UNIVERSITY SUBJECT REVIEW

Computing provision provided by the School of Computing

February 2009

Preface

Purpose of University subject review
The purpose of University subject review is to provide a mechanism which enables the University to be confident that the academic standard set and approved for all credit bearing and non-credit bearing provision and the quality of learning opportunities offered to all students meet University and Scottish Funding Council expectations.

Outline of the procedure
University subject review is implemented in three complementary stages: preparation, led by a School Quality Committee and monitored by the Head of School; scrutiny, led by Academic Development; and, implementation of a school enhancement plan, led by a School Quality Committee and monitored by the University Quality Committee. Faculty Quality Committee provides support, advice and guidance to schools throughout the process as appropriate. The procedure is evidence-based and is reliant on information gathered during faculty and school module and programme approval and routine monitoring activities over a typical period of six years. University subject review has been designed to be developmental in nature and encourages self-critical reflection through promoting dialogue between peers on areas where quality might be improved.

Evidence
In order to obtain evidence for the review, the Panel carries out a number of activities, including reviewing the school's self critical reflection, internal procedures and associated documentation, and holding discussions with relevant staff and students. The Panel's discussions are also informed by University policy and procedures and external benchmarking information.

Outcome of the review
The outcome of the review is a school enhancement plan developed by the School Quality Committee using information from the review report. The report records the Panel's findings in relation to the effectiveness of the measures being implemented by the School to set and maintain the academic standard of its provision and to enhance the quality of the learning experience of all of its students. The report includes areas of good practice worthy of further dissemination and recommendations made by the Panel to improve the school's management of its provision. A draft school enhancement plan noting the good practice identified by the review panel and any recommendations made will form part of the review report.

The school enhancement plan.
Identified good practice and recommendations noted by the Panel are set out in a draft school enhancement plan. Within a timescale agreed by the Head of School and Academic Development the school completes the enhancement plan by identifying: the action to be taken to either share good practice or address recommendations; the individual with responsibility for implementing the action; a completion date; and, the means by which the success or otherwise of the action will be evaluated and reported. School Quality Committee will monitor the implementation of the enhancement plan and provide their Faculty Quality Committee with regular progress reports. Faculty Quality Committee will provide University Quality Committee with a progress report on the implementation of the enhancement plan as part of the annual reporting procedure.

Executive summary

Summary
Computing provision is available through a relevant and flexible curriculum which adequately equips students with the necessary skills and understanding to gain employment in the subject area. Computing provision is effectively managed by the School and the academic standards set continue to meet subject, University and sector expectations. Mechanisms are in place to ensure that the curriculum is relevant and current and influenced by research and professional interests of staff. The provision is delivered using a variety of relevant learning, teaching and assessment approaches and through innovative uses of technology. Work-based learning is a key feature of the undergraduate provision. A range of effective mechanism are in place to manage the student experience across all levels of computing provision in line with University expectations.

Good practice
The Panel identified the following areas of **good practice** for further dissemination University-wide:

- The rapport between staff and students is excellent and students greatly appreciate the personal interest and academic and personal support provided to them by all staff. The positive and friendly atmosphere within the School was cited as a distinctive feature of the computing subject area by students from all levels of study. (paragraph 12)
- *Module boxes* provide a reference point for storing definitive and up-to-date information associated with the learning, teaching and assessment of each module and are a key feature of the management of computing provision at undergraduate and taught masters levels. (paragraph 17)
- The development and introduction of innovative and effective procedures for managing its Boards of Examiners including the use of technology to enable student information to be shared electronically during meetings. (paragraph 21)
- The embedding of professionally accredited awards within approved modules demonstrates the subject area's commitment to providing students with a relevant and up-to-date learning experience which will enhance their career aspirations. (paragraph 22)
- The annual conference hosted by the School Learning, Teaching and Assessment Committee to discuss developments in pedagogic practice. (paragraph 24)
- The innovative approaches to learning, teaching and assessment and the use of technology which are designed to engage students more effectively. (paragraph 25)
- The provision of work-based learning across the undergraduate provision. (paragraph 27)
- The use of honours and research students to support students in earlier years of study as a means of engaging students in their learning and in involving students in enhancement activities. (paragraph 29)
- The single staff student liaison committee for student representatives from all of its undergraduate and taught masters programmes of study is an effective method for engaging students in the enhancement of their programmes as students from senior stages of study are able to provide peer support and encouragement to junior colleagues. (paragraph 34)

- The innovative approach to Week 1 induction activities for all years of undergraduate programmes of study which includes a programme of workshops with subject specific, pedagogic and general interest themes which students were invited to attend. (paragraph 36)

Recommendations

The Panel recommends that the School of Computing:
- reviews its policy on the provision of written feedback to ensure that this is consistently provided to all of its students in a typed format (paragraph 19)
- continues to ensure that assessment briefs are used consistently across the subject area and that these contain clear and appropriate assessment criteria which are easily understood by students (paragraph 20)
- continues to support the University-led work to introduce a version control system for its module descriptors to ensure that the most recent version and that the date of the changes made are clearly identifiable (paragraph 23)
- continues to engage with the University-level debate on internationalising the curriculum and contributes to this by exploring a clearer definition of the term which takes into account the notion of the subject discipline being international and the need to provide support for international students (paragraph 31)
- continues to expand its existing personal development tutor scheme to all taught provision during the remainder of this and subsequent academic sessions (paragraph 37)
- continues to monitor student retention, progression and achievement statistics with a view to identifying any trends which might help to improve this quantitative data (paragraph 38)
- in order to prevent the need for unnecessary remedial work in future projects the subject area ensures its internal communication mechanisms take account of University and faculty policy (paragraph 41)

EDINBURGH NAPIER UNIVERSITY

UNIVERSITY SUBJECT REVIEW

Computing provision provided by the School of Computing: February 2009

Conduct of the review

1   This report presents the findings of the University subject review of computing provision provided by the School of Computing (the School). The review was carried out by:

Rowena Pelik, Director Academic Development (Panel Convenor).
Prof Malcolm Crowe, Associate Dean, School of Computing, University of the West of Scotland.
Caroline Copeland, Director of Quality and Customer Service, School of Creative Industries.
Prof Morag Gray, Associate Dean (Academic Development) Faculty of Health, Life and Social Sciences.
Anne Sibbald, Associate Director Academic Enhancement.
Caroline Turnbull, Associate Dean (Academic Quality and Customer Service), Faculty of Engineering, Computing and Creative Industries
Dr Sam Wamuziri, Director of Academic Development, School of Engineering and the Built Environment.
Howard Wollman, Head of School of Health and Social Sciences.
Dr Rob Wilkinson, Associate Dean (Academic Quality and Customer Service) Napier University Business School.
Grant Horsburgh, Head of Quality Enhancement (Panel Secretary).

2   Evidence in support of the review included an extensive range of material supplied by the School on a cd-rom which accompanied the self-critical reflection and this was supported by a sample of student work and other printed documents which were made available to the Panel. The Panel agreed that the self-critical reflection was easy to read, made effective use of referencing to additional information and was open and honest. The self-critical reflection contained areas of good practice and a reflection on areas where developments are required.

Setting the review in context

3   The School of Computing is one of three schools in the Faculty of Engineering, Computing and the Creative Industries. The School has 48 academic full-time equivalent staff, 20 research full-time equivalent staff, 7 administrative and clerical full-time equivalent staff and 2 Technical full-time equivalent staff. After a sustained period of contraction the School has successfully moved into new areas of provision which has resulted in a 10 per cent increase in student numbers from session 2007-08 to this session in which enrolments are at 1,017 full-time equivalent students.

4   The School offers programmes across a wide spectrum of the computing discipline. The most notable change to the provision in recent years is substantial growth in the areas of Networking, Interactive Media and Computer Security and Digital Forensics. In contrast there has been a decline in the more business-focussed aspects of the provision such as Information Systems. These reflect changing graduate markets both at home and abroad.

5   The management and development of teaching within the School is organised on two axes: the support and management of the subject discipline within subject groups and the management of programmes through programme suites. The School has five teaching subject groups: Software Engineering and Technology; Information Systems; Computer Systems and Networking; Multimedia and Interactive Systems Design; and, a Projects subject group which is responsible for all-school modules such as undergraduate projects, postgraduate dissertations and work-based learning.

6   There are five research groups within the School. The 2008 Research Assessment Exercise submission included contributions from over 30 staff and resulted in a very satisfactory research grading for the School with 20 per cent of the submissions being rated Internationally Excellent and 60 per cent as Recognised Internationally. In addition the School's submission for the Library and Information Management unit of assessment included 10 per cent as World Leading.

7   The School's taught provision was reviewed in session 2007-08 as part of the University's change to a 20-credit modular structure. Teaching in the School now spans 19 undergraduate and 15 taught masters programmes, grouped into suites. The overarching aim of the computing discipline is to deliver high quality, up-to-date and vocationally relevant education to a wide spectrum of students. Specifically the School's stated aims are to:

   a)   provide an engaging and supportive learner-centred environment in which students can achieve their full potential
   b)   ensure our provision is underpinned by research and scholarship, and that this is reflected in both curriculum and teaching
   c)   reflect the breadth of the computing discipline in curricula, as exemplified by the subject benchmark statement, with programmes structured around a framework of awards from Scottish Credit and Qualifications Framework (SCQF) levels 7 to 12
   d)   ensure that the School adapts to developments in the computing discipline, the evolving requirements of students and employers and identifies and exploits new opportunities and growth areas
   e)   ensure that teaching and learning strategies are inclusive, supportive of diversity and responsive to the changing needs of our student community both at home and overseas
   f)   ensure the accessibility of staff and its responsiveness to student problems and needs
   g)   provide flexibility by means of delayed choice of programme route, breadth of module choice, variety in entrance and exit pathways, options of work-based learning and a range of delivery modes
   h)   enable students to develop problem-solving skills with a real-world orientation; the ability to adapt to change; be aware of ethical and professional issues; and be able to learn independently
   i)   enable students to secure suitable employment on graduation and allow them to continue to progress in their careers;
   j)   deliver to the expectations of the 20-credit modular scheme.

8   As a result of their scrutiny of the evidence provided the Panel concluded that the School has appropriate and effective management systems in place to enable the stated aims to be met.

Provision included within the scope of the review

9	The awards included within the scope of this review are listed in Appendix 1. All modules and programmes of study scrutinised during this review have been approved during the University's move to a 20-credit modular structure and are subject to annual review and monitoring in accordance with University procedures.

Culture and distinctiveness of the computing subject area

10	The distinctiveness of the student learning experience within the computing subject area is evident in the relevance of the curriculum and the flexibility offered to students through the range of modules and programmes. The flexibility offered to students is also evident in the variety of entry profiles incorporated into the design of the portfolio of programmes. The subject area provides students with a range of study pathways through its suites of modules and programmes which provide students with a deep understanding of the subject with a strong vocational relevance. As a result students are adequately equipped with the necessary skills and understanding to gain employment within the discipline. In particular the Panel noted the effective way in which the subject area has incorporated professional qualifications within a range of its undergraduate and taught masters programmes.

11	Discussions with staff indicated well established and effective links between staff research activities and practical learning and teaching activities across its programmes. Current and former research students were particularly enthusiastic regarding the effectiveness of the staff in creating a research ethos within the subject area and provided the Panel with examples of links between research and teaching activities.

12	The approachability of all staff was highlighted by the Panel as an area of good practice. Students informed the Panel that the rapport between staff and students was excellent and they greatly appreciate the personal interest and academic and personal support provided to them by all staff. The positive and friendly atmosphere within the School was cited as a distinctive feature of the computing subject area by students from all levels of study.

The effectiveness of the subject's management of academic standards and the enhancement of the student learning experience

13	The scrutiny of programme specifications, module descriptors, the sample of student work and other supporting evidence enabled the Panel to confirm that the computing provision being provided by the School of Computing is continuing to meet subject, University and sector expectations.

14	The computing subject area has effective mechanisms in place to manage the academic standard of its provision across all SCQF levels and modes of delivery in accordance with University expectations. A comprehensive committee structure within the School is responsible for all aspects of school conduct. The School Executive oversees the activities of the Teaching Management Team, Quality Committee, Learning, Teaching and Assessment Committee and the subject groups. Both academic and administrative staff are actively involved in all School committees. The Panel agreed that the close collegiate working relationship between academic and administrative staff reflected the overall ethos and culture of the subject area.

15   The School Quality Committee is responsible for the co-ordination of all quality enhancement and assurance activity. The appointment of School Directors to mirror the University's matrix management structure across Academic Development and Academic Quality and Customer Service help to ensure that the management of the subject area's engagement with quality enhancement is effective.

16   The Panel noted from the evidence provided that the subject area takes appropriate account of feedback provided as a result of a variety of internal and external enhancement and assurance activities. External examiners' reports are considered in accordance with University expectations and there are effective mechanisms in place to ensure that appropriate action is taken to address feedback within such reports.

17   A key feature of the management of computing provision at undergraduate and taught masters levels is the use of *module boxes*. These provide a reference point for storing definitive and up-to-date information associated with the learning, teaching and assessment of each module. Module boxes are kept in the School office and maintained jointly by nominated subject group and administrative staff. The Panel found the sample of module boxes provided as part of the evidence to be a valuable information management tool and agreed that their establishment and use was a feature of good practice.

18   Students were able to confirm to the Panel that they understood the purpose of staff providing them with feedback on their assessments. Students receive assessment feedback typically within two weeks of submitting their assignments and appreciate that this is shorter than the University expectation of three weeks. In discussing the effectiveness of feedback provided by staff, students provided specific examples of how feedback provided by staff had enabled them to improve their subsequent marks. Subject staff further enhance the student learning experience by providing students with the opportunity to discuss the feedback on a one-to-one basis should students request this.

19   However, the scrutiny of the sample of student work and module boxes revealed a number of examples of illegible hand-written assessment feedback. Better examples seen by the Panel had been typed. In discussing this with students the Panel learnt that in such cases students did not always seek clarification of what had been written which suggested that the positive features of the feedback process are being undermined. Staff indicated that in many cases the hand-written feedback is supplemented by an email clearly setting out the points made. The Panel recommends that there would be benefit in the subject area reviewing its policy on the provision of written feedback to ensure that this is consistently provided to all of its students in a typed format.

20   Students indicated some confusion between students studying different programmes regarding the availability of clear assessment criteria to enable them to properly prepare prior to the submission of assignments. A small number of students also indicated that it was not always clear to them as to how a mark or grade had been reached or could be achieved in the future. Discussions with staff indicated that work was continuing to ensure that assessment briefs are being used consistently across the subject area and that these contain clear and appropriate assessment criteria which are easily understood by students. The Panel recommends that the subject area continues with this development work to ensure that the security of the assessment process continues to be maintained.

21   The subject area has developed and introduced innovative and effective procedures for managing its Boards of Examiners. Student information is processed electronically and the Boards are conducted in a meeting room which enables student spreadsheets to be projected. Discussions with staff indicated that since the adoption of this practice the effectiveness of Boards has noticeably increased, a view shared by external examiners. The Panel commended the subject area for this innovative use of technology and agreed that this was a feature of good practice.

The effectiveness of the subject's ability to ensure that staff maintain curriculum currency and relevance
22   The Panel concurs with the subject area by acknowledging that the nature of the subject discipline leads to a need for its taught provision to be constantly monitored and reviewed to take account of emerging developments and the future employment needs of students. The subject area evaluated in its critical self-reflection the challenges associated with keeping pace with the need for subject-driven changes and for professional body accreditation in key subjects. The Panel found that the School adopts a holistic and managed approach to change which is underpinned by active and open collaboration between staff across the subject groups. The embedding of professionally accredited awards within approved modules was noted as a feature of good practice as this demonstrates the subject area's commitment to providing students with a relevant and up-to-date learning experience which will enhance their career aspirations.

23   The Panel explored with staff the mechanism in place for ensuring that students and staff have access to the approved version of a module descriptor. Staff indicated that while the most recent version of a module descriptor might not necessarily be available through the web site, it is available to students using Nimweb. The School office is responsible for maintaining the accuracy of information on Nimweb. In acknowledging the effectiveness of the management of module information by the School office the Panel recommends that the subject area continues to support the University-led work to introduce a version control system for its module descriptors to ensure that the most recent version and that the date of the changes made are clearly identifiable.

24   The School Learning, Teaching and Assessment Committee host an annual conference to discuss developments in pedagogic practice. Programmes from previous conferences indicate that topics covered draw on the expertise of Teaching Fellows from the subject area, the University community and external speakers. Discussions with staff and research students indicates that areas covered during conferences are influenced by research and professional interests of staff, for example, developments in e-learning, work-based learning, student retention and provision of additional support for students with individual learning needs. The Panel found the annual conference to be a feature of good practice.

The effectiveness of the subject's approaches to learning, teaching and assessment
25   The subject area prides itself in providing innovative approaches to learning, teaching and assessment. Discussions with staff and students indicated that a number of innovative and interesting approaches to curriculum delivery are being implemented with a view to engaging students more effectively. The Panel noted that the nature of the discipline means that staff and students have highly developed computing skills which has assisted the subject area in adopting technology more readily than some other subjects might. For example, students expect learning, teaching and assessment information to be available for all taught modules on the virtual learning environment. While learning tools such as

blogs are no longer regarded as innovative by the subject area the Panel noted the use of such technology as good practice.

26   Early formative assessment and the use of assessments which reflect work practice within the discipline are features of good practice in the majority of the subject area's taught modules. Students appreciate the opportunity to gauge their performance in a module and value greatly the authentic nature of final summative assessments, particularly the practical nature of assessments at taught masters level.

27   Opportunities for work-based learning are a key feature of the undergraduate provision and are embedded within all programme structures. The School has an effective employer liaison board and maintains a pool of prestigious employers with whom students can work during their placement year. The demand from employers for graduates who have previously completed a work placement with the Company is evidence of the success of the scheme. The School has produced a handbook on work-based learning which provides clear and appropriate information for staff, students and employers on the expectations and requirements of the scheme. The School provides an overseas placement module as an alternative to the work-based learning element. In addition, project-based modules are available for students who are unable to participate in either work-based or overseas placement learning. The Panel found that the provision of work-based learning across the subject area to be a feature of good practice.

28   The Panel found that the subject area has an effective mechanism for managing undergraduate honours projects and taught masters dissertations. Clear guidance is provided for students and staff on the requirements and expectations in a dedicated handbook and this is complemented by induction and preparation briefings for students at the beginning of each trimester in their honours or taught masters dissertation year.

29   The subject area encourages honours and research students to support students in earlier years of study by asking them to provide presentations during induction weeks. The Panel commended the subject area for this initiative as it was regarded as a feature of good practice in engaging students in their learning and in involving students in enhancement activities.

30   During the meeting with students a minority of taught masters students indicated a concern regarding assessment bunching at key points within their programme. In discussing this with staff the Panel noted that assessment schedules are provided at the start of each trimester and that this point had not been raised previously. The subject area indicated that it would continue to monitor student workloads to ensure that unnecessary assessment bunching did not occur.

31   The subject area is committed to internationalising its curriculum. However, discussions with staff indicated some confusion within the subject area regarding the priority to be given to the various aspects of internationalising the curriculum. This confusion centres round the lack of a common definition on internationalising the curriculum, a challenge that the Panel acknowledged as being explored University-wide. In continuing with this important development work the Panel recommends that the subject areas continues to engage with the debate at University-level and contributes to this by exploring a clearer definition of the term which takes into account developments to internationalise the curriculum, the notion of the subject discipline being international and the need to provide support for international students.

The effectiveness of the subject's management of the student experience

32   The subject area has a range of effective mechanism in place to manage the student learning experience across all SCQF levels of its provision in line with University expectations. In addition the subject area has initiated a number of complementary activities which the Panel agreed further enhanced the effectiveness of the overall management of the student experience. For example, international students are provided with a programme of pre-induction activities and workshops to help them to integrate into the subject area community and the University more generally. This initiative is managed and led by a dedicated international students' tutor. A second example is the dedicated support available for students with individual learning needs.

33   All students entering a programme of study at any stage beyond stage 1 are interviewed by teaching staff during Week 1. To help identify any additional personal or subject specific learning needs students are invited to complete a self-diagnostic test. Groups of students articulating to a programme of study from a Scottish further education college are also provided with additional support through a structured programme of dialogue between subject and college staff prior to students matriculating.

34   The subject area operates a single staff student liaison committee for student representatives from all of its undergraduate and taught masters programmes of study. The Panel concurs with the subject area that this is an effective method for engaging students in the enhancement of their programmes as students from senior stages of study are able to provide peer support and encouragement to junior colleagues. The single staff student liaison committee for all taught provision was identified as a feature of good practice.

35   The subject area has developed a package of software to assist in the management of individual student progress and achievement. Students are able to access the tracker system through the virtual learning environment and those students who use the system indicated it was a valued tool in helping them to manage their learning.

36   The School has adopted a proactive and innovative approach to Week 1 induction activities for all years of undergraduate programmes of study. This included a programme of workshops with subject specific, pedagogic and general interest themes which students were invited to attend. This initiative proved extremely popular with students and the Panel commended the subject area in this regard.

37   The subject area acknowledged that its main effort in implementing the University's personal development tutor scheme is concentrated in the early years of undergraduate study. The Panel noted that the subject area intends to expand its existing scheme to all taught provision during the remainder of this and subsequent academic sessions. The Panel recommends that the subject area continues with this work so that identified personal development tutors are available to all students registered on a taught programme of study.

38   The subject area monitors student achievement and retention statistics as part of its enhancement activities. However, staff acknowledged their disappointment with current retention, completion and achievement statistics particularly for direct entry students. Discussions with staff indicated a variety of initiatives have been implemented with a view to addressing student retention concerns and the Panel recommends that staff continue to monitor student retention, progression and achievement statistics with a view to identifying any trends which might help to improve this quantitative data.

39   Students have access to learning laboratories and other learning resources outside normal working hours. This includes the 24-hour Jack Kilby Computing Centre and specialist computing laboratories within the School. Students appreciated and valued the extent of access provided.

The effectiveness of the subject's engagement with University-led initiatives
40   Subject area staff are active members of all University-level committees. The subject area has also contributed to all recent University review initiatives including the implementation of the 20-credit modular structure, the Consistency in Assessment Reviews, the Week 1 initiative and the change to the academic year initiative. The Panel noted during its scrutiny of the evidence base that the effectiveness of the subject area's engagement in University and sector-wide initiatives was demonstrated in that it was actively engaging with many of the consistency in assessment review outcomes prior to the start of that review. Further examples of the subject areas engagement with University initiatives are the effectiveness of its Week 1 induction events and its early and continuing involvement with the *Confident Futures* initiative.

41   The systematic and effective management of the move to a 20-credit modular structure provides further evidence of the subject area's engagement with University initiatives. However, the Panel noted that in its enthusiasm to ensure that its students were not disadvantaged by the move to the revised modular structure, the School overlooked an important principle approved by University Quality Committee to underpin the transition arrangements. The Panel recommends that in order to prevent the need for unnecessary remedial work in future projects the subject area ensures its internal communication mechanisms take account of University and faculty policy.

Summary

42   Students from all levels of study cited the positive and friendly atmosphere within the School of Computing as a key feature of their learning experience and the rapport between staff and students provides a supportive learning environment. Computing provision is available through a relevant and flexible curriculum which adequately equips students with the necessary skills and understanding to gain employment in the subject area. Computing provision is effectively managed by the School and the academic standards set continue to meet subject, University and sector expectations. Mechanisms are in place to ensure that the curriculum is relevant and current and influenced by research and professional interests of staff. The provision is delivered using a variety of relevant learning, teaching and assessment approaches and through innovative uses of technology. Work-based learning is a key feature of the undergraduate provision. A range of effective mechanism are in place to manage the student experience across all levels of computing provision in line with University expectations.

Provision included within the scope of the review

1   Undergraduate programmes.
   a)   Integrated Master in Science Computing
   b)   Bachelor of Engineering with honours Computing
   c)   Bachelor of Engineering with honours Software Engineering
   d)   Bachelor of Engineering with honours Internet Computing
   e)   Bachelor of Engineering with honours Computer Networks and Distributed Systems
   f)   Bachelor of Engineering with honours Computer Security and Forensics
   g)   Bachelor of Engineering with honours Mobile Computing
   h)   Bachelor of Engineering with honours Embedded Computer Systems
   i)   Bachelor of Engineering with honours Multimedia Systems
   j)   Bachelor of Science with honours Interactive Media Design
   k)   Bachelor of Science with honours Network Computing
   l)   Bachelor of Science with honours Multimedia Technology
   m)   Bachelor of Science with honours Business Information Systems
   n)   Bachelor of Science with honours Computing
   o)   Bachelor of Science with honours Computing: Digital Media
   p)   Bachelor of Science with honours Computing: Networking
   q)   Bachelor of Science with honours Information Technology
   r)   Certificate of Higher Education Computing
   s)   Certificate of Higher Education Information Technology

2   Taught masters programmes.
   a)   Master of Science Advanced Software Engineering
   b)   Master of Science Advanced Networking
   c)   Master of Science Applied Informatics
   d)   Master of Science Applied Networking
   e)   Master of Science Applied Software Engineering
   f)   Master of Science Business Information Technology
   g)   Master of Science Enterprise Web Development
   h)   Master of Science eLearning Design and Development
   i)   Master of Science Information Systems Development
   j)   Master of Science Information Services Management
   k)   Master of Science Information Systems Project Management
   l)   Master of Science Information Systems for Financial Services
   m)   Master of Science Interactive Systems: Usability
   n)   Master of Science Interactive Systems: User Experience
   o)   Master of Science Software Technology for the Web

School Enhancement Plan: School of Computing October 2009						
Good Practice	**Action to be taken**	**Target date**	**Action by**	**Success indicators**	**Reported to**	**Evaluation**
The rapport between staff and students is excellent and students greatly appreciate the personal interest and academic and personal support provided to them by all staff. The positive and friendly atmosphere within the School was cited as a distinctive feature of the computing subject area by students from all levels of study. (paragraph 12)	School staff are actively involved in Faculty, University and Academic Development staff development activities at which the School's ethos in terms of student contact and monitoring is disseminated. The School intends to exploit these good student relationships to better support formal processes such as SSLC, School Quality Committee, and professional body accreditation.	Ongoing	Head of School, Teaching Fellows, Directors of Quality and Student Experience	More active involvement of students in School Committees	School Executive	Experiential evidence of continued good staff-student rapport.
Module boxes provide a reference point for storing definitive and up-to-date information associated with the learning, teaching and assessment of each module and are a key feature of the management of computing provision at undergraduate and taught masters levels. (paragraph 17)	The School of Engineering and the Built Environment already use a similar scheme. The School of Arts and Creative Industries (SACI) is actively developing a similar scheme in response to our practice. The School will support colleagues in SACI in this work.	Session 2010-11.	Director of Quality, Assistant Faculty Manager (AFM).	SACI using module boxes.	Faculty Quality Committee.	n/a

Good Practice	Action to be taken	Target date	Action by	Success indicators	Reported to	Evaluation
The development and introduction of innovative and effective procedures for managing its Boards of Examiners including the use of technology to enable student information to be shared electronically during meetings. (paragraph 21)	The work to disseminate this practice has already begun. The School Director of Student Experience has participated in faculty programme leader training that included use of the School's "tracker" system that provides module and student performance data to inform board discussions. Staff from C&IT and Student affairs attended & observed School Module and Programme Board of Examiners.	Ongoing.	Directors of Student Experience and Quality, Assistant Faculty Manager (AFM), Head of School.	More widespread use of paperless boards of examiners and tracker system.	Faculty Quality Committee.	External Examiners' reports, Module and programme review reports.

Good Practice	Action to be taken	Target date	Action by	Success indicators	Reported to	Evaluation
The embedding of professionally accredited awards within approved modules demonstrates the subject area's commitment to providing students with a relevant and up-to-date learning experience which will enhance their career aspirations. (paragraph 22)	The School is refining its industry-based provision (Cisco certification) and is actively considering developing industry standard training as part of the co-curricular provision.	Session 2010-11.	Subject Group Leaders.	Approved co-curricular module(s).		Enrolments on any co-curricular modules developed in future.
	Within School of Computing (SOC) work is ongoing to ensure all British Computer Society (BCS) accreditations are carried forward to 20-credit provision.	October 2009.	Directors of Academic Development & Quality & Programme Leaders.	20-credit provision accredited.	School, Faculty & University Quality Committees (ALL).	Approved accreditation list.
	A further BCS accreditation visit will take place during calendar year 2011 to extend accreditation to the new programmes introduced for 20-credits and subsequently.	December 2011.	Director of Quality & Programme Leaders.	Accreditation awarded for new programmes.		
	Programme teams from the Creative Computing subject group (formerly MISD) are actively considering accreditation by Skillset (the sector skills council for the creative industries) for programmes outwith BCS scope.		Subject Group Leader & Programme Leaders.	Accreditation awarded for new programmes.		

Good Practice	Action to be taken	Target date	Action by	Success indicators	Reported to	Evaluation
The annual conference hosted by the School Learning, Teaching and Assessment Committee to discuss developments in pedagogic practice. (paragraph 24)	Session 2008-9 saw the extension of the conference to a faculty-wide event. Senior Teaching Fellow is convening School LTA committee and will co-ordinate activities to ensure continued innovation	Partially Completed, remainder ongoing.	School & Faculty LTA committee members.	Further School and Faculty conferences in subsequent sessions.	Already reported to Faculty LTA Committee.	Analysis of attendance at future conferences and feedback from attenders.
The innovative approaches to learning, teaching and assessment and the use of technology which are designed to engage students more effectively. (paragraph 25)	(See School Plan) Sections on retention, infrastructure and enhanced teaching quality	September 2010	Directors of Quality & Student Experience, School & Academic Development, Teaching Management Team (TMT)	Improved progression and retention rates. Positive feedback in student questionnaires and module and programme review. Increased Teaching Fellowships in School.	School, Faculty & University Quality & Learning, Teaching and Assessment Committees	Qualitative reporting in questionnaires and monitoring reports.
The provision of work-based learning across the undergraduate provision. (paragraph 27)	Already applies to all relevant undergraduate bachelor degrees. Some work ongoing to consider shorter placement opportunities for programmes in the Creative Computing suite and in integrated masters programmes.	Ongoing	n/a	n/a	n/a	n/a

Good Practice	Action to be taken	Target date	Action by	Success indicators	Reported to	Evaluation
The use of honours and research students to support students in earlier years of study as a means of engaging students in their learning and in involving students in enhancement activities. (paragraph 29)	Practice ongoing in most schools already. School recently used current international students to support international students over the summer vacation.	Ongoing	n/a	n/a	n/a	n/a
The single staff student liaison committee for student representatives from all of its undergraduate and taught masters programmes of study is an effective method for engaging students in the enhancement of their programmes as students from senior stages of study are able to provide peer support and encouragement to junior colleagues. (paragraph 34)	The School Continuing this practice this session. The single SSLC structure is not universally appropriate to SoC as discipline has high level of integration and consistency of across subject groups. Other schools have more discrete subject groups.	n/a	n/a	n/a	n/a	n/a
The innovative approach to Week 1 induction activities for all years of undergraduate programmes of study which includes a programme of workshops with subject specific, pedagogic and general interest themes which students were invited to attend. (paragraph 36)	The Director of Student Experience participated in the review of Week 1 to disseminate the workshop structure of week 1.	Ongoing for subsequent Weeks 1.	Teaching Teams, Programme Directors and Leaders, Director of Student Experience.	Better attendance at week 1 activities, especially in senior years.	School, Faculty and University LTA committees.	Quantitative data on uptake of week 1 activities. Qualitative feedback in student questionnaires.

Recommendations	Action to be taken	Target date	Action by	Success indicators	Reported to	Evaluation
reviews its policy on the provision of written feedback to ensure that this is consistently provided to all of its students in a typed format (paragraph 19)	(See School Plan) TMT to consider and rule on acceptable means of feedback.	Jan 2010	Teaching Management Team (TMT).	Improved feedback to students and student questionnaire responses.	TMT, School Quality Committee	Module and Programme Reviews.
continues to ensure that assessment briefs are used consistently across the subject area and that these contain clear and appropriate assessment criteria which are easily understood by students (paragraph 20)	(See School Plan) Already a formal requirement for all coursework in the School. The School was very actively involved in the Consistency in Assessment (CIA) initiative and with SEBE conducted training for academic and administrative staff.	Immediate.	Subject Group Leaders, Director of Quality .	Universal use of Assessment brief proformas.	TMT, School Quality Committee	Module and Programme Reviews. Checking of module boxes. External Examiners' comments.
continues to support the University-led work to introduce a version control system for its module descriptors to ensure that the most recent version and that the date of the changes made are clearly identifiable (paragraph 23)	Internally module and programme documentation is tightly version controlled. This issue is being dealt with outwith the School (at faulty and University level)	n/a	n/a	n/a	n/a	n/a

Recommendations	Action to be taken	Target date	Action by	Success indicators	Reported to	Evaluation
continues to engage with the University-level debate on internationalising the curriculum and contributes to this by exploring a clearer definition of the term which takes into account the notion of the subject discipline being international and the need to provide support for international students (paragraph 31)	The School has appointed an International Student Support Tutor who both works within the International student community in Scotland and also does overseas visits to our international partners. Staff have contributed to and attended University. workshops on Internationalisation – more staff need to be involved in this work	Ongoing	International Support Tutor, Director of Academic Development, Programme and Module Teams.	Improved student feedback from International Students.	School, Faculty and University LTA Committees.	Reading of Module and Programme annual reports and student questionnaires.
continues to expand its existing personal development tutor scheme to all taught provision during the remainder of this and subsequent academic sessions (paragraph 37)	The School has used the new Workload Allocation Model (WAM) to formally identify all staff involved in PDT activity, in particular giving WAM units to all responsible for 1 to1 student interviews. The "tracker" system has been enhanced to monitor PDT attendance.	Ongoing	Personal Development Tutors, Subject Group Leaders and Director of Student Experience.	Better uptake of 1 to 1 interviews especially in senior years.	TMT and School Executive	Analysis of Student Questionnaires and programme annual monitoring reports.
continues to monitor student retention, progression and achievement statistics with a view to identifying any trends which might help to improve this quantitative data (paragraph 38)	(See School Plan). School has Retention Working Group co-ordinated by Director of Student Experience	Ongoing	Director of Student Experience, Retention Team, Programme and Module Teams	Improved Retention Statistics	School Executive, Faculty & University through Annual Reports	Quantitative analysis of retention statistics and qualitative reporting in programme annual monitoring reports.