

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

**The minutes of the Graduate School Master's Quality Committee  
(Business, Engineering & Physical Sciences)  
held on  
Thursday 21<sup>st</sup> March 2013**

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**Present:**

Dr David McPhail, Graduate School Deputy Director & Department of Materials (Chair)  
Professor Andrew George, Director Graduate School  
Professor Sergei Chernyshenko, Department of Aeronautics  
Professor Lesley Cohen, Department of Physics  
Dr Rob Dickinson, Department of Bioengineering  
Dr John Gibbons, Department of Mathematics  
Mr Doug Hunt, ICU Deputy President (Education)  
Professor Bassam Izzuddin, Department of Civil & Environmental Engineering  
Dr Pat Leever, Department of Mechanical Engineering  
Mr Nicholas Ng, Student Representative for Engineering  
Mr Simon Schillebeeckx, Student Representative for the Business School  
Dr Fariba Sadri, Department of Computing  
Professor Richard Thompson, College Consul for Natural Sciences  
Dr Nick Voulvoulis, Centre for Environmental Policy  
Mr Ross Webster, Student Representative for Physical Sciences  
Mr Nigel Wheatley, Academic Registrar

**In attendance:**

Ms Sophie White, Senior Assistant Registrar (Secretary)  
Professor Jimmy Moore, Department of Bioengineering (for item 4.1)

**Apologies:**

Dr Tim Albrecht, Department of Chemistry  
Dr Simon Archer, College Tutor  
Ms Maryam Habibzay, GSA President  
Professor Andrew Holmes, Department of Electrical and Electronic Engineering  
Professor Debra Humphris, Pro Rector (Education)  
Professor Richard Jardine, College Consul for Engineering & the Business School  
Professor Howard Johnson, Department of Earth Science & Engineering  
Professor Kang Li, Department of Chemical Engineering  
Dr Marco Mongiello, Business School  
Professor Denis Wright, Director of Student Affairs

## Minutes

1. **Welcome and Apologies**  
Dr David McPhail welcomed members to the meeting and apologies, as listed above, were noted.
2. **Master's Quality Committee (Business, Engineering & Physical Sciences) minutes** **Paper A**  
The minutes from the Master's Quality Committee (Business, Engineering & Physical Sciences) held on 24<sup>th</sup> January 2012 were approved.
3. **Matters arising from the minutes**  
Matters arising not appearing elsewhere on the agenda were discussed.
  - 3.1 Further to minute 3.5 regarding amending minute 6.3 from the meeting of 31<sup>st</sup> May 2012 of the Joint Academic Advisory Board for the MA/MSc on Innovation Design Engineering, it was noted that a request had been made.
  - 3.2 Further to minute 3.8 regarding the production of central guidelines for the use of peer assessment, Professor Andrew George reported that this was in progress.  
**Action: AG**
  - 3.3 Further to minute 7.1.4 regarding a review of the definition of second marking it was reported that this was in progress.  
**Action: AG, DSM & NW**
  - 3.4 Further to minute 7.14, concerning the external examiner report for the MSc in Applied Mathematics.  
**Discussion reported in Appendix 1 [not published with the minutes]**
  - 3.5 Further to minute 10.3, it was confirmed that the report of Higher Degrees Obtained had been circulated to Course Organisers for information.
4. **New Course Proposal**
  - 4.1 **MRes in Medical Device Design and Entrepreneurship** **Paper B**  
The Committee considered a proposal from Department of Bioengineering for a new MRes in Medical Device Design and Entrepreneurship to be introduced from October 2013.
    - 4.1.1 Professor Jimmy Moore presented the proposal and explained that medical device design and entrepreneurship was an area with major social and economic impact that will increase as the UK population ages. The principal aim of the proposed MRes was the preparation of students in the intricate and unique field of medical device entrepreneurship, from concept to business planning and market emergence. The programme would also address the Europe-wide shortfall of entrepreneurs identified recently in a European Commission report (Entrepreneurship 2020 Action Plan, Reigniting the Entrepreneurial Spirit in Europe, Brussels, COM(2012) 795, January 2013). Action Pillar 1 of this report was Entrepreneurial Education and Training to Support Growth and Business Creation.
    - 4.1.2 Professor Moore explained that the opportunity to offer the proposed course had

arisen through discussions with the Bagrit Trust, who have supported the Department of Bioengineering at Imperial College for 20 years. They had now donated funds to help establish a Research Chair in Medical Device Design, which they considered to be a natural development of their long relationship with Imperial College.

**4.1.3** Professor Moore further explained that the proposed MRes, would dovetail naturally with the Department of Bioengineering's research programmes and would produce a "pipeline" of talented and entrepreneurial graduates who would bring benefit to the UK through their involvement in the medical devices industry. It was envisioned that the graduates of the programme could go either directly into industry or into PhD programmes.

**4.1.4** It was noted that the Department had an additional need for this course in order to cater for students undertaking the first year of the College's MRC DTA 4-year PhD programme. The proposed MRes could serve as the first year of such a programme, followed by the standard three-year PhD. Furthermore, the Department considered it would greatly strengthen future bids for doctoral training centres (e.g. to EPSRC).

**4.1.5** It was noted that the MRes would be 12-months full-time programme, and would involve only a small amount of formal teaching. In addition to a course providing specific training in medical device entrepreneurship, there would be modules addressing key technical training requirements common to many areas of bioengineering. Students would also follow two elective courses (chosen from a list of six possible courses) from the MBA and the MSc in Innovation, Entrepreneurship and Management programmes in the Business School. The bulk of the training would take place in a year-long research/development project aimed at developing a technical strategy and business plan around a medical device concept. The engineering plan must provide a complete technical basis for the development of a market-ready device.

**4.1.6** The course would be available on a full-time only basis over one calendar year. The course would attract the standard fee applied to Master's courses in the Department of Bioengineering.

**4.1.7** The Committee welcomed the course but had the following concerns:

- **ECTS / Bologna allocation:**

That the student workload between the taught element and the research element should be better balanced in terms of the hours spent per ECTS. The Committee appreciated that this course used modules from the existing MSc in Biomedical Engineering and MRes in Bioengineering and that they had previously agreed a similar allocation for those courses, nevertheless they recommended that the balance should be addressed and that, if need be, the allocations for the MSc in Biomedical Engineering and MRes in Bioengineering be similarly amended also.

- **Assessment of the research project**

The Committee were concerned that there may be a possible conflict of interest if a student's supervisor was a member of the research/project supervisory committee awarding marks. Two suggestions to minimise the risk of a possible conflict were 1) the supervisor should only able to award a small percentage of the overall mark and

2) the supervisor should not be part of the assessment panel and only submit feedback to the panel on a pro-forma. The Committee agreed that the Department could implement alternative arrangements to these suggestions as long as the risk of conflict of interest was satisfactorily mitigated.

- **Marking scheme/criteria**

The Committee wanted further clarification of the mark scheme/criteria and wanted reassurance that these would be compatible with the College norms.

- **Course Management**

The Committee wanted to be assured that the proposed Course Director was familiar with the College regulations and requirements for MRes courses. They suggested the Course Director could undertake coaching/mentoring by an existing Course Director or suggested appointing a Joint Course Director to the programme. The Committee agreed that the Department could implement alternative arrangements to these suggestions.

**4.1.8** Subject to the above concerns being satisfactorily addressed, it was agreed that Chair's Action could be taken to approve the programme and the course would be recommended for Senate approval.

**Post Meeting Note:**

Following the meeting the Department made the following changes to the programme:

- ECTS/Bologna allocation: Modules 1-3 are now 5 ECTS each, with 30 hours of contact. Workload is expected to be heavier for these modules, given that they are directly related to the research project. Modules 5 and 6 are now 5 ECTS each, with 20 hours of contact. Workload is still substantial but not as heavy as Modules 1-3. These numbers align with those used in the Department's current MSc and MRes programmes.
- Assessment of the research project: The supervisor(s) will provide input to the viva assessment panel but not serve on the panel.
- Marking scheme/criteria: 40-50% in a single module is now described as capable of being offset, as long as the aggregate element mark is >50%.
- Course Management: Dr Robert Dickinson was named as an advisor to the programme.

Chair's Action was taken and the course was recommended for Senate approval with effect from October 2013.

## **5. Course Modification**

### **5.1 MRes in Plasmonics and Metamaterials**

**Paper C**

The Committee considered a proposal for the Department of Physics to allow re-sits within the same academic year on the MRes in Plasmonics and Metamaterials with

immediate effect (AY 2012-3).

- 5.1.1 Professor Lesley Cohen presented the proposal and explained that that re-sits within the academic year had previously been approved for other programmes in the Department of Physics which shared courses with the MRes in Plasmonics and Metamaterials. This meant that students on the MRes in Plasmonics and Metamaterials taking the same written examination as other Physics students did not have the same opportunity to re-sit the examination.
- 5.1.2 The Committee received assurances from the Department of Physics that the quality assurance issues such as the setting of additional examination papers and their moderation by external examiners would be properly regulated.
- 5.1.3 The Committee received reassurances from the Department of Physics that any student who was given permission to take their one permitted re-sit within the same academic year would be appropriately counselled before so doing.
- 5.1.4 The Committee agreed to recommend for Senate approval that re-sits within the academic year on the MRes in Plasmonics and Metamaterials be approved retrospectively with effect from the academic year 2012-13.

## 5.2 **MSc in Physics & MSc in Shock Physics**

**Paper D**

The Committee considered a proposal from the Department of Physics to create a new stream in Shock Physics on the existing MSc in Physics with effect from October 2013. The proposal included a request to withdraw the MSc in Shock Physics with effect from October 2013 as it was not felt to be a viable option as a standalone award. It was noted that the remaining part-time MSc in Shock Physics student would be supported in completing the programme.

- 5.2.1 It was noted that, under the proposal, students would choose from a number of courses on the MSc in Physics and their choices would inform their final degree title. It was agreed that the choice of courses should be made by the end of the second term, and those students who had chosen to specialise in shock physics would graduate with an MSc in Physics with Shock Physics.
- 5.2.2 It was noted that the External Examiners supported the proposal.
- 5.2.3 The Committee supported the proposal and agreed to recommend that Senate approve the new stream (and award title) with effect from October 2013.
- 5.2.4 Furthermore, the Committee agreed to recommend that Senate approve the withdrawal of the MSc in Shock Physics with effect from October 2013.

## 5.3 **MSc in Systems Engineering and Innovation**

**Paper E**

The Committee considered a proposal from the Department of Civil and Environmental Engineering to offer a full-time version of the part-time MSc in Systems Engineering and Innovation.

- 5.3.1 Professor Bassam Izzuddin presented the proposal and explained that Department of Civil and Environmental Engineering believed that there was sufficient demand to make a full-time version of the course viable and that students on the part-time

version would also benefit from interaction with a larger student cohort.

- 5.3.2** The Committee agreed to recommend that Senate approve the request to establish a full-time MSc in Systems Engineering and Innovation with effect from October 2013.

## **6. Course Suspensions**

### **6.1 MRes in Plasmonics and Metamaterials**

**Paper F**

The Committee considered a proposal from the Department of Physics to suspend the MRes in Plasmonics and Metamaterials for one year with effect from October 2013.

- 6.1.1** Professor Lesley Cohen presented the proposal and explained that the Department were preparing a bid for a CDT in the area of this MRes course, with a start date of October 2014 if successful. This would require the restructuring of the course into a joint MRes with King's College London and the Department did not wish to run the course whilst the outcome of the CDT bid was unknown.

- 6.1.2** The Committee agreed to recommend that Senate approve the suspension of the MRes in Plasmonics and Metamaterials for one academic year (2013-4).

## **7. Course Reviews for 2011-2**

### **7.1 MSc in Environmental Technology 2011-2**

**Paper G**

The Committee considered the course review for the MSc in Environmental Technology in the Centre for Environmental Technology.

- 7.1.1** It was noted that the course had been reviewed by Dr Pier Luigi Dragotti who had rated it as "GOOD".

- 7.1.2** The Committee confirmed that they were happy with the Course Organiser's responses to the reviewer's concerns about the decline in application numbers, the number of distinctions awarded and allocation of projects.

- 7.1.3** The Committee were pleased to see that the dedication of staff had been praised in the review and endorsed the reviewer's rating of "GOOD". The course would therefore be next reviewed in three years' time.

### **7.2 MA/MSc in Innovation Design Engineering 2011-2**

**Paper H**

The Committee considered the course review for the joint double degree programme, the MA/MSc in Innovation Design Engineering in the Department of Mechanical Engineering and School of Design at the Royal College of Art.

- 7.2.1** It was noted that the course had been reviewed by Dr Axel Gandy who had rated it "SATISFACTORY" due to the mixed survey results particularly concerning feedback on assessment, strand support and sustainability support as well as general organisation.

- 7.2.2** It was agreed that, whilst the Course Organiser had agreed to address the issues, this should be kept under review.

**7.2.3** It was agreed that the Chair should consider the latest survey results (including PG SOLE results) for the course and then liaise with the Course Organiser over providing an action plan for the October/November 2013 MQC detailing what improvements would be made.

**Action: DSM**

**7.2.4** It was agreed that the course should be rated as "SATISFACTORY" and that it would therefore be reviewed in two years' time.

**7.3 MRes in Green Chemistry: Energy and the Environment 2011-2**

**Paper I**

The Committee considered the course review for the MRes in Green Chemistry: Energy and the Environment in the Department of Chemistry.

**7.3.1** The course was reviewed by Professor Bassam Izzuddin, who rated it as "GOOD". Professor Izzuddin cited the weekly meetings between the Course Organiser and students as good practice. The Committee also noted the Head of Department's comment about the improvement in application numbers being due to the efforts of the Course Organiser. It was agreed that the Course Organiser should be invited to provide a case study detailing the work done to improve the course's application numbers for the benefit of other Course Organisers.

**Action: SCW**

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

**7.4 MRes in Bioimaging Sciences 2011-2**

**Paper J**

The Committee considered the course review for the MRes in Bioimaging Sciences in the Department of Chemistry.

**7.4.1** It was noted that Dr Marco Mongiello had reviewed the course and had rated it as "SATISFACTORY" due to his concerns about the sustainability of the course. Dr Mongiello had also noted several instances of good practice including the structure of the programme which blended theory and practice, the intense interaction with faculty and the wide range of projects.

**7.4.2** The Committee noted that that the course was one of a range of award titles in the Department of Chemistry and that therefore sustainability was not an issue.

**7.4.3** It was agreed that the course would be rated as "GOOD" and next reviewed in three years' time.

**7.5 MRes in Chemical Biology of Crop Sustainability and Protection 2011-2**

**Paper K & Ki**

The Committee considered the course review for the MRes in Chemical Biology of Crop Sustainability and Protection in the Department of Chemistry.

**7.5.1** It was noted that the course had been reviewed by Dr Robert Dickinson who had rated it as "GOOD".

**7.5.2** The Committee noted that the course was well-organised with good engagement with students and with a good range of teaching methods. It was agreed that the

Course Organiser's response to the review was satisfactory.

**7.5.3** It was agreed to endorse the rating of "GOOD" and the course would next be reviewed in three years' time.

**7.6 MSc in Pure Mathematics 2011-2**

**Paper L**

The Committee considered the course review for the MSc in Pure Mathematics in the Department of Mathematics.

**7.6.1** It was noted that the course had been reviewed by Dr Stavroula Kontoe who had rated it as "GOOD".

**7.6.2** It was noted that Dr Kontoe found the course to be well-run with high standards of teaching where the assessment of the students was thorough and well-balanced. Communication and feedback to students was also good.

**7.6.3** The Committee agreed the Course Organiser's response was satisfactory and agreed to endorse the rating of "GOOD". The course would next be reviewed in three years' time.

**7.7 MSc in Mathematics and Finance 2011-2**

**Paper M & Mi**

The Committee considered the course review for the MSc in Mathematics and Finance in the Department of Mathematics.

**7.7.1** It was noted that the course had been reviewed by Professor Amparo Galindo who rated it as "GOOD".

**7.7.2** It was noted that Professor Galindo found the course to be very successful and very well run and took on good students who performed very well in general. She cited the use of PG SOLE for obtaining feedback and the use of a personal tutor as incidences of good practice.

**7.7.3** The Committee agreed to endorse the rating of "GOOD". The course would next be reviewed in three years' time.

**7.8 MRes in Controlled Quantum Dynamics 2011-2**

**Paper N**

The Committee considered the course review for the MRes in Controlled Quantum Dynamics in the Department of Physics.

**7.8.1** It was noted that the course had been reviewed by Dr Fariba Sadri who rated it as "GOOD".

**7.8.2** It was noted that Dr Sadri found the course to be a well-run, high quality course with appropriate content, assessment techniques and excellent students. Dr Sadri cited the use of external supervisors of PhD students teaching on the course, the student-led summer schools, the outreach activities and the frequent joint meetings of cohorts and course directors as incidences of good practice.

**7.8.3** The Committee agreed the Course Organiser's response was satisfactory and agreed to endorse the rating of "GOOD". The course would next be reviewed in three years' time.



- 7.9 MSc in Optics and Photonics 2011-2** **Paper O**  
The Committee considered the course review for the MRes in Optics and Photonics in the Department of Physics.
- 7.9.1** It was noted the course had been reviewed by Dr Nick Voulvoulis who had rated it as “GOOD”.
- 7.9.2** It was noted that Dr Voulvoulis cited the recording of one optional lecture, the use of external speakers and an exit questionnaire as incidences of good practice. The Committee agreed the Course Organiser’s response was satisfactory and noted that it was hoped that more lectures would be recorded and that the website and handbook would be modernised.
- 7.9.3** The Committee agreed to endorse the rating of “GOOD”. The course would next be reviewed in three years’ time.
- 7.10 MSc in Actuarial Finance 2011-2** **Paper P**  
The Committee considered the course review for the MSc in Actuarial Finance in the Business School.
- 7.10.1** It was noted that the course had been reviewed by Professor Roger Fenner who had rated it as “GOOD”.
- 7.10.2** It was noted that Professor Fenner cited the recording of lectures, the use of external speakers and student presentations and plagiarism checking as incidences of good practice.
- 7.10.3** The Committee agreed the Course Organiser’s response was satisfactory and agreed to endorse the rating of “GOOD”. The course would next be reviewed in three years’ time.
- 7.11 MSc in Management 2011-2** **Paper Q**  
The Committee considered the course review for the MSc in Management in the Business School.
- 7.11.1** It was noted that the course had been reviewed by Dr Tim Albrecht who had rated it as “GOOD”.
- 7.11.2** It was noted that the course ranked highly in the FT ranking and had received an “Effective Practice” award in 2011. It was noted that Dr Albrecht cited the Communication Hub and use of peer review/feedback as incidences of good practice.
- 7.11.3** The Committee agreed the Course Organiser’s response was satisfactory and agreed to endorse the rating of “GOOD”. The course would next be reviewed in three years’ time.
- 7.12 MSc in Finance 2011-2** **Paper R**  
The Committee considered the course review for the MSc in Finance in the Business School.

- 7.12.1** Professor Lesley Cohen had reviewed the course and had rated it as “GOOD”.
- 7.12.2** It was noted that Professor Cohen had found the course to be very well run, internationally recognised and popular with students. Furthermore she found it to be regularly kept up to date and to take regular soundings from students.
- 7.12.3** It was noted that Professor Cohen had highlighted that an instance of good practice was the use of i-pads on the course. However the student rep from the Business School explained that the MSc in Finance was the only course in the Business School not to use i-pads.

**Post Meeting Note**

The Business School clarified that they had piloted the use of i-pads this year and would be issuing them to all students on the finance programmes next year.

- 7.12.4** The Committee agreed the Course Organiser’s response was satisfactory and agreed to endorse the rating of “GOOD”. The course would next be reviewed in three years' time.
- 7.13 MSc in Risk Management and Financial Engineering 2011-2** **Paper S**  
The Committee considered the course review for the MSc in Risk Management and Finance Engineering in the Business School.
- 7.13.1** Dr William Proud had reviewed the course and had rated it as “GOOD”.
- 7.13.2** The Committee noted that much effort had been spent on addressing the concerns from the previous review and the current reviewer had had no concerns.
- 7.13.3** It was noted that Dr Proud described the provision of a simulated work environment with Reuters and Bloomberg terminals as excellent and that he had cited the use of a weekly email bulletin to students to aid communication as an example of good practice.
- 7.13.4** The Committee agreed to endorse the rating of “GOOD”. The course would next be reviewed in three years' time.

- 8. External Examiners Reports (2011-2)** **Paper T**  
The Committee considered reports from External Examiners for the 2011-12 session. Committee members were reminded that responses to external examiners’ reports are shared with the examiner and published on the College website.  
**Discussion reported in Appendix 1 [not published with the minutes]**

**9. Application Statistics**

- 9.1 Postgraduate Application Numbers for 2013-4 and 2012-3 entry** **Paper U**  
The Committee considered the postgraduate applications numbers made for 2013 entry by 8<sup>th</sup> March 2013 compared with the number of applications made for 2012 entry by 8<sup>th</sup> March 2012.
- 9.1.1** The Committee noted that there had been a decrease of 4.89% overall with

Overseas applications down 3.3%, Home applications down 10.65% and EU applications down by 9.84%.

- 10. Chair's Report** **Paper V**  
The Committee noted a report of actions taken since the last meeting.
- 11. Accreditation Reports**
- 11.1 Institution of Mechanical Engineers** **Paper W**  
The Committee received the accreditation report for the MSc in Advanced Mechanical Engineering from the Institution of Mechanical Engineers.
- 11.1.1** It was noted that this course was now accredited for the first time.
- 12. Postgraduate Surveys**  
It was noted that the PG SOLE module/lecturer and overall course evaluation surveys would be open until midnight on Sunday 21<sup>st</sup> April 2013.
- 13. Senate Executive Summary**  
The Committee noted that the latest executive summaries from Senate are available.
- 14. QAEC Executive Summary**  
The Committee noted that the latest executive summaries from QAEC are available.
- 15. Any Other Business**
- 16. Dates of next meetings 2012-3**
- 16.1 Master's Quality Committee (Business, Engineering & Physical Sciences)**  
Thursday 23<sup>rd</sup> May 2013 at 2pm – 5pm, Council Room, 170 Queen's Gate  
Thursday 11<sup>th</sup> July 2013 at 2pm – 5pm, Ballroom Room, 58 Prince's Gate
- 16.2** It was noted that the dates and deadlines for all other Graduate School meetings can be found at:  
<http://www3.imperial.ac.uk/graduateschool/qualityassurance/graduateschoolcommitteestructure>
- 17. Reserved Areas of Business**
- 17.1 Special Cases** **Paper X**  
The Committee noted the latest report on special cases.