

**MASTER'S QUALITY COMMITTEE**  
**(BUSINESS, ENGINEERING & PHYSICAL SCIENCES)**

**The minutes of the Master's Quality Committee**  
**(Business, Engineering & Physical Sciences)**

**held on**  
**Friday 21<sup>st</sup> March 2014**

**Present:**

Dr David McPhail, Graduate School Deputy Director & Department of Materials (Chair)  
Dr Laura Barter, Department of Chemistry  
Mr Max Boleininger, Student Representative for Physical Sciences  
Professor Lesley Cohen, Department of Physics  
Professor Alessio Corti, Department of Mathematics  
Ms Boshuo Guo, GSU Deputy President  
Professor Andrew Holmes, Department of Electrical and Electronic Engineering  
Professor Bassam Izzuddin, Department of Civil & Environmental Engineering  
Professor Richard Jardine, College Consul for Engineering & the Business School  
Professor Howard Johnson, Department of Earth Science & Engineering  
Dr Pat Leever, Department of Mechanical Engineering  
Dr Marco Mongiello, Business School  
Professor Andrew Parry, College Consul for Natural Sciences  
Mr Dean Pateman, Academic Registrar  
Dr Fariba Sadri, Department of Computing  
Professor Denis Wright, Director of Student Support

**In attendance:**

Mr David Goldsmith, ICU President (for item 4)  
Dr Martyn McLachlan, Department of Materials (for item 6.1)  
Mr Richard Monk, Assistant Registrar (Senate and Academic Review)  
Dr Simon Schultz, Department of Bioengineering (for item 5.3)  
Mr Dan Smith, Management Trainee  
Professor Nina Thornhill, Department of Chemical Engineering (for item 5.2)  
Mrs Clare Scheibner, Assistant Registrar (Quality Assurance and Enhancement), (Secretary)

**Apologies:**

Mr Mohammad Ahmadzadeh, Student Representative for Engineering  
Dr Simon Archer, College Tutor  
Professor Sergei Chernyshenko, Department of Aeronautics  
Dr John Gibbons, Department of Mathematics  
Professor Sue Gibson, Director Graduate School  
Professor Debra Humphris, Vice Provost (Education)  
Ms Nat Kempston, ICU Deputy President (Education)  
Professor Kang Li, Department of Chemical Engineering  
Mr Ruxandra Luca, Student Representative for the Business School  
Dr Darryl Overby, Department of Bioengineering  
Mr Andreas Thomik, GSU President  
Professor Richard Thompson, College Consul for Natural Sciences  
Dr Nick Voulvoulis, Centre for Environmental Policy

**1. Welcome and Apologies**

Dr David McPhail welcomed members to the meeting and apologies, as listed above, were noted.

**2. Minutes**

**Paper A**

The Committee approved the minutes from the Master's Quality Committee (Business, Engineering & Physical Sciences) held on 24th January 2014.

**3. Matters arising from the Minutes**

Matters arising not appearing elsewhere on the agenda were discussed.

**3.1** Further to minute 10.1, Mr Richard Monk informed the Committee that all External Examiners yet to submit their reports had been contacted via email on a minimum of two occasions by the Senate and Review Team. The Committee also heard that a further email would be sent directly by the Academic Registrar.

**3.2** The Committee noted that there were currently fewer outstanding reports compared to the same time last year and that improvements in this area had been made.

**3.3** Following further discussion it was acknowledged that stronger decisions would need to be made by departments before re-appointing external examiners who did not submit a report or submitted a report that lacked detail and feedback.

**3.4** The Committee requested that a standard text be provided for the use of departments to send to their external examiners with outstanding reports. Mr Dean Pateman agreed to look into this and to take any proposal to the Quality Assurance and Enhancement Committee (QAEC) for approval before being used.

**Action: Mr Dean Pateman**

**4. Student Consultation Framework**

**Paper B**

The Committee considered a draft Student Consultation Framework developed by the Imperial College Union which was presented by Mr David Goldsmith, ICU President. The Committee heard that the Consultation Framework was intended to be a useful resource for the Students' Union and for the support and academic departments to facilitate their consultation with students.

**4.1** The Committee noted that there had been wide consultation throughout the College with individuals and Committee's to develop the framework.

**4.2** The Committee queried how departments would be made aware of the framework and its guidance. Mr Goldsmith confirmed that all new Students' Union Representatives would receive training regarding the framework and they, in turn, would raise awareness throughout the academic departments. Mr Goldsmith would also be making a presentation to all non-academic departments. Mr Goldsmith also confirmed that the framework could be used to help consult with alumni, however, it was noted that communication with these students would have to be in consultation with the Alumni Office.

**4.3** The Committee also queried if the Framework would be inclusive of a software package. Mr Goldsmith responded that software of this type was not currently available; however, the College ICT department had indicated that they would be able

to look into this in the future.

- 4.4 The Committee was requested to provide any further feedback to Mr Goldsmith at [union.president@ic.ac.uk](mailto:union.president@ic.ac.uk)

**Action: All Committee Members**

## 5. New Programme Proposals

### 5.1 MRes in Business with Finance and MRes in Business with Management (Business School) Paper C

The paper was withdrawn pending further discussion within the Business School. The Committee heard that a revised proposal may be submitted to a later meeting.

### 5.2 MSc, Postgraduate Diploma and Postgraduate Certificate in Process Automation, Instrumentation and Control (Department of Chemical Engineering) Paper D

The Committee considered a proposal from the Department of Chemical Engineering to introduce a new part-time, modular, MSc, Postgraduate Diploma and Postgraduate Certificate in Process Automation with effect from December 2014.

- 5.2.1 Professor Nina Thornhill, Department of Chemical Engineering, presented the proposal to the Committee. The Committee heard that the part-time, modular programme would be an Integrated Graduate Development Scheme (IGDS), a professional development scheme for experienced graduates which had previously been run successfully at Newcastle University. With the retirement from full-time work of the current Scheme Director at Newcastle, the Partnership in Automation and Control Training (PACT) had approached the Department of Chemical Engineering with a suggestion to implement a similar programme. Newcastle were in agreement and their Programme Director would provide access to the current programme material and assist with the setting up of the new programme. Subject to an agreement with University of Newcastle, some students may transfer to Imperial to complete their programme.

- 5.2.2 Professor Thornhill explained that the aim of the programme was to attract high calibre, highly motivated graduate students who wished to obtain an industrially relevant qualification in control and instrumentation. The programme would make use of the educational and training facilities of the Chemical Engineering pilot plant and ABB Control Room.

- 5.2.3 The Committee noted that students would be able to register per module or, initially, for the Postgraduate Certificate. Students who registered per module would be processed via the CPD route via the School for Professional Development. Students who registered for the Postgraduate Certificate would do so via the College's normal admissions route. Students who successfully completed the Postgraduate Certificate would then be able to progress to Postgraduate Diploma and subsequently the MSc.

- 5.2.4 As the programme would be targeted toward industrial practitioners and not graduating first degree students at least one year of current industrial experience would be a requirement for entry. Students without a first degree but with an appropriate professional diploma(s), coupled with highly relevant work experience would be asked to demonstrate their ability to manage the full MSc by successfully completing at least two modules via the Continuing Professional Development route.

- 5.2.5** The Committee heard that the standard period of study for the MSc award would be between two and five years, one and three years for the Postgraduate Diploma and six months and two years for the Postgraduate Certificate. In accordance with the Academic regulations, the maximum period of study for the MSc would be five years, four years for the Postgraduate Diploma and two years for the Postgraduate Certificate after initial registration for the first qualification. All students would register for the Postgraduate Certificate in the first instance. Students would be required to pass the Postgraduate Certificate programme before progressing to the Postgraduate Diploma. Enrolled Postgraduate Diploma students who wished to progress could transfer to the Master's programme once they had successfully completed all their core modules, otherwise the Postgraduate Diploma would be a requirement of entry for the MSc programme. MSc students would have a minimum period of 6 months and a maximum period of 12 months to complete their project.
- 5.2.6** Professor Thornhill further explained that Postgraduate Certificate students would be required to pass 4 taught modules and Postgraduate Diploma students would be required to pass 8 taught modules in total. MSc students must also pass an independent industrially-based research project. The number of core and elective modules per award would depend on the pathway and previous experience of each student. Students would be made aware of their possible individual programme of study at the onset of their registration for their award. The modules would be offered on a cycle of twelve to eighteen months, meaning that each module would become available at least once in every 18 month cycle. This would allow students to plan their study to fit with their work schedule. The examination for each module would normally take place two and half months after the delivery of the module. Re-sit examinations would take place during a designated re-sit period, no sooner than three months and no later than eighteen months, after the original examination.
- 5.2.7** The Committee approved the new part time MSc, Postgraduate Diploma and Postgraduate Certificate in Process Automation, Instrumentation and Control, with effect from December 2014 and agreed to recommend the programme for Senate approval.
- 5.3 MRes in Neurotechnology (Department of Bioengineering/Centre for Neurotechnology) Paper E**
- The Committee considered a proposal from the Department of Bioengineering to introduce a new MRes in Neurotechnology with effect from October 2014.
- 5.3.1** The proposal was presented by Dr Simon Schultz, Department of Bioengineering. The Committee heard that the proposed MRes would form the first year of a 1+3 programme in the new [EPSRC Centre for Doctoral Training \(CDT\) in Neurotechnology for Life and Health](#). In future the MRes may also be offered as a stand-alone degree. The CDT is led by the Faculty of Engineering, but will be a collaboration between the Faculties of Engineering, Medicine and Natural Sciences. The delivery of the training programme would be shared by these Faculties.
- 5.3.2** The Committee heard that the Centre for Neurotechnology would train a new generation of multidisciplinary researchers working at the interface of neuroscience and engineering. Students would train in a "1+3" programme, in the first year taking the purpose-developed MRes in Neurotechnology, followed by a three year PhD. The

programme would address substantial demand from industry and academic research organisations for PhD-qualified researchers with multi-disciplinary perspective, and with both a solid understanding of their biomedical problem and the expertise to develop new technology to solve it.

- 5.3.3** Dr Schultz explained that the MRes would be a 12-month full-time programme and would include both taught and research project elements. There would be a 9-month multidisciplinary research project involving a minimum of two laboratory rotations and three months of taught modules. The taught element will include an Introduction to Neuroscience module custom-developed for the MRes, aimed at giving students from engineering and the physical sciences a thorough grounding in neuroscience. There would also a number of other modules including Neurotechnology Entrepreneurship and Ethical and Social Implications of Neurotechnology.
- 5.3.4** It was noted that the programme would be available on a full-time only basis over one calendar year. The programme also met the MRes programme requirement that more than 50% of the programme must be in the form of a research project(s).
- 5.3.5** Dr Schultz informed the Committee that 10 applicants had been interviewed for the CDT in Neurotechnology for Life and Health and would therefore be offered a place on the new MRes should it be approved by Senate. If the programme was not approved students would be offered places on the existing MRes in Bioengineering instead. There were no current plans for 2014-5 to enrol students to the MRes in Neurotechnology outside of the CDT, however, this would be considered for future years.
- 5.3.6** The Committee approved the new MRes in Neurotechnology, with effect from October 2014 and agreed to recommend the programme for Senate approval.

## **6. Major Programme Modifications**

### **6.1 MSc in Advanced Materials Science & Engineering**

**Paper F**

The Committee considered a proposal from the Department of Materials to make various in session amendments to the MSc in Advanced Materials Science and Engineering with immediate effect.

- 6.2** Dr Martyn McLachlan presented the proposal to the Committee. The Committee heard that during the accreditation of the programme by the Institute of Materials, Minerals and Mining (IOM3), the accreditation panel expressed concern regarding students taking 3rd year undergraduate modules as these modules did not meet their required M-level specification. Their recommendation for an accredited MSc would be for students to achieve a minimum of 150/180 CAT credits where 150 CAT credits were M Level [In ECTS terms this would be equivalent to 75/90]. Based on the current option choices it was possible for some students to fall short of this requirement. In order to address this and meet the accreditation standards the Department proposed to introduce additional lectures, coursework elements and modifications to examinations.

- 6.3** The Committee noted that no examinations had yet taken place. The Committee further noted that all the proposed changes were applicable to the MSc students only.

6.4 The Committee further heard that the External Examiner had strongly urged the Department to consider changing the project weighting for the programme, however, the Department had decided that this change should not take place during the current year but be implemented for the 2014-5 cohort and beyond. A further programme modification request would be submitted at a later date to address this.

6.5 The Committee noted that current student consent had been gained. It was noted that if approved by Senate the IOM3 would accredit the programme from 2013-4 entry.

6.6 The Committee approved the modifications to the MSc in Advanced Materials Science & Engineering with immediate effect and agreed to recommend them for Senate approval.

7. **Revising Periodic Review & Programme Monitoring**

**Paper G**

The Committee considered a proposal in response to feedback from departments and review panels with regard to the existing periodic review and programme monitoring process. The proposal aimed to simplify the existing arrangements by combining existing undergraduate and Master's level review processes into a single annual review of taught provision. The paper also included a number of considerations for discussion:

- To consider whether MRes programmes should be reviewed with taught provision or research provision.
- To consider whether periodic reviews should normally be scheduled in the year prior to, or the year after, an accreditation visit.
- To consider, or seek to define, the types of professional, statutory or regulatory body that QAEC recognises in order for a programme to be treated as 'accredited' for the purposes of periodic review.
- To consider whether a five year review cycle for taught provision (UG & PGT) and a six year review cycle for postgraduate research provision (PGR) is appropriate.
- To consider defining a specific point in the academic year when periodic reviews of taught provision will normally take place.

7.1 Several departments expressed a preference for leaving the Master's level review process as it was and were concerned that the proposed annual monitoring of all taught provision would be more time consuming than the existing system. To aid them in their decision making process, the Committee felt it would be helpful to see mock up of new look review process.

**Action: Richard Monk**

7.2 Departmental Representatives were invited to provide feedback to the Assistant Registrar (Senate & Academic Review) by mid-April.

**Action: All Departmental Reps**

## **8. Programme Routine Reviews 2012-3**

### **8.1 Royal College of Art Annual Programme Review for MA/MSc in Innovation Design Engineering Paper H**

The Committee considered the Annual Programme Review of the MA/MSc in Innovation Design Engineering 2012-3 by the Royal College of Art (RCA). The Committee noted that the overall report was positive. The Committee further noted that issues raised, such as lack of space and facilities, were being addressed by the RCA.

### **8.2 MSc in Sustainable Energy Futures (Department of Mechanical Engineering) 2012-3 Paper I**

The Committee considered the programme review of the MSc in Sustainable Energy Futures in the Department of Civil and Environmental Engineering for 2012-3.

**8.2.1** The programme was reviewed by Professor Lesley Cohen who rated the programme as "GOOD".

**8.2.2** Professor Cohen cited various areas of good practice which included; an Alumni networking event which is held the same week as Postgraduate Graduation allowing current and past students to meet; student support demonstrated through regular meetings between students and their supervisors which are documented by students in a project logbook.

**8.2.3** The Committee endorsed the rating of "GOOD" and it was agreed the programme would next be reviewed in three years' time.

### **8.3 MRes in Plastic Electronic Materials (Department of Physics)**

**Paper J**

**8.3.1** The Committee considered the programme review of the MRes in Plastic Electronic Materials in the Department of Physics for 2012-3.

**8.3.2** The programme was reviewed by Dr Fariba Sadri who rated the programme as "GOOD".

**8.3.3** Dr Sadri cited the timing of examinations which had been moved from January to April in response to feedback, the use of peer assessment and the weekly journal club to be instances of good practice. Dr Sadri further described the programme as well-run.

**8.3.4** The Committee endorsed the rating of "GOOD" and it was agreed the programme would next be reviewed in three years' time.

### **8.4 MSc in Advanced Chemical Engineering (Department of Chemical Engineering)**

**Paper K**

The Committee considered the programme review of the MSc in Advanced Chemical Engineering, MSc in Advanced Chemical Engineering with Biotechnology, MSc in Advanced Chemical Engineering with Process Systems Engineering and MSc in Advanced Chemical Engineering with Structured Product Engineering in the Department of Chemical Engineering for 2012-3.

**8.4.1** The programme was reviewed by Professor Bassam Izzudin who rated the programme as "GOOD".

Professor Izzudin summarized that the programmes were of a high standard which

**8.4.2** were well run and that the modules were challenging and current. Also highlighted was the large selection of project topics available to the students. Professor Izzudin commended the Department on this suite of MSc programmes.

**8.4.3** The Committee was pleased to note that student feedback was actively sought, taken seriously and acted upon by the Department which had been highlighted as an area of good practice.

**8.4.4** The Committee endorsed the rating of “GOOD” and it was agreed the c would next be reviewed in three years’ time.

## **9. Entry and Exit Reports of New Programmes in 2012-3**

### **9.1 MRes in Plasmonics and Metamaterials (Department of Physics)**

**Paper L**

The Committee considered a report on the new MRes in Plasmonics and Metamaterials, Department of Physics, on the results achieved by their first cohort of students (2012-3).

**9.1.1** The Committee noted that the Department recently withdrew the MRes with effect from 2014-15. The Committee heard that the Department proposed to offer the topic as a stream on the existing MSc in Physics for 2014-5. This had several advantages over the standalone MRes, as the MSc in Physics receives a substantial number of high quality applicants and has a much larger cohort (typically 25 – 30 students a year).

### **9.2 MRes in Bioengineering (Department of Bioengineering)**

**Paper M**

The Committee considered a report on the new MRes in Bioengineering, Department of Bioengineering, on the results achieved by their first cohort of students (2012-3).

**9.2.1** The Committee noted that the Department had felt that the programme had been successful and a much larger number of applications had been received for 2013-4 with almost 20 applicants being selected for the programme.

**9.2.2** The Committee also noted enhancements had been made to the programme which included the introduction of a systematic marking criterion for all types of examinations enabling students know in advance the specific assessment criteria for each exam and that the Journal Club was now running solely for the MRes programme from 2013-4.

### **9.3 MSc in Advanced Materials Science & Engineering (Department of Materials)**

**Paper N**

The Committee considered a report on the MSc in Advanced Materials Sciences & Engineering, Department of Materials, on the results achieved by their second cohort of students (2012-3). The Committee had considered a report for the 2011-2 cohort in May 2012 and due to the high number of failures in that year the Committee had asked that a further report be submitted for the 2012-3 cohort.

**9.3.1** The Committee noted that the overall results obtained by the cohort for 2012-3 were significantly improved compared with 2011-2.

**9.3.2** The Committee heard that this improvement was attributed to a number of changes that were implemented after the initial year;



- The background programmes of the students had been scrutinised – not only the degree title but rather the specific subjects taught and the grades achieved.
- The Programme Director spent much of the first week assisting students with module selection, matching backgrounds to suitable subjects and discussing personal interests.
- Some students elected to commence 1 extra module to assess suitability and gauge the content – after a few lectures reselection was allowed.

**9.3.4** The Committee further heard that the Department would continue to closely monitor the programme and the progression of their students throughout the current academic year.

**9.3.5** The Committee were satisfied with the report and no further action was required.

**10. External Examiner reports for 2012-3**

**Paper O**

The Committee considered reports from External Examiners for the 2012-3 session.

**10.1 MSc in Quantum Fields and Fundamental Forces (Department of Physics)**

The Committee noted the positive report from Professor Andre Lukas and in particular that he had considered the programme *world class in Theoretical High Energy Physics and that Imperial College should be proud and extremely supportive of this programme*. Professor Lukas also considered the examination process, including the overall quality of assessment methods to be appropriate, and the academic standards achieved by students to be equivalent to comparable programmes at other institutions.

**10.1.1** The Committee noted the positive report from Professor George Papadopoulos and in particular that he considered the balance, content and coherence of the programme and the suitability and adequacy of teaching methods to be appropriate. Professor Papadopoulos also considered the examination process, including the overall quality of assessment methods to be appropriate, and the academic standards achieved by students to be equivalent to comparable programmes at other institutions.

**10.1.2** The Committee further noted that Professor Papadopoulos supported the future possibility of two prizes; one would be the Salam prize for best overall performance and another prize for best project.

**10.1.3** The Committee thanked Professor Papadopoulos for his comments throughout his period as external examiner.

**10.2 MSc in Shock Physics (Department of Physics)**

The Committee noted a generally positive report from Professor John Field. Professor Field had commented in his report that a student had written in pencil, the Departmental reps were reminded to ensure that they instructed their examination candidates to write in pen as set out in the document "[General Instructions to Candidates for Examinations](#)".

**10.2.1** The Committee further noted that the programme had now been withdrawn and would be offered as a stream on the MSc in Physics with effect from 2014-5.

**10.3 MRes in Controlled Quantum (Department of Physics)**

The Committee noted a generally positive report from Dr Pieter Kok. Dr Kok considered the examination process, including the overall quality of the assessment methods, to be robust and remarked on the *high standards* of project reports which were produced. Dr Kok also considered the academic standards achieved by students to be *among the best*.

**10.3.1** The Committee further noted that whilst Dr Kok considered the use of multiple supervisors to be a strength of the programme he had concerns that marking standards were not always consistent across institutions. It was noted, however, that the department already had in place a process to flag up discrepancies.

**10.3.2** The Committee also noted that Dr Kok had raised concerns over the practices of some exam script markers and the absence of annotations which evidenced the marks awarded. Dr Kok suggested that both the first and second markers should clearly indicate where students had made mistakes.

**10.3.3** The Committee agreed that they were satisfied with the Department's response to Dr Kok.

**10.4 MRes in Plastic Electronic Materials (Department of Physics)**

The Committee was pleased to receive a positive report from Professor Franco Cacialli and in particular that he considered the examination process, including the overall quality of the assessment methods, to be appropriate. Professor Cacialli also considered the academic standards achieved by students to be comparable with other institutions.

**10.4.1** The Committee further noted that Professor Cacialli had raised concerns over the use of students' names during Exam Boards and suggested that the department adopt a system which ensured anonymity. The Committee was pleased to note that the department have committed to implementing Professor Cacialli's suggestion for the current academic year. It was further note that from 2014-5 the College would be introducing anonymous final examination boards for all Master's level programmes, except where programmes had received exemption from the anonymity requirement from the Chair of the relevant MQC.

**10.5 MSc in Actuarial Finance (Business School)**

This report was discussed under reserved business

**10.6 MSc in Innovation, Entrepreneurship and Management (Business School)**

The Committee noted a generally positive report from Professor Paolo Collini. Professor Collini was content that the examination process, including the overall quality of assessments, was appropriate and fair and that the academic standards achieved by students were high.

**10.6.1** The Committee further noted that Professor Collini had raised concerns regarding class sizes and considered that this may be preventing student participation.

**10.6.2** The Committee agreed that they were satisfied with the Business School's response to Professor Collini.

**10.7 MSc in International Health Management (Business School)**

The Committee was pleased to receive a positive report from Professor Paolo Collini and noted in particular that he considered the examination process and overall quality of assessments to be good. Professor Collini also considered the academic standards achieved by students to be very good.

**10.8 MSc in Management (Business School)**

The Committee noted a generally positive report from Professor Paolo Collini. Professor Collini considered the examination process, including the overall quality of assessment methods to be appropriate, and the academic standards achieved by students to be high.

**10.8.1** The Committee further noted that Professor Collini had raised concerns regarding class sizes and considered that this may be preventing student participation.

**10.8.2** The Committee agreed that they were satisfied with the Business School's response to Professor Collini.

**10.9 MBA/Executive MBA (Business School)**

The Committee noted the generally positive report from Professor Peter Taylor and in particular that he was impressed with the relevance of individual modules and assessment topics and the wide range of electives which were on offer.

**10.9.1** The Committee further noted that Professor Taylor had suggested the inclusion of more material on current issues of relevance at the expense of some of the basic, core syllabus which he felt may not be necessary for all students, particularly those on the Executive MBA.

**10.9.2** The Committee also noted that Professor Taylor had raised concerns over the need to ensure a common degree of difficulty for assessments. Professor Taylor suggested that the *challenges* posed by assessments should be reviewed to ensure that the credit awarded was appropriate.

**10.9.3** The Committee also noted that Professor Taylor had raised concerns over the practices of some exam script markers and the absence of annotations which evidenced the marks awarded. Professor Taylor suggested that the use of pro forma feedback sheets and the universal provision of assessment criteria with details of assessment might strengthen the assessment process.

**10.9.4** The Committee was pleased to receive a positive report from Professor Simon Mosey. Professor Mosey was content that the examination process, including the overall quality of assessments, was appropriate and that the academic standards achieved by students were comparable with other institutions. In particular Professor Mosey was impressed by the use of 'live' case studies and practitioner assessment.

**10.9.5** The Committee agreed that they were satisfied with the Department's response to their External Examiners.

**10.10 MBA (Business School)**

The Committee was pleased to receive a positive report from Professor Claudio Piga. Professor Piga was content that the examination process, including the overall quality

of assessments was appropriate and effective and that the academic standards achieved by students were comparable with other institutions.

**10.10.1** The Committee was also pleased to note that Professor Piga was impressed by the quality of modules available, which incorporated up-to-date topics and the use of relevant assessment methods.

**10.11 MRes in Bioengineering (Department of Bioengineering)**

The Committee noted a positive report from Dr Alvaro Mata. Dr Mata was similarly content that the examination process, including the overall quality of assessments was good. Dr Mata was particularly impressed by the level of projects and examinations as well as the efficiency of the exam board.

**10.12 MSc Advanced Materials Science and Engineering (Department of Materials)**

The Committee noted a generally positive report from Dr Noreen Thomas. Dr Thomas was content that the examination process, including the overall quality of assessments, was appropriate and that the academic standards achieved by students were high, with a much lower failure rate than the previous year.

**10.12.1** The Committee noted that Dr Thomas had raised concerns over the weighting of the project, believing it to be disproportionately high. Dr Thomas suggested the weighting should be reduced to 50%. The Committee was pleased to note that the department had considered Dr Thomas' concerns and would be adjusting the weightings beginning with the academic year 2014/15. A request would be made by the Department to the MQC in due course (see also Minute 6.4).

**10.12.2** The Committee further noted that Dr Thomas was concerned that the marking scheme for literature reviews was less robust and allowed considerable disparity between the marks awarded for content and quality. Dr Thomas suggested the implementation of double marking for literature reviews as well as more specific grading descriptors. The Committee were pleased to note that the department have reviewed their grading descriptors and have now implemented double marking. The Committee agreed that they were satisfied with the Department's response to Dr Thomas.

**10.13 MSc in Computing for Industry, MSc in Computing Science and MSc in Computing (Department of Computing)**

The Committee was pleased to receive a positive report from Professor Steven Jarvis. Professor Jarvis was content that the examination process, including the overall quality of assessments, was appropriate and fair and that the academic standards achieved by students were high and exceed the standards expected in national benchmarks.

**10.13.1** Professor Jarvis was particularly impressed with the scheme in place for the evaluation of borderline cases and its use during exam boards. Professor Jarvis suggested that this model could be adapted for use in other departments. Professor Bale observed that the project is the main assessment for these skills but that not all the projects undertaken provided the opportunity to demonstrate these skills.

**10.14 MSc in Environmental Technology (Centre for Environmental Policy)**

The Committee noted a generally positive report from Professor Jeff Bale. Professor Bale was content that the examination process, including the overall quality of assessments, was, in general, well done and that the academic standards achieved by students were comparable with other institutions.

**10.14.1** The Committee further noted that Professor Bale had raised concerns over the assessment of competency in statistics, data analysis and problem solving. Professor Bale observed that the project was the main assessment for these competencies but that not all projects provided the opportunity to demonstrate them. Professor Bale was concerned that these skills were not comprehensively assessed.

**10.14.2** The Committee was pleased to note a positive report from Professor Awadhesh Jha. Professor Jha was similarly content that the examination process, including the overall quality of assessments, was of a high standard.

**10.14.3** The Committee further noted that Professor Jha was particularly impressed by the opportunities provided for students to work with industrial partners and external organisations. Professor Jha considered the project topics, which were provided in collaboration with these partners to be an example of innovation and good practice.

**10.14.4** The Committee noted the report from Professor Brett Day. Professor Day was similarly content that the examination process, including the overall quality of assessments, was appropriate.

**10.14.5** The Committee noted that Professor Day had raised concerns over the material provided to him as an external examiner. It was noted that in May 2013 the Quality Assurance and Enhancement Committee (QAEC) had issued guidance which details the information which external examiners should receive, [Key information for external examiners](#). It was noted that Professor Day's concerns predated this guidance but it was hoped that there would be an improvement in future.

**10.14.6** The Committee noted that Professor Day had raised concerns regarding the justification of marks and use of marking schemes. Professor Day observed that whilst he generally agreed with the ordering of the marking that he felt that the marks given to candidates at the top end of the scale were too generous.

**10.14.7** The Committee further noted that Professor Day had raised concerns over the practices of some exam script markers and the absence of annotations which evidenced the marks awarded. Professor Day suggested that markers should clearly annotate each script to highlight where a candidate had achieved a standard required in the marking criteria.

**10.14.8** The Committee noted the report from Dr Kate Spencer. Dr Spencer was similarly content that the examination process, including the overall quality of assessments, was appropriate.

**10.14.9** The Committee further noted that Dr Spencer had raised concerns that the course was *UK-centric* with a strong emphasis on training students to enter the UK environmental consultancy market. Dr Spencer was surprised that this was the case given the international strength of the programme. The Committee was pleased to note that

the department are currently arranging for more international case studies to be included in the programme.

**10.14.10** The Committee further noted that Dr Spencer had raised concerns over the marking criteria and suggested that whilst these are appropriate it might be advisable to consider a more explicit and detailed set of criteria to ensure marks awarded consistently across the department. The Committee was pleased to note that the department have already committed to review the marking criteria.

**10.14.11** The Committee noted the report from Professor Peter Taylor. Professor Taylor was similarly content that the examination process, including the overall quality of assessments, was appropriate.

**10.14.12** The Committee noted that Professor Taylor had raised concerns over the assessment of quantitative analysis methods. Professor Taylor suggested that a greater number of questions requiring quantitative analysis could be used in the option exam and that more students should be encouraged to undertake a project that requires at least some element of quantitative analysis.

**10.14.13** The Committee agreed that, overall, they were satisfied with the Department's responses to their External Examiners.

**10.15 MSc in Pure Mathematics (Department of Mathematics)**

The Committee was pleased to receive the positive report from Professor Niels Jacob. Professor Jacob was content that the examination process, including the overall quality of assessments, was appropriate and that the academic standards achieved by students were comparable with other institutions.

**10.15.1** The Committee noted to the report from Professor Robert Wilson. Professor Wilson was similarly content that the examination process, including the overall quality of assessments, was appropriate and that the academic standards achieved by students were comparable with other institutions.

**10.15.2** The Committee noted that Professor Wilson was unhappy that he was not provided with a proper description of his duties and that he had resigned as an External Examiner as a result. The Committee noted that all External Examiners are now provided with a copy of the [Roles and Responsibilities for External Examiners](#) by the Registry.

**10.15.3** The Committee thanked Professor Wilson for his comments throughout his period as External Examiner.

**10.16 MSc in Statistics (Department of Mathematics)**

The Committee was pleased to receive the positive report from Professor Andrew Wood. Professor Wood was content that the examination process, including the overall quality of assessments, was highly appropriate and that the academic standards achieved by students were comparable with other institutions.

**10.16.1** The Committee noted that Professor Wood had raised concerns relating to the award of degree class, in particular the practice of rounding up fractional marks and the requirements for achieving distinction. The Committee was pleased to note that the

Department had determined to round fractional marks to the nearest integer as is the norm at other institutions and that they would continue to review the requirements for achieving distinction.

**10.17 MRes in Nanomaterials (Department of Chemistry)**

The Committee noted the generally positive report from Dr Jason Davis. Dr Davis was content that the examination process, including the overall quality of assessments, appeared sound and that the academic standards achieved by students were comparable with other institutions.

**10.17.1** The Committee noted that Dr Davis was concerned that the model answers provided were not adequate and that the same issue had been raised in the previous year. The Committee further noted that the department expected problems with the programme to be resolved with the introduction of a new MRes coordinator.

**10.18 MSc in Sustainable Energy Futures (Energy Futures Lab)**

The Committee noted the generally positive report from Professor Michael Fairweather. Professor Fairweather was content that the examination process, including the overall quality of assessments, was to a high standard and that the academic standards achieved by students were comparable with other institutions.

**10.18.1** The Committee noted that Professor Fairweather had raised concerns that some students were unsure about the marking criteria for some assessments and suggested that these sections of the handbook were extended and regularly brought to the students' attention.

**10.18.2** The Committee also noted that Professor Fairweather was particularly impressed by the development of debating and other professional skills and the requirement for log-books that document progress on the research project.

**10.18.3** The Committee further noted that Professor Fairweather considered the programme to be of a sufficient standard for accreditation by a professional institution and recommended that appropriate accreditation was sought for the future.

**10.18.4** The Committee further noted that Professor Fairweather had raised concerns over the practices of some exam script markers and the absence of annotations which evidenced the marks awarded. Professor Taylor suggested that markers should clearly annotate each script to highlight in order to clearly demonstrate that double marking and mark checking has taken place.

**10.18.5** The Committee noted the generally positive report from Professor Phil Taylor. Professor Taylor was similarly content that the examination process, including the overall quality of assessments, was well balanced and appropriate and that the academic standards achieved by students were slightly higher than other institutions.

**10.18.6** The Committee noted that Professor Taylor had raised concerns over the quality of some model answers and suggested that guidelines be put in place to ensure consistency.

**10.19 MSc in Petroleum Geoscience (Department of Earth Science and Engineering)**

The Committee was pleased to receive the report from Professor Peter Burgess and

noted that he had no concerns regarding the examination process, including the overall quality of assessments, and the academic standards achieved by students. Professor Burgess commended the staff involved in delivering the programme for its continued success.

**10.20 MSc in Advanced Chemical Engineering, MSc in Advanced Chemical Engineering with Biotechnology, MSc in Advanced Chemical Engineering with Process Systems Engineering and MSc in Advanced Chemical Engineering with Structured Product Engineering (Department of Chemical Engineering)**

The Committee noted the generally positive report from Professor George Chen. Professor Chen was content that the examination process, including the overall quality of assessments, was to a high standard and that the academic standards achieved by students were comparable with other institutions.

**10.21 MSc in Risk Management and Financial Engineering (Business School)**

The Committee noted the positive report from Professor Andy Mullineux. Professor Mullineux was content that the examination process, including the overall quality of assessments, was suitable and that the academic standards achieved by students were comparable with other institutions.

**10.22** Overall, the Committee noted that several examiners expressed concern over perceived lack of double marking. It was noted that [double marking protocol](#) had been recently revised and reissued by QAEC in July 2013. Although this was too late for this set of reports, it was hoped an improvement in this area would be seen in the 2013-4 reports.

**10.23** The Committee further noted that the External Examining system appeared to be working well.

**11. Appointment of External Examiners for 2013-4**

**Paper P**

The Committee considered the appointment of External Examiners for 2013-4.

**11.1** The Committee noted that Dr Chenery who was nominated as External Examiner to the MSc in Environmental Engineering in the Centre for Environmental Policy, did not have any prior taught programme external examining experience. However, it was noted that the programme has nine other external examiners, one of whom would mentor him. The nomination was therefore approved.

**11.2** All other nominations and reappointments were also approved by the Committee for 2013-4.

**12. Accreditation Reports**

**Paper Q**

The Committee noted the accreditation visit report from the Institute of Engineering and Technology (IET) for Master's level programmes within the Department of Computing.

**12.1** It was noted that in July 2014 the IET amended their requirement that that the pass mark for level 7 topics should be 50% to a recommendation only; following this decision the programmes have been accredited.

**12.2** It was noted that as the action plans are updated on an external database on an



ongoing basis, the Department confirmed that all the issues raised had been addressed already.

**12.3** It was noted that although the report was marked confidential it had been agreed by the IET that it was acceptable to circulate it to College committees & External Examiners and reviewers.

**13. Chair’s Report** **Paper R**  
The Committee noted actions taken by the Chair since the last meeting.

**14. MBA Elective Modules (Business School)** **Paper S**  
The Committee received the list of electives for the full-time MBA programme for 2013-4. This included seven new electives: Behavioural Finance, Consumer Behaviour, Design Management, Management Challenges in Healthcare, Social Media, Supply Chain Management and The Experience Business.

**15. Senate Executive Summary**  
The Committee noted that the latest executive summaries from Senate were available at: [Senate Executive Summary](#).

**16. QAEC Summary Reports**  
The Committee noted that the latest Senate reports from QAEC were available at: [QAEC Executive Summary](#).

**17. Any Other Business**

**17.1 English Language Requirements** **Paper U**  
The Committee considered an amendment to the recommended IELTS and TOEFL scores as previously considered by the Committee on the 24<sup>th</sup> January 2014. The Committee heard that the minimum TOEFL requirement in each element had been reduced by 2 points. The final proposed minimum entry requirements were as follows:

**College minimum entry level:**

<b>Undergraduate entry and Postgraduate entry</b>	<b>IELTS 6.5</b> <b>Minimum 6.0 in each element</b>	<b>TOEFL iBT 92</b> <b>Minimum 20 in each element</b>
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**College courses with a higher entry level:**

<b>Undergraduate entry and Postgraduate entry</b>	<b>IELTS 7.0</b> <b>Minimum 6.5 in each element</b>	<b>TOEFL iBT 100</b> <b>Minimum 22 in each element</b>
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**17.2** The Department of Chemistry raised a concern that the current College requirements for IELTS individual elements were only to be met in the speaking and writing, whereas the new proposal would require a minimum score of 6.0 in all elements. The Department were concerned that this may exclude students who did not reach the

minimum standard in the reading and listening which had not been a requirement previously.

- 17.3** It was agreed that the concern would be raised with Dr Julie King, Director of Centre for Academic English.

**Post Meeting Note 1**

Dr King strongly advised against accepting any IELTS element score below 6.0, commenting that this was a relatively low proficiency score and that a score below this may lead to students beginning their programmes with a clear weakness in one language skill.

**Post Meeting Note 2**

Following the meeting on 1<sup>st</sup> April 2014 QAEC approved the proposal and agreed to recommend it for Senate approval. Shortly after this, the Home Office announced that they would not be renewing the licence with ETS to act as a supplier of Secure English Language Tests for the purpose of student visa applications under Tier 4. The licence expired on 5th April 2014. ETS run TOEFL and TOEIC.

Imperial does not accept TOEIC and has historically had very few applicants presenting with TOEFL thus the immediate impact for the College should be limited. Registry had already updated their own guidance to applicants earlier in the year following the suspension of ETS activity in the UK. The new announcement covers ETS tests worldwide and the College will now need to review its guidance and policy in the light of these developments.

**18. Dates of next meetings 2013-4**

Friday 16<sup>th</sup> May 2014 at 10am – 1pm, Ballroom, 58 Prince’s Gate

Friday 11<sup>th</sup> July 2014 at 10am -1pm, Ballroom, 58 Prince’s Gate

The dates and deadlines for all other College meetings can be found at:

<http://www3.imperial.ac.uk/registry/proceduresandregulations/committees>

**19. Reserved Areas of Business**

**19.1 Special Cases**

**Paper T**

The Committee noted that there had been three special cases for admission since the last meeting, all of which had an outcome of ‘Approved’. The Committee had no comments regarding the approved decisions.

**19.2 Programme Suspension**

**Paper V**

The Committee considered a proposal from the Business School to suspend the new full-time and part-time MSc in Actuarial Finance (including the part-time Postgraduate Diploma and Certificate in Actuarial Finance) for 1 year effective from September 2014. The suspension was being dealt with under Reserved Business as the students and staff had not yet been notified.

**19.2.1**

It was noted that the MQC had approved the new full-time MSc in Actuarial Finance in January 2014 with a start date of September 2014. At the same meeting the MQC approved major changes to the existing 2 year part-time MSc in Actuarial Finance which included the introduction of the awards of Postgraduate Certificate and

Diploma with effect from September 2014. These proposals were subsequently approved by the February 2014 Senate. It was noted that the Business School now wanted to suspend all their Actuarial Finance programmes for 1 year whilst they re-negotiated with the accrediting body and would possibly re-launch the programmes in 2015-6.

**19.2.2** It was noted that there was one student on the existing part-time MSc in Actuarial Finance who had taken an interruption of studies and who was due back in September 2014 to join the first year of the programme.

**19.2.3** The Business School reported that they would seek alternative satisfactory arrangements for the existing student and they were reminded that they would not be able to suspend the part-time programme without the student's consent (although they could suspend entry to the programme for new students). It was agreed that the Business School would inform the Academic Registrar what arrangements would be put in place for the existing student.

**Action: Business School**

**19.2.4** The Committee approved the suspension of the programmes (subject to satisfactory arrangements for the existing student on the part-time MSc in Actuarial Finance being put in place) for one year with effect from 2014-5 and agreed to recommend it for Senate approval.

**Post Meeting Note**

The Business School arranged for the part-time student to re-join the first year of the programme from the beginning of the summer term. The student would be supported in completing the programme over the summer vacation periods.

**19.3 MSc in Actuarial Finance – external examiner's report**

Professor Diacon's report raised a serious issue with regard to a project choice and potentially poor guidance from a project supervisor. It was agreed that Mr Dean Pateman would discuss this matter with the Programme Director outside of the meeting.

**Action: Mr Dean Pateman**

**Paper O –  
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