.8.4, action point 6, 15.2.3 & action point 16]

2.27 the introduction of articulation agreements with two Chinese universities for 2+2 undergraduate degrees. [4.10 &16.1.1-16.1.7]

2.28 initiatives to widen participation by means of distance learning and flexible study provision in conjunction with the Centre for Lifelong Learning. [16.2.1-16.2.2]

**3 Recommendations**

*The Panel invites Computing Science to consider the recommendations in this section and asks that the Head of Computing Science, in consultation with the Head of School, the Head of College and, where appropriate, the College Director of Teaching and Learning, provide an agreed response to each*.

 The Panel **recommended** that Computing Science:

 ***Staffing***

3.1 plan the use of team teaching carefully to ensure that the groups of staff involved had the opportunity to benefit from sharing a range of expertise and teaching styles. [3.3, action point 1]

3.2 in consultation with the School of Natural and Computing Sciences, devote urgent attention to improving the situation which had recently resulted from a serious diminution in the level of computing support within the discipline. (See also 3.10) [3.6]

 ***School/departmental organisation***

3.3 appoint a named member of academic staff with responsibility for disability issues. While there was confidence that the present arrangements were entirely satisfactory in giving practical support to students, an academic member of staff could represent disability issues on committees and in policy discussions in a way which would not be possible for a support staff colleague. [4.2.6 & 15.1.7]

3.4 consider streamlining its committee structure to reduce the demands on staff time. [4.5-4.14]

3.5 think carefully as to how best the Research Committee and the Teaching and Learning Committees could work together to achieve the desired objective of reviewing research-led teaching with the intention of updating and refreshing courses. [4.7 & action point 4]

 ***Teaching, learning and assessment***

3.6 continue to review the use of a “trade fair” as part of the specialist masters programmes to ensure that students continued to receive the support needed to participate. [6.1.5]

3.7 consider carefully whether the provision of teaching material on the discipline’s website in advance of teaching sessions had an adverse effect on class attendances. [5.2.6, 6.3.1 & 16.2.4]

3.8 take care to ensure that, in future, the procedures for mentoring, monitoring and providing feedback for industrial placement students be formalised to prevent a repetition of the recent case of a student on industrial placement who had experienced a serious lack of support. [6.4.2 & 6.4.3]

3.9 ensure that level 1 assessment results be returned to students promptly in order to encourage students to develop the practice of learning from formative and summative assessments.

3.10 make a priority of finding a full and long-term resolution to the problems resulting from the reduced level of computing support caused by prolonged staff illness. Students who had been affected by the deficiencies should be informed of improvements already achieved and, at the appropriate time, of those to come. (See also 3.2 above.)

 ***Training and supervision of research students***

3.11 consider providing additional research student training such as qualitative research methods, either within the discipline or in co-operation with the School and/or the College. [9.2.2]

3.12 undertake its own analysis of the reasons why the 60% completion rate for Computing Science research students was not higher so that effective action could be taken to improve the figure. [9.3.5]

3.13 suggest to the College Graduate School that a rolling programme of supervisor training be offered year on year. [9.4]

 ***Personal development and employability***

3.14 give serious consideration to including student representation on the discipline’s Undergraduate and Postgraduate Industrial Liaison Committees. [10.1]

 ***Staff training and educational development***

3.15 give careful consideration to ensuring that the output of the projected database of staff training would be helpful in identifying both those courses which could be recommended for other colleagues and areas useful to the discipline in which no staff had hitherto undertaken training. [12.1 & action point 14]

 ***Student involvement in quality processes***

3.16 try to ensure that SCEF form submission rates for all courses reached a uniformly satisfactory level. [13.4]

 ***Student support, retention and progression***

3.17 revise the pages of its website which gave information about undergraduate industrial placements and for research students so that they matched the high quality of the rest of the site. [15.1.9]

3.18 undertake its own analysis of the reasons for poor level 1 retention rates. [15.2.2]

3.19 consider carefully any relaxation of requirements for entry to and progression through honours. No student should be allowed to progress who could not realistically achieve an honours degree and full SCQF compliance. [4.8.4, action point 6, 15.2.3 & action point 16]

 ***Recruitment, access and widening participation***

3.20 include student representation on the Recruitment and Publicity Committee so that the discipline could benefit from student input to recruitment initiatives. [4.10 &16.1.1-16.1.7]

3.21 re-examine material offered for distance learning and flexible study provision to ensure that it was presented in a way appropriate to the learning channel used. [16.2.1-16.2.2]

 ***Matters to be taken up outside Computing Science***

3.22 The Panel **recommended** that the School of Natural and Computing Sciences consider allocating specific sessions for established administrative/secretarial support staff to train newcomers, rather than providing training on an *ad hoc* basis. The change would allow staff to plan their workload better. [3.7 & action point 3]

3.23 The Panel **recommended** that Computing Science explore further with the School, the College and the Language Centre the possibility of gaining additional help in identifying and supporting students whose poor English language skills hampered their academic progress. [5.2.6, 6.3.1, 16.2.4]

 ***Matters to be taken up outside the College of Physical Sciences***

3.24 See 3.23 above.

**4 Conclusions**

The Panel considered Computing Science to be a discipline with a strong sense of identify and cohesiveness. Staff had a clear focus on providing interesting, up-to-date and well-supported educational opportunities. With the exception of two specific problem areas discussed above (see sections 3.3, 6.6, 6.8 & 15.1), students were very positive about their experiences within Computing Science. Staff-student relationships appeared to be strong, a fact acknowledged and valued by both students and staff.

There was a transition towards support services being shared across the School of Natural and Computing Sciences rather than being specific to disciplines. The Panel noted that there was a perception in Computing Science that the transition had yet to provide fully sufficient levels of support for teaching. This was a consequence of lack of adequate cover and in no way a reflection on the support staff themselves. Computing Science were acutely aware of recent deficiencies which had been caused by illness and changes in support staff and were committed to doing what lay in their power to rectify the difficulties.

The Panel would like to thank all members of staff within Computing Science for the work that has gone into producing the ITR documentation and for their commitment to the review process. They would also like to thank all students and staff members whom they met during the visit.

**5 Revalidation of programmes**

The Panel revalidated the following programmes:

*Undergraduate programmes*

BSc honours in Computing Science

BSc honours in Computing Science with industrial placement

BSc designated degree in Computing Science

BSc honours in Computing Science (Artificial Intelligence)

BSc honours in Computing Science (Artificial Intelligence) with industrial placement

BSc honours in Computing Science (Business Computing)

BSc honours in Computing Science (Business Computing) with industrial placement

BSc honours in Computing Science (Biomedical Computing)

BSc honours in Computing Science (Biomedical Computing) with industrial placement

BSc honours in Artificial Intelligence

BSc honours in Artificial Intelligence with industrial placement

BSc honours in Internet Information Systems

BSc honours in Internet Information Systems with industrial placement

MA honours in Computing

MA honours in Computing with industrial placement

MA designated degree in Computing

BSc honours in Computing Science with French

BSc honours in Computing Science with French with industrial placement

BSc honours in Computing Science with Spanish

BSc honours in Computing Science with Spanish with industrial placement

BSc joint honours in Computing and E-Business

BSc joint honours in Computing Science-Mathematics

MA joint honours in Computing Science-Mathematics

BSc joint honours in Computing Science-Psychology

MA joint honours in Information Systems and Management

*Postgraduate programmes*

MSc/PgDip in Information Technology (ie, non-specialist taught programme)

MSc/PgDip in Information Systems (ie, non-specialist taught programme)

MSc/PgDip in E-Commerce Technology (ie, specialist taught programme)

MSc/PgDip in E-Science Technology (ie, specialist taught programme)

PhD

MPhil

MSc by research

**UNIVERSITY OF ABERDEEN**

**INTERNAL TEACHING REVIEW**

**RESPONSE FROM COMPUTING SCIENCE**

The staff of Computing Science would like to thank the Panel for visiting us, studying our teaching

provision and providing valuable insight into our strengths and weaknesses. It is particularly

pleasing that the Panel chose to commend 28 aspects of our teaching provision. In the following, we

address the specific recommendations made by the Panel. Input and feedback from the students

who were interviewed by the panel have been taken into account.

***Staffing***

3.1 plan the use of team teaching carefully to ensure that the groups of staff involved had the

opportunity to benefit from sharing a range of expertise and teaching styles. [3.3, action

point 1]

*In our report, we proposed to consider the introduction of more team teaching. We are pleased to*

*follow the above suggestion, which will enable best practice to spread and more junior staff*

*members to get extra support.*

3.2 in consultation with the School of Natural and Computing Sciences, devote urgent attention

to improving the situation which had recently resulted from a serious diminution in the level

of computing support within the discipline. (See also 3.10) [3.6]

*We are about to shortlist for a new Computing Officer post, which will bring our complement to 2.5*

*FTE (whereas for a number of years it has been 2 FTE or less). We are in continuing*

*discussions with DIT with a view to (a) making fuller use of centralised DIT facilities, so that*

*the load on computing staff is less and (b) enabling better cover in the case of staff illness.*

***School/departmental organisation***

3.3 appoint a named member of academic staff with responsibility for disability issues. While

there was confidence that the present arrangements were entirely satisfactory in giving

practical support to students, an academic member of staff could represent disability issues

on committees and in policy discussions in a way which would not be possible for a support

staff colleague. [4.2.6 & 15.1.7]

*This idea was in fact discussed in Computing Science during the preparation of our report. We plan*

*to follow the recommendation, though we will first raise the issue of whether this position*

*would be better held at the School level.*

3.4 consider streamlining its committee structure to reduce the demands on staff time. [4.5-

4.14]

*We are very much in favour of this, and a move to streamline our committees had already started*

*before the review, when we amalgamated our two Postgraduate TLCs. In the near future, we*

*plan to amalgamate our two Industrial Liaison committees, and to look out for further*

*optimisations in committee structure that can be made.*

3.5 think carefully as to how best the Research Committee and the Teaching and Learning

Committees could work together to achieve the desired objective of reviewing research-led

teaching with the intention of updating and refreshing courses. [4.7 & action point 4]

*Yes, we will do this.*

***Teaching, learning and assessment***

3.6 continue to review the use of a “trade fair” as part of the specialist masters programmes to

ensure that students continued to receive the support needed to participate. [6.1.5]

*We are pleased that the Panel commends our use of a “trade fair”. Currently the students are*

*supported by the course organiser and tutors of their group project (CS5560), and we*

*believe this is adequate.*

3.7 consider carefully whether the provision of teaching material on the discipline’s website in

advance of teaching sessions had an adverse effect on class attendances. [5.2.6, 6.3.1 &

16.2.4]

*We have considered this. Since such material has to be made available in advance to disabled*

*students, for equality we feel that we have no alternative but to make it available to all.*

*Students commented that their attendance in classes is not influenced by the lecture slides*

*being provided online, and they very much appreciate the current provision.*

3.8 take care to ensure that, in future, the procedures for mentoring, monitoring and providing

feedback for industrial placement students be formalised to prevent a repetition of the recent

case of a student on industrial placement who had experienced a serious lack of support.

[6.4.2 & 6.4.3]

*The procedures for supporting placement students are already formalised and published at*

*http://www.csd.abdn.ac.uk/~kvdeemte/teaching/CS4016/. We believe that these procedures*

*are adequate. We will ensure that these procedures are strictly implemented in the future*

*and this will avoid a repetition of this recent case.*

3.9 ensure that level 1 assessment results be returned to students promptly in order to

encourage students to develop the practice of learning from formative and summative

assessments.

*We have a very good record of returning level 1 assessments on time. Indeed, the assessments for*

*the students interviewed by the Panel were all returned on time (the deadline not being until*

*after the Panel visit).*

3.10 make a priority of finding a full and long-term resolution to the problems resulting from the

reduced level of computing support caused by prolonged staff illness. Students who had

been affected by the deficiencies should be informed of improvements already achieved

and, at the appropriate time, of those to come. (See also 3.2 above.)

*See 3.2 above. All students were mailed around the time of the Panel visit to explain the*

*improvements implemented. Some of the problems raised by the students interviewed had in*

*fact already been fixed. There have been problems properly informing students about the*

*resolution of their complaints, and we will aim to do better with this.*

***Training and supervision of research students***

3.11 consider providing additional research student training such as qualitative research methods,

either within the discipline or in co-operation with the School and/or the College. [9.2.2]

*Yes, we will consider this.*

3.12 undertake its own analysis of the reasons why the 60% completion rate for Computing

Science research students was not higher so that effective action could be taken to improve

the figure. [9.3.5]

3

*Yes, we will undertake this.*

3.13 suggest to the College Graduate School that a rolling programme of supervisor training be

offered year on year. [9.4]

*Yes, we will suggest this.*

***Personal development and employability***

3.14 give serious consideration to including student representation on the discipline’s

Undergraduate and Postgraduate Industrial Liaison Committees. [10.1]

*Yes, we will seriously consider this.*

***Staff training and educational development***

3.15 give careful consideration to ensuring that the output of the projected database of staff

training would be helpful in identifying both those courses which could be recommended for

other colleagues and areas useful to the discipline in which no staff had hitherto undertaken

training. [12.1 & action point 14]

*Yes, this would be a good use for the database. We will consider including information about staff*

*satisfaction with courses, in order to facilitate recommendations.*

***Student involvement in quality processes***

3.16 try to ensure that SCEF form submission rates for all courses reached a uniformly

satisfactory level. [13.4]

*We always try to ensure this. Our idea of piloting the use of electronic SCEFs (alongside the current*

*system) is one way that this may be facilitated.*

***Student support, retention and progression***

3.17 revise the pages of its website which gave information about undergraduate industrial

placements and for research students so that they matched the high quality of the rest of the

site. [15.1.9]

*We assume that this refers to the careers and research student pages, as the industrial placement*

*pages (see 3.8 above) are adequate. Yes, we will do this.*

3.18 undertake its own analysis of the reasons for poor level 1 retention rates. [15.2.2]

*Yes, we are constantly monitoring our success at retention in level 1, as we see this as a key area*

*for our student numbers and are introducing a number of innovations at this level.*

3.19 consider carefully any relaxation of requirements for entry to and progression through

honours. No student should be allowed to progress who could not realistically achieve an

honours degree and full SCQF compliance. [4.8.4, action point 6, 15.2.3 & action point 16]

*The entry and progression criteria for honours have now been overhauled, with this need in mind.*

***Recruitment, access and widening participation***

3.20 include student representation on the Recruitment and Publicity Committee so that the

discipline could benefit from student input to recruitment initiatives. [4.10 &16.1.1-16.1.7]

4

*Yes, we will do this.*

3.21 re-examine material offered for distance learning and flexible study provision to ensure that it

was presented in a way appropriate to the learning channel used. [16.2.1-16.2.2]

*Yes, we will undertake a thorough review of our distance learning provision, considering its quality*

*and value for effort.*

***Matters to be taken up outside Computing Science***

3.22 The Panel **recommended** that the School of Natural and Computing Sciences consider

allocating specific sessions for established administrative/secretarial support staff to train

newcomers, rather than providing training on an *ad hoc* basis. The change would allow staff

to plan their workload better. [3.7 & action point 3]

*We will request the Head of School to do this.*

3.23 The Panel **recommended** that Computing Science explore further with the School, the

College and the Language Centre the possibility of gaining additional help in identifying and

supporting students whose poor English language skills hampered their academic progress.

[5.2.6, 6.3.1, 16.2.4]

*Yes, this point will also be raised with the Head of School, who may decide that this is best dealt*

*with at a College level.*

***Matters to be taken up outside the College of Physical Sciences***

3.24 See 3.23 above.

*See 3.23 above.*