

UNIVERSITY OF GLASGOW

Academic Standards Committee – Summer Powers

Periodic Subject Review: Review of the School of Engineering held on 7 and 8 March 2019

Lesley Fielding, Clerk to the Review Panel

Review Panel:

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Dr Simon Kennedy	Senate Assessor on Court
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Dr Janis Davison	Learning Enhancement and Academic Development Service
Ms Lesley Fielding	Senate Office and Clerk to the Panel

1. Introduction

- 1.1 The School of Engineering is the largest School within the College of Science and Engineering and the last review was undertaken in 2013.
- 1.2 The School of Engineering has separate structures for research, five Research Divisions which are Aerospace Sciences; Biomedical Engineering; Electronics & Nanoscale Engineering, Infrastructure and Environment and Systems, Power and Energy. The Teaching Divisions are each led by a Head of Discipline (HoDisc) and are: Aerospace Engineering; Biomedical Engineering; Civil Engineering; Electronics and Electrical Engineering and Mechanical Engineering.
- 1.3. The School provides taught courses at both undergraduate (UG) and postgraduate (PGT) level. The School has a substantial Transnational National Education (TNE) provision. It delivers two undergraduate degrees in Chengdu, PR China jointly with the University of Electronic and Technology of China (UESTC). Both degrees are in Electronics. At the time of the review, there were 20 academics, 19 of whom are based in Glasgow and typically fly to Chengdu one week in every four. The School is also responsible for five undergraduate degrees in Singapore in Civil, Aerospace and Mechanical and Electronic Engineering. The teaching is undertaken by staff based in Singapore with Glasgow staff providing support to the Director of the University of Glasgow Singapore (UGS) in the QA of course material, delivery and assessment.
- 1.4 The teaching organisation of the School is overseen by the Convener of Learning & Teaching who ensures delivery of all taught programmes supported by the five Heads of Discipline and the Vice Dean of Glasgow College UESTC. In addition, a PGT convener oversees the integration of PGT programmes with the assistance of a separate PGT project coordinator.
- 1.5 In 2017-18, the School had approximately 1855 students on 13 UG and 16 PGT taught

degree programmes on the Glasgow campus, together with approximately 2010 students on campuses in China and Singapore. School-level teaching related activities are organised through the School's Teaching Office.

- 1.6 Preparation of the School of Engineering Self Evaluation Report (SER) was undertaken by a working group led by the Head of School, Professor David Cumming, with the five Heads of Discipline, the Convener of Learning & Teaching and with contributions from the Transnational Education staff in both China and Singapore. Wider staff consultation was undertaken, and specific Self Evaluation Report topics were shared with student representatives and the wider student body.
- 1.7 The Review Panel met with Professor David Cummings (Head of School), Professor Scott Roy (Convener of Learning and Teaching), Mrs Debbie Goldie (Head of School Administration), Professor John Davies (Dean of Learning & Teaching) and Professor Muffy Calder (Head of College), Professor John Marsh (Transnational Education Dean – China), Professor Imran Muhammad (Vice Dean, Glasgow College UESTC). The Review Panel also met with one Level 1 student, one Level 2 student, two Level 3 students, one Level 4 student and two Level 5 students, five PGT students, 18 academic staff, one technician, eight MPA staff, three GTAs, and seven Early Career Staff. At the TNE meetings, the Review Panel met with four UGS students, six UESTC students, four UGS staff and three UESTC staff.

2. Context and Strategy

2.1 Staff

Engineering has a total of 202 staff (192 FTE, of which 108 (103 FTE) are academic staff. 67 (65 FTE) are Technical and IT and 27 (24.8) Management, Professional and Admin (MPA) staff.

The student-staff ratio is 22.2:1 which is higher than the University and Russell Group averages.

2.2 Students

Student numbers for 2017-18 are summarised as follows:

Individuals enrolled on one or more courses at each level	Form of Study	
	class enrolment	visiting/erasmus/exchange
Level 1	430 + 506 (UESTC)	0
Level 2	432 + 452 (UESTC)	0
Levels 3, 4 and 5	857 + 496 (UGS) + 426 (UESTC)	Approx. 80
Postgraduate Taught	265	

2.3 Range of Provision under Review

2.3.1 Undergraduate Degrees

<i>Degree</i>	<i>Abbrv.</i>	<i>Discipline</i>	<i>Accreditation</i>	<i>Site</i>
Aeronautical Engineering	AE	Aero	IMechE, RAeS	Glasgow
Aeronautical Engineering (w. SIT)	AE(SIT)	Aero	IMechE, RAeS	S'pore
Aerospace Systems	AS	Aero	IET, RAeS	Glasgow
Aerospace Systems (w. SIT)	AS(SIT)	Aero	IET, RAeS	S'pore.
Biomedical Engineering	BME	BME	IET, IMechE, IoP	Glasgow
Civil Engineering	CE	Civil	ICE, IStructE, CIHT, IHE	Glasgow
Civil Engineering (joint w. SIT)	CE(SIT)	Civil	not yet accredited	S'pore
Civil Engineering with Architecture	CArch	Civil	ICE, IStructE, CIHT, IHE	Glasgow
Electronics & Software Engineering (joint with CS)	E&SE	E&EE	IET	Glasgow
Electronics & Electrical Engineering	E&EE	E&EE	IET	Glasgow
Electronics & Electrical Engineering (JEP w. UESTC)	E&EE (JEP)	E&EE	pending	Chengdu
E&EE with Communication (JEP with UESTC)	E&EE (Comm)	E&EE	pending	Chengdu
Electronics with Music (2/3 Engineering, 1/3 Music)	EMus	E&EE	IET	Glasgow
Mechanical Design Engineering	MDE	Mech	IED, IMechE	Glasgow
Mechanical Design Engineering (w. SIT)	MDE(SIT)	Mech	IED, IMechE	S'pore
Mechanical Engineering	ME	Mech	IMechE	Glasgow
Mechanical Engineering with Aeronautics	MEA	Mech	IMechE, RAeS	Glasgow
Mechatronics	MT	Mech	Pending	Glasgow
Mechatronics (w. SIT)	MT(SIT)	Mech	IMechE	S'pore
Product Design Engineering (with Glasgow School of Art)	PDE	Mech	IED, IMechE	Glasgow

2.3.2 Postgraduate Degrees

<i>Degree</i>	<i>Discipline</i>	<i>Accreditation</i>
Aerospace Engineering	Aero	
Aerospace Engineering & Management	Aero	
Biomedical Engineering	BME	IET, IPEM
Civil Engineering	Civil	ICE, IStructE, IHE, CIHT
Civil Engineering & Management	Civil	ICE, IStructE, IHE, CIHT
Computer Systems Engineering (Jnt CS)	E&EE	
Electronics & Electrical Engineering	E&EE	
Electronics & Electrical Engineering & Management	E&EE	
Electronics Manufacturing	E&EE	
Mechanical Engineering	Mech	IMechE
Mechanical Engineering & Management	Mech	
Mechatronics	Mech	
Nanoscience & Nanotechnology	E&EE	
Product Design Engineering	Mech	IMechE, IED
Structural Engineering	Civil	ICE, IStructE, IHE, CIHT
Sustainable Energy	E&EE	ICE, IStructE, IHE, CIHT, IMechE, IET

2.4 Strategic Approach to Enhancing Learning and Teaching

2.4.1 The Review Panel congratulated the School on its expansion of the Transnational Education (TNE) since the previous review with the establishment of a Joint Educational Programme with the University of Electronic Science and Technology of China (UESTC) in 2013 and the evolution of provision as the Singapore Institute of Technology moved from providing polytechnic courses as feeder programmes to external institutions to becoming a University in their own right, partnering with external institutions. This subject will be explored more fully at item 6.

2.4.2 From the Self Evaluation Report (SER), the Panel noted the School's clear strategic position which set out their future plans to be "At the forefront of engineering discovery, creation and practice, delivering international leadership in education, innovation and capability" (SER, p2). In exploring how the School intended to achieve the aims of their strategic vision it was explained that the intention was to build a foundation of core technical material, and the development of students' creativity and analytical thought; (particularly in years 1 and 2), through projects involving creation and demonstration.

2.4.3 The Panel **commends** the School's commitment to harmonisation which was reflected in the development of the Level 1 common curriculum which provided year 1 students with a common student foundation of mathematics and engineering physics. The School considered that the key elements of the common curriculum included the

engineering teaching threads of Design, Creativity and Project/Teamwork which were essential skills for engineering students. Harmonisation is further discussed under 4.1.1.

- 2.4.4 The Review Panel noted from the SER that fundamental to achieving their aims of being at the forefront of engineering was the provision of high quality, research-led teaching and learning. The Panel noted the statement that all academic staff were engaged in teaching, including those with heavy research commitments. The SER indicated that there would be an increase in student numbers from 2019/20 onwards as a result of new programmes, but it was unclear to the Panel how this was going to be supported in terms of staffing, both academic and administrative and in terms of physical capacity. The Panel was concerned to note that academic staff were currently at capacity in terms of workload and that staffing levels were not commensurate with the recent increase in PGT numbers.
- 2.4.5. With regard to technical staff the Panel noted that, as opposed to their previous focus which mainly provided support to research, the technicians now provided support to both teaching and research which created substantial demands on the team. The academic staff recognised the contribution of the technical staff and considered that the technicians' contribution enabled the School to teach the large number of students and was a crucially important feature of the School's learning and teaching resource. From their discussions with all staff and from the SER, the Review Panel considered that the School, while performing admirably, had very little room to manoeuvre and was operating at full capacity. The increase in programmes being offered and continued increased enrolment placed significant pressures on all staff. That a large number of staff are on PGCAP and have reduced teaching loads, together with a sizeable number of research staff, means that the teaching responsibilities are borne by a smaller contingent of staff than the SSR might otherwise indicate. The Review Panel concurs with this view and considers there is a further need, and indeed an opportunity, to review the traditional perception of the teaching team and the associated staffing requirements in order to support large classes, and to draw effectively on technical and learning technology skills. The Review Panel **recommends** that the School, with the support of the College, rethinks teaching support and potentially restructures the teaching teams for large classes. The review should include the role of technical staff, learning technologists and GTAs in order to optimise the School's resources and to alleviate the pressure on all staff.
- 2.4.6 From the staff survey and discussions with staff it was evident to the Panel that the vision held by the Executive Team was not fully understood and shared by all staff. Among staff there did not appear to be a clear understanding of the rationale of the strategy. The School had a committed Teaching and Learning team, however, the limited understanding of the School's aspiration for growth appeared to have impacted on morale. The Head of School's comment that the postgraduate growth was aligned to market demand was not widely understood by staff. There was an acknowledgement that there is a degree of complexity in ensuring that staff feel suitably involved in the decision-making process within the School, particularly over five disciplines. However, at the meetings with the Head of School and staff it was unclear as to how the whole School community was consulted in relation to learning and teaching strategy and what opportunity existed for contributing to the decision making. The Review Panel **recommends** that the School reviews communication, engagement and involvement of staff to ensure all staff are actively involved in the developments in relation to strategy and engage effectively with opportunities to contribute to strategy and teaching developments in an open and transparent environment.

3. Enhancing the Student Experience

3.1. Admissions, Retention and Success

Admissions

- 3.1.1 The School has a dedicated Student Recruitment and Communications Officer together with MPA staff working from the School Office. The Undergraduate Recruitment Committee coordinates recruitment and there is a Recruitment Officer and an academic School Admissions Officer. The Panel was impressed with this provision. The Panel was pleased to note that the School provided students with pre-arrival packs which contained a sample lecture and sample maths problems. From feedback received from students concerning enrolment, the School had introduced block enrolment with information on individual components provided to students.
- 3.1.2 From the SER, the Review Panel noted that there had been a substantial increase in both UG and PGT numbers including 1560 FTE students on 19 undergraduate (UG) and 17 postgraduate taught (PGT) degree programmes in Glasgow together with approximately 300 students in Singapore in 2013 to 2059 FTE students on 20 UG and 16 PGT programmes in 2018-19. The main growth in Glasgow had been in the recruitment of international MSc students. From the meeting with the Head of School, the Panel considered that, although additional staff had been appointed, there was a mismatch between the PGT portfolio and staff expertise. In exploring this issue further, the Panel noted there were a number of PGT courses with small student numbers. At the final meeting, which included the Convener of Learning and Teaching, the Panel was advised that the intention of the portfolio was to protect the School from the potential impact of market forces, particularly with regard to the international market. The Head of School advised that no new programmes were introduced until there was evidence that it would have minimal impact on the teaching load. Nevertheless, the Review Panel would encourage the School to continue the review of provision in view of the current pressures on teaching.

The School participated in several initiatives that aimed to widen participation among non-traditional groups including the Headstart initiative and the Widening Access¹ Summer Schools (organised by the University and free for students from MD40), with successful completion giving an adjusted entry tariff for 40 students per annum. In addition, the Panel noted that the School was in discussion with the City of Glasgow College regarding a possible articulation agreement which was considered a positive development. The Panel welcomed the School's commitment to widening participation.

- 3.1.3 From the meeting with staff, the Panel noted that that managing expectations of students presented a challenge to the School. Staff considered that many students arrived unprepared for the learning environment of the University. The School had deliberated on this and found there to be a mismatch of expectations of students prior to enrolment. Those postgraduate students with experience of UK Higher Education Institutions adapted more easily to postgraduate study than those students who were studying in the UK for the first time. As noted in 3.1.1, the Panel welcomed the provision of pre-arrival packs and suggests that it may be helpful to supplement these packs for international students and those students unfamiliar with the UK Higher Education System with further advice to effectively manage students' expectations, highlighting the different learning and environment and challenges that University presented.

Retention

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- 3.1.4 The Review Panel noted that, while progression rates in Year 1 had improved, the figure of 18% dropout was still high. From discussions with staff, the Panel noted that the common curriculum was considered to have been a contributory factor in the improved progression rates as it enabled students to experience the full range of disciplines and to amend their original choice, if necessary. Staff expressed concern regarding retention, particularly for widening participation students, who tended to be more at risk of withdrawing. However, staff advised that there was substantial provision for widening participation students but there was no capacity to increase this level of support. While it was acknowledged that students could choose not to pursue a degree in engineering, there were concerns that some students faced substantial challenges in coping with their studies. The Review Panel was concerned about the high dropout rate, and whilst recognising the challenges, **recommends** that further consideration be given to the contributory factors and the potential solutions. Specifically, the Panel recommends that the School work closely with Planning and Business Intelligence to undertake an analysis of retention, progression and continuation for Levels 1 and 2 of the kind recently undertaken in Computing Science.
- 3.1.5 It was acknowledged that Maths presented a substantial challenge to students however this had been offset by the excellent and increasingly embedded support provided to students by Ms Shazia Ahmed from LEADS. Both staff and students were generous in their praise of Ms Ahmed's work. The Review Panel **commends** the embedded LEADS Maths support in the School.

Progression

- 3.1.6 In considering other contributing factors impacting on progression, the Panel noted the tradition for assessment methods to be predominantly examination based. This is discussed further at 4.2.2.

3.2 Equality and Diversity

The Review Panel noted from the SER that the School held an Athena Swan Bronze award and intended to apply for a Silver Award in November 2019 to increase female representation throughout the School. The Panel acknowledged that gender imbalance was common within engineering across the UK and was challenging to address but was pleased to note the improvements in female representation since the last PSR in 2013. In particular, the disciplines of Biomedical Engineering (50%), Product Design Engineering (~40%) and Civil Engineering with Architecture (~40%). UESTC also had a higher cohort of female students. There were continued challenges with regard to the gender balance in Electronic and Electrical Engineering despite increased enrolment of European female students. The Panel noted the prominent role of the School societies in raising awareness including the FemEng and WiSTEM. The Panel acknowledged that the School had a higher percentage of female students in comparison to other HEIs. However, the Panel considered that the School was not unique with regard to gender imbalance within the University and that other subjects, with similar challenges, had assumed a more proactive approach. The Review Panel **recommends** that, in addition to the current practices, the School should review the marketing of the programmes, including the School website, to present a more contemporary and inclusive image. The School could compare the current website with those of other institutions, such as the University of Bristol and advice should be sought from External Relations and the Equality and Diversity Unit in the first instance, but potentially also from the School of Physics and Astronomy which has a Silver Athena Swan award, and where a range of initiatives have been undertaken as part of the University's Gender Action Plan.

3.3 Supporting Students in their Learning

- 3.3.1 At the meeting with undergraduate students, the Review Panel noted the students' general satisfaction with the level of support provided by the School. The Panel explored the students' experience of large classes and how they managed to integrate with their peers. The students found the large classes daunting but acknowledged that events such as the induction day, with subject classes and lab work, were helpful. However, the students considered that the most successful routes to making friendships were through the Engineering Society and Freshers' Week. The postgraduate students advised of some difficulties regarding module selection, but this had been resolved with the assistance of the Teaching Office.

Advisory System

- 3.3.2 The Review Panel noted from the SER and staff meetings the Advisory System process for alerting Advisers to students' poor performance by the Teaching Office. The Teaching Office provided Advisers with a list of exam results of their advisees following the December diet which enabled Advisers to contact those students who failed to meet the progression requirements in order to discuss their performance. In addition, the Teaching Office checked each MSc student's MyCampus records against several common advising problems to trigger Advisers to contact such students. The Review Panel considered the advising system to be an impressive organisation and **commends** the School for developing this process.
- 3.3.3 While the Review Panel commended the Advisory System processes for alerting Advisers to those students who were struggling via the Teaching office, it was noted that both undergraduate and postgraduate students were not necessarily as aware of the provision as the School believed. The undergraduate students had commented that, apart from a meeting in first year, they often had no other contact with their Adviser throughout their time at University. However, the students were aware that they could contact their Advisers in the event of difficulties. The Review Panel **recommends** that the School works with the student body to enhance visibility of the formal elements of, and improve engagement with, the Advisory System and in particular, the first meeting with Advisers of Studies in order to identify those students who may need to withdraw or transfer at an early stage.

3.4 Student Engagement

Feedback Mechanisms

- 3.4.1 The Review Panel noted from the SER, the Student Staff Liaison Committee (SSLC) process whereby the topics were collected in advance of each SSLC by the Learning and Teaching Office and forwarded to individual course coordinators, who would respond prior to the meeting. Additional issues raised at the SSLC were forwarded to course coordinators and the responses and actions minuted by administrative staff. The Head of Discipline would respond to any SSLC actions which had not been resolved. However, further to discussions with UG and PGT students, there appeared to be some variation in the process with the feedback loop not always closed. There was also perceived variations in practice between the different disciplines. The students were not aware that the Head of Discipline was responsible for feedback and were under the impression that, if an academic disagreed with the action/suggestion, there would be no action and the student would be obligated to make a complaint. The students advised that, generally, one or two staff members attended the SSLCs. The students considered the timing of the first SSLC meetings during week 6 to be too early for students to have identified issues of concern. Class Reps commented that there was a lack of awareness among the general student population of the My Class Rep system and website which presented challenges for class reps in communicating updates to students. The Panel noted the valuable foundations of the SSLC process however it was evident that the system required to be modified to ensure more

transparency to students in term of operation and feedback. The Review Panel **recommends** that the School review the SSLC process in consultation with the SRC Sabbatical Officers/President to ensure sufficient dialogue and feedback between staff and students and to engage the wider student population in the process.

Course Evaluation

- 3.4.2 The Review Panel noted from the SER that informal methods of obtaining important feedback from students were effective during or after lectures and events such as the 'beer and pizza' sessions.
- 3.4.3 The Panel explored the poor response rates of online course evaluation with the students. At the meeting with students, it was confirmed that staff responded informally to student feedback via email. However, there were no student summary response documents to course evaluation questionnaires, a requirement of the University's Course Evaluation policy. The Review Panel **recommends** that the Subject provides summary response documents to course evaluation questionnaires and that these are placed on course Moodle pages as well as provided to SSLCs.

4. Enhancing the Student Experience

4.1 Learning and Teaching

Curriculum Design

- 4.1.1 The Review Panel considered that the work on harmonisation had produced positive results, particularly the common curriculum. The undergraduate students expressed their appreciation of the common curriculum in Year 1. The students recognised the value of this method of teaching and considered the benefits included learning the language of each other's speciality which was hugely beneficial when they interacted with these students in Years 3 and 4. The Review Panel **commends** the School for the work undertaken to ensure the success of the common curriculum.

Work-based Placements

- 4.1.2 The Review Panel noted, from the SER, the opportunity for MEng students to undertake an individual project within industry during their final year. The range of industrial organisation was impressive, and the Review Panel considers this to be an example of good practice in relation to Graduate Attributes and employability.

Approach to Intended Learning Outcomes

- 4.1.3 The Review Panel noted that the Intended Learning Outcomes (ILOs) were influenced by regular accreditation visits and were regularly reviewed. From the documentation, the Panel was confident that the ILOs were explicitly outlined in all programme specifications and was satisfied that these were appropriate.

Technology Enhanced Learning and Teaching

- 4.1.4 The SER referred to the use of various innovative teaching techniques including online provision, flipped classrooms and automated assessment. Although the Review Panel did not entirely agree that the examples provided were innovative *per se*, due to their implementation throughout the University for a number of years, it nonetheless recognised them as beneficial enhancements to practice and recognised the commitment to these approaches from the staff involved. Staff indicated that adoption of Technology Enhanced Learning and Teaching (TELT) is largely a function of the intentions of individual staff members rather than a response to a holistic view of TELT across the programmes. The Panel explored how, in view of the pressure on staff time teaching large classes, the School continued to evolve and enhance its approach to teaching and assessment exploiting the use of technology. The use of Teleforms

(optical scanning software) was given as an example which had improved efficiency in exam marking in Years 1 and 2 from the point of view of academic workload and turnaround. However, the Panel also noted this was a labour-intensive process that required substantial administrative support given the size of the student population and prominence of exams as an assessment strategy. As discussed at 2.4.5, this could be included in a review of the teaching team for large pre-honours courses. The undergraduate students mentioned the use of YACRS and advised that, while this did engage students, there was no consistency in its use throughout the School and they would welcome further use where appropriate.

Study Abroad

4.1.5 The Review Panel noted from the SER that the School's degree programmes were structured to enable students to undertake study away from Glasgow. In the full-time final year project during semester 1, 37 out of the 57 industrial MEng placements were taken outside the UK. The Review Panel **commends** the School for enabling a substantial number of students to undertake their industrial placement outwith the UK.

4.2 Assessment and Feedback

4.2.1 The Review Panel noted, from the SER, that assessment varied from 100% examinations through to 100% coursework / project work. This was confirmed at the Panel's meetings with staff and students. The Panel acknowledged the constraints of the Accreditation Bodies requiring the School to assess by traditional methods. However, the Review Panel considered that the current form of assessment presented a number of challenges to students, particularly in Year 1, which was thought to be impacting on progression rates. The Panel noted that most elements which contained mathematics were assessed by traditional methods, however, there had been more formative assessment introduced with regards the teaching of first year Maths which had resulted in a substantial improvement.

4.2.2 The students expressed concern that where assessment was 100% exam based, the students were vulnerable to having an "off day" which could result in a poor performance and impact on their overall attainment. In discussion with staff, attention was drawn to the recurring poor performance by first year students in the December diet of examinations. Staff considered that this was, in part, attributable to timing as many students had not settled fully into their course and were not adequately prepared for examinations. Staff advised that, conversely, weaker students' performance had often improved by the second semester examination. The Panel explored adjusting the weighting of exams and course work, however, staff considered that, in view of the large class sizes, this would impact on staff time and workload. There were justified concerns that the current system disadvantaged some students in fulfilling their potential, therefore, the Review Panel **recommends** that the School review the current first year assessment design and identifies ways to increase the level of formative assessment as well as reduce the reliance on high stakes assessments, subject to remaining within the constraints of accreditation.

4.2.3 As noted in 4.2.1, the Review Panel acknowledged the importance of the requirements of the accreditation bodies which can sometimes limit, or be thought to limit, the School's assessment options. The Panel considered that it would be advantageous for the School's academic staff to take a more proactive role within the accreditation process. The Review Panel **recommends** that the School encourage and assist staff to assume active roles within the accreditation bodies to contribute and influence future policy and accreditation requirements in relation to teaching and assessment in Engineering.

Feedback on Assessment

4.2.4 The Review Panel noted, from the SER, the School's development of an Assessment and Feedback Calendar which provided details of the date of issue of all coursework

components, including assessment of courses and the date at which feedback would be provided to students. It was the School's intention that the Calendar would alert students to their workload for the year and to enable them to plan accordingly. Surprisingly, the students were less aware of the Assessment and Feedback Calendar than the Panel expected, and students advised it was not always clear when feedback would be returned. The Review Panel suggests that the School reiterate the availability and purpose of the Assessment and Feedback Calendar to students at the beginning of the teaching year.

- 4.2.5 The Panel noted the pressure on staff with regard to marking reports and lab books and the subsequent pressure to meet feedback dates. The staff advised that it was not possible to meet the feedback dates and that students were made aware of this. The Panel enquired whether GTAs were used for marking but noted that GTAs worked with Levels 1-4 on a demonstration basis only and did not undertake any marking. In view of the pressure on staff to meet their marking obligations, the Review Panel **recommends** that the School should consider using GTAs for marking at pre-Honours, and possibly Honours level where appropriate, with suitable levels of training, supervision and support.

4.3 Resources for Learning and Teaching (staffing and physical)

Learning and Teaching Space

- 4.3.1 The Review Panel noted, from the SER, the number of changes to the learning and teaching space since the last PSR. In 2017 a Creativity 'Lab' in James Watt South was established containing staff offices, a small meeting room, flexible teaching space with clustered tables and large screen displays. It was noted that the School had lost 18.5% of their meeting room capacity, however, with further developments including a new online School room booking system and the flexibility of the Creativity 'Lab', the students appeared to be satisfied with the meeting accommodation available. The five postgraduate students the Panel met with, confirmed they were satisfied with the facilities and resources available to them within the University. Nevertheless, due to a combination of increased student numbers and the multi-purpose nature of labs, the School had experienced challenges in providing adequate lab accommodation, confirmed by the postgraduate students who commented that there was insufficient lab accommodation. From the SER and the meeting with the Head of School, the Panel noted that there were plans for a new engineering building, however, the first phase would not commence for two or three years. The Panel appreciated the difficulties that securing additional lab accommodation presented but noted the importance of the allocation of appropriate resources to support the School in terms of space due to their sustained and continuous growth. The Panel is hopeful that the University capital plan will address these individual cases.

4.3.2 *Staffing*

The Review Panel noted, from the SER, that adequate staffing was a substantial issue for the School due to the growth in student numbers. Staff departures in specialised areas also made degree programmes vulnerable, such as Civil and Aerospace Engineering, with staff covering additional teaching at relatively short notice. In order to cope with sudden staff departures, the School was obliged to rely on short-term appointments to bridge the teaching gap. This is discussed under item 2.4.5. From discussions with staff, it was confirmed that the processes involved with succession planning and recruitment processes were a significant hindrance. The staff identified the need for these processes to be reviewed in order to streamline the recruitment process to enable staff members to be replaced before demitting office. The impact of the current system resulted in substantial staffing shortages with detrimental effects on staff during the remainder of the session. The Review Panel **recommends** that the College review the staffing and recruitment practices with the School to identify ways

to improve the process and reduce the impact on existing staff. There may also be the opportunity to feed into the World Changing Glasgow project on recruitment.

4.4 Engaging and Supporting Staff

4.4.1 The Review Panel explored the workload tensions between fulfilling teaching and research obligations with staff. The Panel was advised that there were substantial all year-round pressures due to teaching becoming a twelve-month activity, in contrast to previous practice, whereby research could be undertaken during the summer. The staff outlined some of their commitments during the summer period which included project supervision, (336 MSc students to be supervised among 80 staff), three summer schools contemporaneously (3 or 5 week, UESTC), 4 widening access (1x1 week + 1 x 4 weeks, local and England, overlapping and then 2 x Headstart x 1 week, contemporaneous. The Panel sympathised with staff and considered this should be considered as part of the recommendation under 2.4.5.

Graduate Teaching Assistants

4.4.2 The Review Panel noted that the GTA survey was very positive with the majority of GTAs expressing satisfaction. However, at the meeting with the GTAs, some of the views expressed ran counter to the survey results. The Panel's impression was that there was variable oversight of GTA input by the course coordinators which in some cases led to confusion and pressure. As the Review Panel only met with a small number of GTAs it was difficult to establish a broader picture of their experience. However, from discussions, the Panel noted that, outwith the LEADS training, there was no co-ordinated School GTA training. The Review Panel **recommends** that the School review the oversight and training of GTAs to ensure that more consistency in the GTA experience and consult with LEADS for guidance and advice on GTA training.

4.4.3 There was some uncertainty as to how involved GTAs can be in marking at different levels and the current University policy was considered to be unclear on certain aspects of GTA marking. The Dean of Learning and Teaching expressed a willingness to work with Academic Services to clarify current policy documentation.

4.4.4 The SER stated that in session 2017-18 there were 8500 hours of laboratory demonstrating, from 112 PhD students (out of a possible cohort of 291) and that the School had developed a policy where PhD students were expected to help in demonstrating by default. Further to discussions with the Head of School, the Panel established that, while GTA participation was essential, the School would aim for a more uniform distribution of load and identify more GTAs who would be suited to lab work. This would be included as part of the review recommended under 4.2.6 and 4.4.2 above.

Early Career support

4.4.5 The Panel met with seven early career staff who advised the Panel that they had freedom in relation to teaching style and liked the block teaching (two lectures and one laboratory) but would welcome guidance on best practice on teaching and assessment during the early stages of teaching from more senior and experienced colleagues. The staff indicated that they were supported by their mentors and the School. Two of the early career staff who met with the Panel were involved with TNE which included one week of teaching at UGS.

4.4.6 Early career staff commented to the Panel that it would be useful to have a School induction handbook and an annual calendar of events. The Head of School advised that there was such a handbook which included these headings together with a checklist and was available on the web. In view of the uneven awareness of the handbook, the Review Panel **recommends** that the School seeks input from Early Career Staff on the contents and the dissemination of the information.

4.4.7 There was a sense of some dissatisfaction with certain aspects the PGCAP. Some ECDP staff did not see its relevance to Engineering, particularly in view of the specialised and scientific nature of Engineering teaching. Others commented that it did not address the issue of large-scale teaching which is particularly pertinent in Engineering. Concern was also expressed that PGCAP assessment required too much commitment, was too time consuming and was not always as relevant to practice as it might be. They felt that feedback from senior/experienced colleagues on participants' teaching practices would be more beneficial as their focus was improving teaching and assessment practices at this early stage in their teaching. The Early Career staff appreciated the role of peer review and mentors and the Panel considered it would be helpful if peer review could become a more prominent feature of the PGCAP although recognises that this would need to be consulted on with the wider cohort of PGCAP participants. This aspect of the report does not lend itself readily to specific recommendations, especially recommendations relating to the School or College. Therefore, the Panel **recommends** that the PSR Convenor raises the ECDP and PGCAP feedback with the University's ECDP Lead (Prof Murray Pittock) and with the Director of LEADS in order that the feedback is acted on appropriately through the ECDP Champions in the Colleges and other appropriate ECDP committees as part of the wider governance of the ECDP programme. The Panel also **recommends** that the review of PSR that is currently underway within Academic Services, gives consideration to how issues relating to broader University initiatives (such as ECDP), but that don't lend themselves to specific recommendations that ASC might follow up on, could be more meaningfully recorded and addressed in future.

Teaching Office

4.4.8 The Review Panel noted the high level of engagement and support provided by the Teaching Office as detailed at the meeting with students and staff. The Teaching Office team were involved in a wide range of duties ranging from assisting and supporting staff and students to labour intensive and time-consuming procedures such as resolving time table clashes, supporting the advisory system and processing examination papers from China. The Review Panel was most impressed with the work of the Teaching Office staff. They had developed innovative practices while providing an excellent level of support to both students and staff. The Panel **commends** the Teaching Office staff for the level of support and assistance provided to both students and staff. The Teaching Office expressed considerable appreciation of the support from the School's IT section and acknowledged that much of the process improvement within the office had depended on the IT team developing bespoke solutions. The Teaching Office Team asked that the report acknowledge this level of service and support, and the dependence on input from the IT section.

4.4.9 The Review Panel considered the scanning and printing of examination papers from UESTC to be time consuming and in view of the technology available, potentially obsolete. However, the Panel has since learned that the mathematical nature of the papers is such that technological solutions are not readily available and that there are limited alternatives to the current approach. The Review Panel **recommends** that the School review the current processes with a view to identifying a more efficient and streamlined process if possible, to alleviate the pressure on the Teaching Office and to free staff time for other processes. The Review Panel acknowledges that opportunities for streamlining may be limited in the absence of improved online assessment of mathematical subjects and **recommends** that the issue is raised with the Chair of the Assessment and Feedback Transformation Project, Professor Frank Coton, to include within considerations of online assessment.

- 4.4.10 The staff advised that several essential processes required by the University presented challenges. These included the Tier 4 monitoring system for students and GTA recruitment. The staff indicated that although they believe their approaches to be robust, they were aware that each School has developed individual solutions with no means of sharing expertise. The team considered that as the processes and challenges in managing them were not unique to the School of Engineering, and rely on specialised knowledge, that it would be beneficial to approach them more centrally and consistently across the University. The Panel **recommends** that guidance on best practice in these matters be explored with College of Science and Engineering HR, and with the Central Services HR.
- 4.4.11 The Panel noted the crucial role undertaken by Dr Karen McIlvaney, Senior Administrator, within the Teaching Office. The Panel was pleased to note that the School was treating Dr McIlvaney's forthcoming retirement as a priority and that discussions were being held about identifying a successor. In view of the level of support provided by the Teaching Office and their pivotal role in relation to much of the School administrative processes, the Review Panel **recommends** that the support for the Teaching Office is reviewed to continue to streamline unnecessary processes and alleviate pressures where possible taking into account the role played by the IT team.

5. Academic Standards

- 5.1 The Review Panel considered that the School had a variety of robust and effective procedures in place which ensure that the School is engaged in a continual process of self-reflection and self-evaluation with regard to academic and pedagogical practice.

Currency and Validity of Programmes

- 5.2 The Panel, guided by the views of the External Subject Specialist, confirmed that, at the time of the Review, the programmes offered by the School of Engineering were current and valid in the light of developing knowledge and practice within the subject area.

6. Collaborative provision

6.1 Key features of the School/Subject's context and vision in relation to Collaborative provision

- 6.1.1 As noted at 2.4, there have been significant changes to the School's TNE provision since the last PSR. From discussions with the Head of School and staff, the Review Panel noted the work and organisation that was required to support this substantial and admirable endeavour. The Panel met with staff and students from UGS and UESTC institutions via teleconference and was extremely impressed by the level of enthusiasm and engagement displayed by all participants. The Panel would have valued more time with the TNE staff and students and, therefore, the Review Panel **recommends** that, in future, Student and Academic Services and the School, give consideration to whether the Engineering TNE activity is reviewed separately or that the review visit is extended. The Panel acknowledges there is a trade-off between considering the School holistically and giving due attention to TNE but certainly given the scale of endeavour, there is a need for further time to explore and acknowledge in full, the TNE activity in the future.

6.2 *Learning and Teaching Enhancement in UGS and UESTC*

The Review Panel held discussions with students and staff from both the University of Glasgow Singapore (UGS) and UESTC via teleconference and the discussions are outlined below.

UGS

- 6.2.1 The students reported that, overall, they were satisfied with their experience to date. The students used the University of Glasgow website and found the course handbooks provided a clear descriptor of what to expect from the course. Through discussion of the various courses, the students reported they found the Aerospace Engineering content rather dry and lacking in practical tasks and resources. Students on the Civil Engineering course commented that the material was similar to that of other courses. The students would welcome additional laboratories. The students were generally satisfied with the lectures, although it was noted that the local lecturers and UGS staff had differing styles and the delivery of some lectures were too fast for some students to follow. Students had access to lecture notes as a supplement to the lecture and found these beneficial. There was an issue with regard to one lecturer not uploading lecture notes to Moodle which required students to reuse old material and it was also noted that past papers were not available. The Review Panel **recommends** that there is a general review of the curriculum and teaching approach to address the issues identified in relation to overlapping content, opportunities for more interactive teaching and students' understanding of the material on an ongoing and formative basis.
- 6.2.2 From discussion with UGS staff, as part of a University's Learning and Teaching Development Fund project on effective online learning design, staff had experimented with blended learning and active learning activities. As a result, there had been an increased use of interactive lectures, with students answering questions via their mobile phones. This had proven popular with the students due to anonymous participation encouraging students to ask questions during lectures. As part of the University's Learning and Teaching Development Fund on effective online learning design, the staff had created/experiments with blended learning and active learning activities. The Panel noted the increased use of interactive lectures with students answering questions via their mobile phones which was more popular with the students due to anonymous participation. The Panel noted the variety of assessment including groupwork, presentation, projects and research development. The UGS staff advised that, with regard to innovation, the aim was to align the material and approach with Glasgow but that it was necessary to contextualise this locally.

Student Experience

- 6.2.3 From discussion with UGS students, the Panel noted the good Staff Student Ratio, with 80 students in each cohort who were split into four groups. The Panel learned that, although the students enjoyed their visit to the Glasgow campus, students considered it too short and therefore felt more of an affiliation with the Singapore campus. In order to encourage a greater sense of inclusion for the UGS students, the Review Panel suggests that the School review the timing of the UGS students' visit and whether it would be possible to prolong their visit to one or two semesters but acknowledges that the scope for this could be limited for a range of reasons. Alternatively, or in addition, joint on-line activity between UGS and the UoG campus students could be considered.

Feedback

- 6.2.4 The SIT students were most satisfied with the Class Rep system. Each semester, Class Reps met with lecturers and discussed issues raised by the students. All Class Reps' names and contact details were listed for students to access. The students preferred to discuss issues with Class Reps rather than raising them directly with staff. However, the Panel noted that all students were encouraged to communicate directly with lecturers and there had been some improvement to date. The Review Panel was impressed with the effective implementation of the class rep system and the students' commitment to this role.

Course Evaluation

6.2.5 The Panel noted that Civil Engineering sought evaluation of their courses at the end of semesters and the students were aware that the changes would not have an impact on the current cohort but on the next. Students commented that they did seek feedback but, sometimes, there would be no explanation as to why an issue could not be resolved. Staff at the Singapore campus should be reminded to provide feedback to students, including a statement as to why action has or could not be undertaken.

Staff

6.2.6 Due to the geographical and time zone difference, the UGS staff reported that there was not a strong sense of connection to the Glasgow campus, although it was stronger for those staff who had visited the Glasgow campus. The Panel was advised that the requirement for a PGR supervisor to be Glasgow-based presented some challenges to new staff who were less familiar with staff based at Glasgow. The Panel determined from staff that research teaching and collaboration with Glasgow was important and highly valued and that the staff would like to have a more interactive relationship. The Panel had the sense that the Glasgow campus was less engaged regarding collaboration and that initiatives for PhD scholarships and grant applications, were driven mainly by UGS. At the final meeting with the Head of College and Head of School they advised that attention had to be given to ensuring a balance of ownership and opportunity and that each institution is in a position where they are enabled to be pro-active.

6.2.7 The Panel noted that the Early Career staff considered the LEADS online PGCAP to be very good. The staff could view all the material and were able to participate in on-line discussions. While, they were unable to participate in the Glasgow sessions as they were not synchronised, they advised that the staff in LEADS were very accommodating. The Panel noted that the Early Career staff would meet with the LEADS staff when they accompanied students to Glasgow in June.

UESTC

6.3 The students advised the Review Panel that they enjoyed the overall experience at UESTC particularly the English teaching, self-directed learning and the interaction with students from other countries. However, the Panel noted that, similar to UGS, the students did not feel part of the wider University of Glasgow community with interaction limited to visiting students from Glasgow. The Panel noted that although there is an existing link to the UESTC site, the students were unaware of this as it was very difficult to locate which served to reinforce this sense of disconnect for the students. To address this, the Review Panel **recommends** that the School promote their international partners more prominently.

6.3.1 While the students found no differences between the UESTC and Glasgow staff lectures, they advised there was a noticeable difference in the marking. The students found that the Glasgow staff generally awarded higher marks than the UESTC staff with one student commenting that the marks from the Glasgow staff were “amazing”. The sense among the students was that the Glasgow marking was more reflective of their performance but advised that they had not been informed of the grading criteria, receiving only a final mark with no breakdown of how this was achieved. As such, they considered more transparency was required in the marking across the two sets of staff. The Review Panel **recommends** that a review of the marking process be undertaken to ensure consistency of approach in terms of explaining the grading criteria when providing feedback on assessment.

6.3.2 The students advised that that their interaction was predominantly with UESTC staff but that they would welcome increased interaction with Glasgow staff. It was noted that although students could meet with staff during office hours, the students preferred to communicate via email or Moodle with their lecturers. The students acknowledged

this was partly a cultural preference but that usually by the final years, students were more confident to go to the office to seek advice.

Staff

- 6.3.3 In the meeting with the Glasgow teaching staff, the Panel noted that the fly in/out model used at UESTC was demanding. However, this was offset by the time available upon their return to Glasgow to undertake research. The staff also welcomed the ECDP support, discipline meetings and the option to attend the School's Learning and Teaching day. The Panel noted that whilst the Glasgow staff did not teach when back in Glasgow, they were expected to be involved in the examination process.
- 6.3.4 The Review Panel explored the level of administrative support that the current assessment system required. The staff acknowledged the considerable support provided by the Teaching Office staff, particularly the large amount of assessment that the Teaching Office staff dealt with on an ongoing basis. The Panel noted that the UESTC had a multiple resit system which was not compatible with MyCampus and was an onerous task for administrative staff. The level of administrative support that the UESTC assessment required was discussed further at 4.4.8.
- 6.3.5 The students reported some issues regarding the GTAs who conducted the labs. The students considered that the GTAs were not fully informed and that there was a need for increased training for the GTAs.

6.4 Overview

- 6.4.1 As stated previously, the Review Panel was most impressed with the work of the School and both the TNE institutions and acknowledged the positive impact this arrangement had on the School's reputation and **commends** the School on this achievement. However, the Panel noted that the collaboration was not always seen as part of the core School activity or as part of the wider university (see 6.2.6). The Panel identified a need for cohesion to address the tendency for a one-sided relationship that was evident to an extent for both TNE institutions during the review. The Panel noted that the proposals for collaboration were typically initiated by the TNE partners and not the School or that was at least the perception. Given the maturity of the TNE relationships at this point, the Review Panel **recommends** that the School takes the opportunity to explore with its TNE partners how to reprofile this activity so as to incorporate TNE more prominently, recognising its importance as part of the School's strategic contribution to research and teaching, and considers how to strengthen partnerships around research and teaching initiatives.
- 6.4.2 Also highlighted was the need for wider awareness of the international nature of TNE in relation to representation within University discussions such as at Learning and Teaching Committees, the Student Experience Committee and in University Services discussions concerning support for learning, teaching and research. Limited awareness was evident in terms of the lack of recognition that key dates and holidays for the University were not necessarily relevant to the TNE institutions. This was highlighted regarding IT support during the Christmas vacation given Christmas is not a holiday in either China or Singapore. These differences can be impactful when there are assignment submissions over the Christmas period but no corresponding Moodle or IT support. The Review Panel **recommends** that the University review the support models for the TNE students and staff to recognise the different requirements of these institutions to Glasgow and to ensure that these requirements are understood and met. Additionally, the Review Panel recommends that the School review how to achieve wider awareness of TNE partners through representation at key School committees.

7. Summary of perceived strengths and areas for improvement

7.1 Key strengths

The Review Panel identified the following areas as key strengths:

- Clear strategic vision of the School management and sense of growth
- Improvements made to the curriculum and positive impact made to retention and progression by the introduction of a common First Year
- The introduction of more specialist programmes
- TNE provision and commitment and enthusiasm of both staff and students based at University of Glasgow Singapore and Glasgow College UESTC
- The Teaching Office and commitment to supporting and working closely in partnership with both academic staff and students; following which processes had been introduced to be time cost effective for academic staff and enhance the student experience at Glasgow, Singapore and UESTC.
- Overall commitment to Teaching and learning improvements and support provided to students
- Extent of accreditation and connection to high academic standards being enforced
- Industrial Work Placements and the number of these that are taken outside the UK
- SSLC Administrative processes

7.2 Areas for improvement

The Review Panel highlighted the following areas as opportunities for improvement:

- Whilst recognising the benefits of introducing specialist programmes, potential for some level of consolidation to prevent resources and staff being over stretched
- Reconfiguring the way staff deliver teaching in Years 1 and 2
- Wider engagement with the strategic vision of the School
- Review of current assessment for large classes, and identification of ways of increasing level of formative assessment
- Visibility of the formal elements of the Advisory System
- Review SSLC processes to ensure consistency and all feedback loops are closed
- Increase level of engagement and collaboration with TNE institutions recognising that the nature of the partnerships differs between institutions.

Specific recommendations addressing these areas for work are listed below, as are a number of further recommendations on particular matters.

8. Conclusion

It was evident to the Review Panel that the School had undergone significant changes since the last review. There was strategic vision for growth and development, and clear and committed leadership from the Convener of Learning

and Teaching, in particular. The Review Panel was impressed by the level of transformation in the degree programme through the process of harmonisation which produced initiatives such as the common curriculum which was valued by the students throughout the different disciplines of the School as well as having a positive impact on retention and progression. The collaborative arrangements with Singapore and China are a huge endeavour, and whilst the School was still transitioning and refining arrangements, it was evident to the Panel that the staff and students at Singapore and China are very positive and enthusiastic. Moving forward, the School is encouraged to continue to build and develop its relationships, providing a sense of community and cooperation across campuses with staff brought on board with strategy and teaching developments. Further consolidation of teaching provision, including a review of assessment, teaching support and administrative processes should further enhance provision.

8.1 Commendations

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

Commendation 1

The Review Panel **commends** the School for the work undertaken to ensure the success of the common curriculum. *[Paragraph 2.4.3]*

Commendation 2

The Review Panel **commends** the embedded LEADS support in Maths in the School *[Paragraph 3.1.5]*

Commendation 3

The Review Panel considered the advising system to be an impressive organisation and **commends** the School for developing this process. *[Paragraph 3.3.2].*

Commendation 4

The Review Panel **commends** the Teaching Office staff for the level of support and assistance provided to both students and staff. *[Paragraph 4.4.8]*

Commendation 5

The Review Panel **commends** the School for enabling a substantial number of students to undertake their industrial placement outwith the UK. *[Paragraph 4.1.5]*

Commendation 6

The Review Panel was most impressed with the work of the School and both the TNE institutions and acknowledged the positive impact this arrangement had on the School's reputation and **commends** the School on this achievement. *[Paragraph 6.4.1]*

8.2 Recommendations

The following recommendations have been made to support the School of Engineering in its reflection and to enhance provision in relation to teaching, learning and assessment. The recommendations have been cross-referenced to the paragraphs in the text of the report to which they refer and are **grouped together** by the areas for improvement/enhancement and are **ranked in order of priority within each section**.

Strategic Approach to Enhance Learning and Teaching

Recommendation 1

The Review Panel **recommends** that the School, with the support of the College, rethinks teaching support and potentially restructures the teaching teams for large

classes. The review should include the role of technical staff, learning technologists and GTAs in order to optimise the School's resources and to alleviate the pressure on all staff. [Paragraph 2.4.5]

For the attention of: The Head of School

The College Dean of Learning and Teaching

For information: Vice Principal and Head of College of Science and Engineering

The Review Panel **recommends** that the School reviews communication, engagement and involvement of staff to ensure all staff are actively involved in the developments in relation to strategy and engage effectively with opportunities to contribute to strategy and teaching developments in an open and transparent environment. [Paragraph 2.4.6]

For the attention of: School Engagement Lead

For information: The Head of School

Assessment and Feedback

Recommendation 2

The Panel explored adjusting the weighting of exams and course work, however, staff considered that, in view of the large class sizes, this would impact on staff time and workload. There were justified concerns that the current system disadvantaged some students in fulfilling their potential, therefore, the Review Panel **recommends** that the School review the current first year assessment design and identifies ways to increase the level of formative assessment as well as reduce the reliance on high stakes assessments, subject to remaining within the constraints of accreditation. [Paragraph 4.2.2]

The Review Panel considered the scanning and printing of examination papers from UESTC to be time consuming and in view of the technology available, potentially obsolete. The Review Panel **recommends** that the School review the current processes with a view to identifying a more efficient and streamlined process if possible, to alleviate the pressure on the Teaching Office and to free staff time for other processes. The Review Panel acknowledges that opportunities for streamlining may be limited in the absence of improved online assessment of mathematical subjects and **recommends** that the issue is raised with the Chair of the Assessment and Feedback Transformation Project, Professor Frank Coton, to include within considerations of online assessment. [Paragraph 4.4.9]

For the attention of: The Head of School

Chair, Assessment and Feedback Transformation Project

In view of the level of support provided by the Teaching Office and their pivotal role in relation to much of the School administrative processes, the Review Panel **recommends** that the support for the Teaching Office is reviewed to continue to streamline unnecessary processes and alleviate pressures where possible taking into account the role played by the IT team. [Paragraph 4.4.11]

For the attention of: The Head of School

Retention

Recommendation 3

The Review Panel was concerned about the high dropout rate, and whilst recognising the challenges, **recommends** that further consideration be given to the contributory

factors and the potential solutions. Specifically, the Panel recommends that the School work closely with Planning and Business Intelligence to undertake an analysis of retention, progression and continuation for Levels 1 and 2 of the kind recently undertaken in Computing Science. *[Paragraph 3.1.4]*

For the attention of: The Head of School

**For information: The Director, Planning and Business Intelligence
Head of School of Computing Science**

Recommendation 4

The Review Panel **recommends** that the School works with the student body to enhance visibility of the formal elements of, and improve engagement with, the Advisory System and in particular, the first meeting with Advisers of Studies in order to identify those students who may need to withdraw or transfer at an early stage. *[Paragraph 3.3.3]*

For the attention of: The Head of School

Feedback Mechanisms

Recommendation 5

The Review Panel **recommends** that the School review the SSLC process in consultation with the SRC Sabbatical Officers/President to ensure sufficient dialogue and feedback between staff and students and to engage the wider student population in the process. *[Paragraph 3.4.1]*

For the attention of: The Head of School

For information: SRC President

Marketing

Recommendation 6

The Review Panel **recommends** that, in addition to the current practices, the School should review the marketing of the programmes, including the School website, to present a more contemporary and inclusive image. The School could compare the current website with those of other institutions, such as the University of Bristol and advice should be sought from External Relations and the Equality and Diversity Unit in the first instance, but potentially also from the School of Physics and Astronomy which has a Silver Athena Swan award, where a range of initiatives have been undertaken as part of the University's Gender Action Plan. *[Paragraph 3.2]*

For the attention of: The Head of School

**For information: Vice Principal, External Relations
Manager, Equality and Diversity Unit
The Head of School of Physics and Astronomy**

Staffing

Recommendation 7

In view of the pressure on staff to meet their marking obligations, the Review Panel **recommends** that the School should consider using GTAs for marking at pre-Honours, and possibly Honours level where appropriate, with suitable levels of training, supervision and support. *[Paragraph 4.2.5]*

For the attention of: The Head of School

For information: The Director, Learning Enhancement and Academic Development Service

The Review Panel **recommends** that the School review the oversight and training of GTAs to ensure that more consistency in the GTA experience and consult with LEADS for guidance and advice on GTA training [*Paragraph 4.4.2*]

For the attention of: The Head of School

There was some uncertainty as to how involved GTAs can be in marking at different levels and the current University policy was considered to be unclear on certain aspects of GTA marking. The Dean of Learning and Teaching expressed a willingness to work with Academic Services to clarify current policy documentation. [*Paragraph 4.4.3*]

For the attention of: The Convenor of Academic Standards Committee and the Head of the Senate Office.

The Dean of Learning and Teaching, College of Science & Engineering.

Recommendation 8

The Panel **recommends** that the PSR Convenor raises the ECDP and PGCAP feedback with the University's ECDP Lead (Prof Murray Pittock) and with the Director of LEADS in order that the feedback is acted on appropriately through the ECDP Champions in the Colleges and other appropriate ECDP committees as part of the wider governance of the ECDP programme. The Panel also **recommends** that the review of PSR that is currently underway within Academic Services, gives consideration to how issues relating to broader University initiatives (such as ECDP), but that don't lend themselves to specific recommendations that ASC might follow up on, could be more meaningfully recorded and addressed in future. [*Paragraph 4.4.7*]

For the attention of: the PSR Convener and the Manager, PSR, Senate Office

For information: ECDP Lead

Director of Learning Enhancement and Academic Development Service

Feedback Mechanisms

Recommendation 9

At the meeting with students, it was confirmed that staff responded informally to student feedback via email. However, there were no student summary response documents to course evaluation questionnaires, a requirement of the University's Course Evaluation policy. The Review Panel **recommends** that the Subject provides summary response documents to course evaluation questionnaires and that these are placed on course Moodle pages as well as provided to SSLCs. [*Paragraph 3.4.3*]

For the attention of: The Head of School

Accreditation

Recommendation 10

The Review Panel **recommends** that the School encourage and assist staff to assume active roles within the accreditation bodies to contribute and influence future policy and accreditation requirements in relation to teaching and assessment in Engineering. [Paragraph 4.2.3]

For the attention of: The Head of School

Staffing

Recommendation 11

The Review Panel **recommends** that the College review the staffing and recruitment practices with the School to identify ways to improve the process and reduce the impact on existing staff. There may also be the opportunity to feed into the World Changing Glasgow project on recruitment. [Paragraph 4.3.2]

For the attention of: The Head of College HR

For Information: Vice Principal and Head of College of Science and Engineering

The Head of School

For information: Ms Emma Pickard, World Changing Glasgow Transformation Team.

Recommendation 12

The staff advised that several essential processes required by the University presented challenges. These included the Tier 4 monitoring system for students and GTA recruitment. The staff indicated that although they believe their approaches to be robust, they were aware that each School has developed individual solutions with no means of sharing expertise. The team considered that as the processes and challenges in managing them were not unique to the School of Engineering, and rely on specialised knowledge, that it would be beneficial to approach them more centrally and consistently across the University. The Panel **recommends** that guidance on best practice in these matters be explored with College of Science and Engineering HR, and with the Central Services HR. [Paragraph 4.4.10]

For the attention of: The Head of College of Science and Engineering, HR

Head of Central Services HR

For Information: The Head of School

Recommendation 13

Early career staff commented to the Panel that it would be useful to have a School induction handbook and an annual calendar of events. The Head of School advised that there was such a handbook which included these headings together with a checklist and was available on the web. In view of the uneven awareness of the handbook, the Review Panel **recommends** that the School seeks input from Early Career Staff on the contents and the dissemination of the information. [Paragraph 4.4.6]

For the attention of: Senior Administrator, School Office

For the attention of: The School Engagement Lead

For information: The Head of School

TNE

Recommendation 14

Given the maturity of the TNE relationships at this point, the Review Panel **recommends** that the School takes the opportunity to consider how to reprofile this activity so as to incorporate TNE more prominently, recognising its importance as part of the School's strategic contribution to research and teaching, and considers how to strengthen partnerships around research and teaching initiatives. *[Paragraph 6.4.1]*

For the attention of: The Head of School

Recommendation 15

The Panel would have valued more time with the TNE staff and students and, therefore, the Review Panel **recommends** that, in future, Student and Academic Services and the School, give consideration to whether the Engineering TNE activity is reviewed separately or that the review visit is extended. The Panel acknowledges there is a trade-off between considering the School holistically and giving due attention to TNE but certainly given the scale of endeavour, there is a need for further time to explore and acknowledge in full, the TNE activity in the future. *[Paragraph 6.1.1]*

For the attention of: The Head of School

Transnational Education Deans

Vice Dean Glasgow College UESTC

For information: Vice Principal and Head of College of Science and Engineering

Recommendation 16

The Review Panel **recommends** that the University review the support models for the TNE students and staff to recognise the different requirements of these institutions to Glasgow and to ensure that these requirements are understood and met. Additionally, the Review Panel recommends that the School review how to achieve wider awareness of TNE partners through representation at key School committees. *[Paragraph 6.4.2]*

For the attention of: Executive Director, Information Services

For information: Transnational Education Dean

Vice Dean Glasgow College UESTC

Recommendation 17

Also in relation to TNE, the Review Panel **recommends** that a review of the marking process be undertaken to ensure consistency of approach in terms of explaining the grading criteria when providing feedback on assessment. *[Paragraph 6.3.1]*

For the attention of: Transnational Education Dean

Vice Dean Glasgow College UESTC

For information: The Head of School

Recommendation 18

Also in relation to TNE, the Review Panel **recommends** that there is a general review of the curriculum and teaching approach to address the issues identified in relation to overlapping content, opportunities for more interactive teaching and students' understanding of the material at UGS on an ongoing and formative basis. *[Paragraph 6.2.1]*

For the attention of: Transnational Education Dean
For information: The Head of School