Programme Specification for the
MRes in Catalysis: Chemistry and Engineering

PLEASE NOTE. This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. This specification provides a source of information for students and prospective students seeking an understanding of the nature of the programme and may be used by the College for review purposes and sent to external examiners. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module can be found in the course handbook or on-line at http://www3.imperial.ac.uk/chemistry/admissions/postgraduatecourses/catalysis. The accuracy of the information contained in this document is reviewed by the College and may be checked by the Quality Assurance Agency.

1. Awarding Institution: Imperial College London
2. Teaching Institution: Imperial College London
3. External Accreditation by Professional / Statutory Body: Not currently (but will be explored with the Royal Society of Chemistry)
4. Name of Final Award (BEng / BSc / MEng etc): MRes
5. Programme Title (e.g. Biochemistry with Management): MRes in Catalysis: Chemistry and Engineering
6. Name of Department / Division: Chemistry
7. Name of Faculty: Natural Sciences
8. UCAS Code (or other coding system if relevant): Not applicable
9. Relevant QAA Subject Benchmarking Group(s) and/or other external/internal reference points (http://www.qaa.ac.uk/academicinfrastructure/benchmark/honours/):

The main aims of master's degree programme include:
- to extend students' comprehension of key chemical concepts related to catalysis and so provide them with an in-depth understanding of the subject in a holistic manner, with particular emphasis on the interface between chemistry and engineering.
- to provide students with the ability to plan and carry out experiments independently and assess the significance of outcomes
- to develop in students the ability to adapt and apply methodology to the solution of unfamiliar types of problems
- to instil a critical awareness of advances at the forefront of the chemical science discipline
- to prepare students effectively for professional employment or doctoral studies in the chemical sciences, particularly the vitally important catalysis sector.

Activities to be undertaken by the student in this degree programme are given below:

Research training
- Project-specific experimental skills.
- Accessing literature.
- Planning, including evaluation of hazards and environmental effects.
- Making oral presentations, writing reports, including critical evaluation.
- Defending dissertation in viva with academic assessors.
- Participating in colloquia.

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Research project
- Implementation of planned experiments.
- Recording of data and their critical analysis.
- Dissertation.
- Outcome potentially publishable.

Advanced studies
- In area of specialism to support research topic.
- Complementary studies outside, but cognate to, area of specialism.

Problem-solving
- Development of general strategies including the identification of additional information required and problems where there is not a unique solution.
- Application of advanced studies to the solution of problems.

Professional studies
- Ethics and societal responsibilities.

Students are expected to develop a wide range of different abilities and skills. These may be divided into three broad categories:

Physical sciences/engineering-related cognitive abilities and skills
- the ability to demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to the subject areas identified above
- the ability to apply such knowledge and understanding to the solution of qualitative and quantitative problems mostly of a familiar nature
- the ability to recognise and analyse problems and plan strategies for their solution
- skills in the evaluation, interpretation and synthesis of chemical information and data
- skills in the practical application of theory using computer software and models
- skills in communicating scientific material and arguments
- Information technology (IT) and data-processing skills, relating to chemical information and data.
- the ability to adapt and apply methodology to the solution of unfamiliar problems
- the ability to assimilate, evaluate and present research results objectively
- skills required to undertake a research project the outcome of which is of a quality that is potentially publishable.

Physical sciences/engineering-related practical skills
- skills in the safe-handling of chemicals (and equipment), taking into account their physical and chemical properties, including any specific hazards associated with their use and the ability to conduct risk assessments
- skills required for the conduct of documented laboratory procedures involved in synthetic, analytical and pilot plant work, in relation to inorganic and organic systems and engineering apparatus.
- skills in the monitoring, by observation and measurement, of chemical and physical properties, events or changes, and the systematic and reliable recording and documentation thereof
- skills in the operation of standard chemical and engineering instrumentation
- the ability to interpret and explain the limits of accuracy of their own experimental data in terms of significance and underlying theory.
- the ability to select appropriate techniques and procedures
- competence in the planning, design and execution of experiments
- skills required to work independently and be self-critical in the evaluation of risks, experimental procedures and outcomes
- the ability to use an understanding of the limits of accuracy of experimental data to inform the planning of future work.
**Generic skills**

- communication skills, covering both written and oral communication (viva, presentation)
- problem-solving skills, relating to qualitative and quantitative information
- numeracy and mathematical skills, including such aspects as error analysis order-of-magnitude estimations, correct use of units and modes of data presentation
- information retrieval skills, in relation to primary and secondary information sources, including information retrieval through online computer searches
- IT skills
- interpersonal skills, relating to the ability to interact with other people and to engage in team working
- time management and organisational skills, as evidenced by the ability to plan and implement efficient and effective modes of working
- skills needed to undertake appropriate further training of a professional nature.
- problem-solving skills including the demonstration of self-direction and originality
- the ability to communicate and interact with professionals from other disciplines
- the ability to exercise initiative and personal responsibility
- the ability to make decisions in complex and unpredictable situations
- independent learning ability required for continuing professional development.

All students graduating are expected to demonstrate that they have acquired the knowledge, abilities and skills in the areas identified in the following sections:

- Knowledge base extends to a systematic understanding and critical awareness of topics which are informed by the forefront of the discipline
- Problems of an unfamiliar nature are tackled with appropriate methodology and taking into account the possible absence of complete data
- Experimental work is carried out independently and with some originality
- Substantial research project at the forefront of the discipline is completed effectively
- Generic skills are developed appropriately for professional practice.

**10. Level(s) of programme within the Framework for Higher Education Qualifications (FHEQ):**

<table>
<thead>
<tr>
<th>Programme</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor’s (BSc, BEng, MBBS)</td>
<td>Level 6</td>
</tr>
<tr>
<td>Integrated Master’s (MSci, MEng)</td>
<td>Levels 6 and 7</td>
</tr>
<tr>
<td>Master’s (MSc, MRes)</td>
<td>Level 7</td>
</tr>
</tbody>
</table>

**11. Mode of Study:** Full Time

**12. Language of Study:** English

**13. Date of production / revision of this programme specification:** July 2014

**14. Educational aims/objectives of the programme**

The programme aims/objectives are to:

- Produce postgraduates equipped to pursue careers in catalytic science at the interface between chemistry and engineering, in industry, the public sector and non-governmental organisations;
- Develop the ability to undertake research in multidisciplinary teams at this interface;
- Develop a knowledge of a range of basic and advanced concepts focused around catalysis;
- Develop research and analytical skills related to catalytic science in its principal settings;
- Develop oral and written scientific presentation skills;
- Attract the most motivated science and engineering graduates, both from within the UK and from overseas;
- Develop new areas of teaching in response to the advance of scholarship and the needs of vocational training.
15. Programme Learning Outcomes

- **Knowledge and Understanding**

**Knowledge and Understanding of:**

A. Core concepts in catalysis – introduction to the roles played by catalysis, key catalytic targets, the right catalyst for the process, the role engineering plays and how this translates to industry;
B. research techniques, including information retrieval, experimental design, chemical synthesis, process modelling, reactor design and laboratory safety;
C. detailed knowledge and understanding of the essential facts, concepts, principles and theories relevant to the student’s project; management and communication skills, including problem definition, project design, decision processes, teamwork, written and oral reports, scientific publications.

Teaching/learning methods and strategies

- Acquisition of the above knowledge and understanding (15.A-15.C) is through a combination of lectures, seminars, coursework and research.
- Throughout, the students are encouraged to undertake independent reading both to supplement and consolidate what is being taught / learnt and to broaden their individual knowledge and understanding of the subject.
- Assessment of the knowledge base is through assessed project work (15.A-15.C).

- **Skills and other Attributes**

**Intellectual Skills:**

Able to:

D. analyse and solve catalytic challenges using an integrated multidisciplinary approach;
E. integrate and evaluate information;
F. formulate and test hypotheses using appropriate experimental design and statistical analysis of data;
G. plan, conduct and write-up a programme of original research.

Teaching/learning methods and strategies

- Intellectual skills are developed through the teaching and learning methods outlined above under Knowledge and Understanding.
- Experimental design and statistical skills are developed in lectures and subsequently in the individual research project. Individual, formative and summative feedback is given to students by the project supervisors. The feedback on the proposal submitted in December, provides important summative feedback on student progress in understanding the topic.
- Assessment is through journal club, unseen written examinations and the individual research project (proposal, dissertation, oral presentation and viva).

**Practical Skills:**

Able to:

H. plan and execute safely a series of experiments;
I. use laboratory–based methods to generate data;
J. analyse experimental results and determine their strength and validity;
K. prepare technical reports;
L. give technical presentations;
M. use the scientific literature effectively;
N. use computational tools and packages.
Teaching/learning methods and strategies

- Practical skills are developed through the teaching and learning programme outlined above (and in Knowledge and Understanding section).
- Practical experimental skills (15.I to 15.K) are developed through project work.
- Skills 15.L and M are taught and developed through feedback on reports written and presentations made as part of coursework assignments.
- Skill 15.N is developed through the literature report, journal club and supervised research project.
- Skill 15.O is taught and developed through project work.
- Practical skills are assessed through the literature report and the research project dissertation and talk.

Transferable Skills:

Able to:
- O. communicate effectively through oral presentations, computer processing and presentations, written reports and scientific publications;
- P. apply statistical and modelling skills;
- Q. management skills: decision processes, objective criteria, problem definition, project design and evaluation, risk management, teamwork and coordination;
- R. integrate and evaluate information from a variety of sources;
- S. transfer techniques and solutions from one discipline to another;
- T. use Information and Communications Technology;
- U. manage resources and time;
- V. learn independently with open-mindedness and critical enquiry;
- W. learn effectively for the purpose of continuing professional development.

Teaching/learning methods and strategies

- Transferable skills are developed through the teaching and learning programme outlined above and in the Knowledge and Understanding section.
- Skill 15.P is taught through coursework and developed through feedback on assessed reports and oral presentations.
- Skill 15.Q is taught through lectures and practical work and developed, as appropriate, during the individual research project.
- Skill 15.R is developed in the research group meetings.
- Skill 15.S is developed through feedback on the journal club presentations and proposal.
- Skill 15.T is a core activity of the research projects and is additionally taught in lectures.
- Skill 15.U is taught in lectures developed through project work and individual learning.
- Skill 15.V is developed throughout the course within a framework of staged coursework deadlines.
- Although not explicitly taught, skills 15.W and 15.X are encouraged and developed throughout the course, which is structured and delivered in such a way as to promote them.
- 15.P to 15.X are all assessed in the student’s research proposal and project.

16. The following reference points were used in creating this programme specification

- Student Handbooks for Courses approved by Senate of Imperial College (MRes in Green Chemistry, MRes in Bioimaging Sciences and MRes in Drug Discovery)
17. Programme structure and features, curriculum units (modules), ECTS assignment and award requirements

The programme is only offered as a full-time, one-year course and leads to the MRes degree. Students begin their lecture programme with core courses spanning the first term (October-December) and second term (January-March). The taught courses are assessed by exams in January and May. In the second term students also participate in Journal Clubs. In October students choose a 9-month (December-August) multidisciplinary research project. They present a research proposal on the topic of their research in late November and a dissertation and oral presentation in September. In mid-September, a viva is held on the research topic.

The overall pass mark is 50% and the percentage weighting of marks contributing to the degree are given in the following table:

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Taught Element (30%)</th>
<th>Contribution to overall degree</th>
<th>Research Element (70%)</th>
<th>Contribution to overall degree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exams</td>
<td></td>
<td>20%</td>
<td>Research Proposal</td>
<td>10%</td>
</tr>
<tr>
<td>Journal Club</td>
<td></td>
<td>10%</td>
<td>MRes Dissertation</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Oral Presentation</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Viva</td>
<td>5%</td>
</tr>
</tbody>
</table>

The ECTS assigned to the course is given in the following table with 90 total ECTS for the course:

<table>
<thead>
<tr>
<th>Course Element</th>
<th>ECTS Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taught (Exams and Journal Club)</td>
<td>25</td>
</tr>
<tr>
<td>Research (Research Proposal, MRes Dissertation, Viva and Oral Presentation)</td>
<td>65</td>
</tr>
</tbody>
</table>

Year One:

Term one:

Students choose a research project from a list of one-page abstracts (typically around 40) after discussion with academic staff during the first two weeks of the course. Each research project has two supervisors, each from different academic disciplines (typically one from chemistry and one from engineering or materials). Under the guidance of their supervisors, students write a research proposal for submission at the end of term.

Students begin their taught lecture programme in this term, which cover both core and optional topics. In total, the students cover 4 core topics (equivalent to 5 courses in length as one counts double) and 2 optional topics. The core topic taught in this term is:

- Catalytic reaction engineering with selected lectures (24 in total) from: CE2-04-02 Reaction engineering I (Dr Marcos Millan-Agorio), CE3-02 Reaction Engineering II (Dr Clemens Brechtelsbauer), CE4-20 Pharmaceutical process development (Dr Andreas Kogelbauer, Dr Clemens Brechtelsbauer, Dr Frantisek Stepanek, Mr Richard Escott). This course will count double the credit of the chemistry course and will continue into Term Two.

The optional topics are:

- 4.15 Modern applications of inorganic chemistry in industry - 8 lectures, chemical industry staff, organised by Dr Mimi Hii
- 4.110 Green chemistry - 10 lectures, Prof. Charlotte Williams

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Term Two:

The students continue their lecture courses with the core courses:

- 4.18 Palladium catalysis in organic synthesis - 8 lectures, Dr Mimi Hii
- 4.O10 Catalytic asymmetric synthesis – 8 lectures, Dr. Chris Cordier and Dr Jordi Burés
- 4.023 The kinetics of catalysis - 8 lectures, Dr Jordi Burés

Four further optional courses are also available for the students to take:

- 4.I11 Green solvents - 8 lectures, Prof. Tom Welton (examined by essay – not under exam conditions)
- 4.I6 Ultrasound and microwaves for chemical synthesis - 8 lectures, Dr Lickiss
- 4.I7 Inorganic chemistry with computers not chemicals - 8 lectures, Dr Tricia Hunt
- 3.I3 Inorganic mechanisms and catalysis – 9 lectures, Dr George Britovsek

In February and March, the students take part in two Journal Club sessions in which the critically evaluate key publications related to topical catalysis. This is an assessed transferable skills course, which aims to develop presentation skills, whilst encouraging scientific debate, and providing the opportunity to broaden scientific knowledge. At each meeting students will work together in a group and make a presentation about a seminal high impact paper. This will be followed by a chaired discussion/debate about the paper. Students are assessed on their ability to organise the presentation in a logical manner, the use of clear power-point slides, the clarity of the presentation and its scientific content.

The students also begin their research project in the laboratory of their supervisors in December.

Term Three:

Students present their research findings at a one-day MRes Oral Presentation day held in mid-September. The research projects will be finished and the MRes Dissertation will be handed in beginning of September. Project assessment is based on a written MRes Dissertation, performance in the Oral Presentation and in the viva held in the presence of the supervisors and an External Assessor(s). These External Assessors will be academics from other institutions or industrialists working in the area of catalysis. Both the Oral Presentations and viva will take place a few days before the MRes Examination Board meeting.

18. Support provided to students to assist learning (including collaborative students, where appropriate).

- Students attend an Induction Session by the Course Directors in the first week of term. At the induction, students receive a copy of the MRes Student Handbook, which includes course details and assessment guidelines for Research Proposal and MRes thesis, as well as the lecture course timetable. Course Directors explain the course structure and assessment methods to the students.
- Students are given a Day One Safety Induction by the Course Directors.
- Staff:student ratios for research training of 2.1 or greater.
- A large community of postgraduate research students and postdoctoral research workers working in the Department of Chemistry Imperial College.
- Students attend Catalysis, Sustainability and Advanced Inorganics (CSAI) section colloquia 2-3 times a term, where visiting speakers are invited to give a variety of talks within the research area of catalysis. These are not assessed but attendance is compulsory.
- Library and other learning resources and facilities at South Kensington campus.
- Dedicated student computing facilities in the Chemistry and Engineering Departments.
- Extensive research facilities for chemical and engineering research.
- A postgraduate staff - student committee, which meets three times per year.
- In addition to the Departmental Postgraduate Senior Tutor, a Personal Tutor is assigned to each student from among the MRes supervisors, who assists students with personal
problems and advise on pastoral and academic issues. The Course Directors are also available to assist students.

- Student e-mail and open personal access to staff including the Course Directors.
- Access to student counsellors on the South Kensington site.
- Access to Teaching and Learning Support Services, which provide assistance and guidance, e.g. on careers and English language support.

19. **Criteria for admission:**

- The minimum qualification for admission is normally an upper Second Class Honours degree in a subject closely aligned to catalysis, for example Chemistry, Engineering, Materials Science etc. from an UK academic institution or an equivalent overseas qualification.
- Where an applicant has a lower degree qualification but has additional experience (e.g., in industry) and has presented well at interview, a special cases for admission may be submitted to the Director of Postgraduate Studies at Chemistry Department by the Course Directors.
20. Processes used to select students:

- UK applicants (and where possible applicants based in continental Europe) are invited to Imperial College for a site tour and interview.
- Overseas applicants will be interviewed by telephone.
- Offers made to students are initiated by Course Directors but the applicants will be informed by Imperial College Registry.

21. Methods for evaluating and improving the quality and standards of teaching and learning

a) Methods for review and evaluation of teaching, learning, assessment, the curriculum and outcome standards:

The external examiner system and Boards of Examiners are central to the process by which the College monitors the reliability and validity of its assessment procedures and academic standards. Boards of Examiners comment on the assessment procedures within the College and may suggest improvements for action by relevant departmental teaching Committees.

The Faculty Studies Committees and the Graduate Schools’ Postgraduate Quality Committees review and consider the reports of external examiners and accrediting bodies and conduct periodic (normally quinquennial) and internal reviews of teaching provision. Regular reviews ensure that there is opportunity to highlight examples of good practice and ensure that recommendations for improvement can be made.

At programme level, the Head of Department/Division has overall responsibility for academic standards and the quality of the educational experience delivered within the department or division. Postgraduate Staff – Student Committee, held each term, will report to Departmental Teaching Committee.

There is also peer review of lectures at random intervals.

b) Committees with responsibility for monitoring and evaluating quality and standards:

The Senate oversees the quality assurance and regulation of degrees offered by the College. It is charged with promoting the academic work of the College, both in teaching and research, and with regulating and supervising the education and discipline of the students of the College. It has responsibility for approval of changes to the Academic Regulations, major changes to degree programmes and approval of new programmes.

The Quality Assurance Advisory Committee (QAAC) is the main forum for discussion of QA policy and the regulation of degree programmes at College level. QAAC develops and advises the Senate on the implementation of codes of practice and procedures relating to quality assurance and audit of quality and arrangements necessary to ensure compliance with national and international standards. QAAC also considers amendments to the Academic Regulations before making recommendations for change to the Senate. It also maintains an overview of the statistics on completion rates, withdrawals, examination irregularities (including cases of plagiarism), student appeals and disciplinary proceedings.

The Faculty Studies Committees and Graduate School Postgraduate Quality Committees are the major vehicle for the quality assurance of undergraduate / postgraduate courses respectively. Their remit includes: setting the standards and framework, and overseeing the processes of quality assurance, for the areas within their remit; monitoring the provision and quality of e-learning; undertaking reviews of new and existing courses; noting minor changes in existing programme curricula approved by Departments; approving new modules, changes in module titles, major changes in examination structure and programme specifications for existing programmes; and reviewing proposals for new programmes, and the discontinuation of existing programmes, and making recommendations to Senate as appropriate.
The **Faculty Teaching Committees** maintain and develop teaching strategies and promote interdepartmental and inter-faculty teaching activities to enhance the efficiency of teaching within Faculties. They also identify and disseminate examples of good practice in teaching.

**Departmental Teaching Committees** have responsibility for the approval of minor changes to course curricula and examination structures and approve arrangements for course work. They also consider the details of entrance requirements and determine departmental postgraduate student numbers. The Faculty Studies Committees and the Graduate School Postgraduate Quality Committees receive regular reports from the Departmental Teaching Committees.

The Postgraduate Staff – Student Committee and the Boards of Examiners also have responsibility to monitor and evaluate the quality and standards of the course.

c) **Mechanisms for providing prompt feedback to students on their performance in course work and examinations and processes for monitoring that these named processes are effective:**

- Postgraduate Staff – Student Committee.
- Meetings with project supervisors.
- Meetings with Course Directors.

d) **Mechanisms for gaining student feedback on the quality of teaching and their learning experience and how students are provided with feedback as to actions taken as a result of their comments:**

- Taught Courses Anonymous Feedback Forms
- PG Student Online Evaluation (PG SOLE) survey
- Postgraduate Staff – Student Committee
- Meetings with project supervisors
- Meetings with Course Directors
- Direct feedback to External Examiner at External Examiner’s Meeting

Actions taken as a result of the students’ comments will be sent to the students by email.

e) **Mechanisms for monitoring the effectiveness of the personal tutoring system:**

- Postgraduate Staff – Student Committee.
- Direct feedback to External Examiner at External Examiner’s Meeting

f) **Mechanisms for recognising and rewarding excellence in teaching and in pastoral care:**

Members of staff are encouraged to reflect on their teaching, in order to introduce enhancements and develop innovative teaching methods. Each year College awards are presented to academic staff for outstanding contributions to teaching, pastoral care or research supervision. A special award for Teaching Innovation, available each year, is presented to a member of staff who has demonstrated an original and innovative approach to teaching. Nominations for these awards come from across the College and students are invited both to nominate staff and to sit on the deciding panels.

Students are asked to vote for the ‘Best Lecturer’ from their taught lecture courses at the end of the spring term to recognise and award the staff’s outstanding teaching on the course.

g) **Staff development priorities for this programme include:**

- Development of multidisciplinary research programmes between physical science and engineering researchers.
- Staff appraisal scheme and institutional staff development courses.
22. Regulation of Assessment

a) Assessment Rules and Degree Classification:

For postgraduate taught programmes: The Pass Mark for postgraduate taught courses is 50%. In order to be awarded a result of merit, a candidate must obtain an aggregate mark of 60% or greater; a result of distinction requires an aggregate mark of 70% or greater.

Where appropriate, a Board of Examiners may award a result of merit where a candidate has achieved an aggregate mark of 60% or greater across the programme as a whole AND has obtained a mark of 60% or greater in each element with the exception of one element AND has obtained a mark of 50% or greater in this latter element.

Where appropriate, a Board of Examiners may award a result of distinction where a candidate has achieved an aggregate mark of 70% or greater across the programme as a whole AND has obtained a mark of 70% or greater in each element with the exception of one element AND has obtained a mark of 60% or greater in this latter element.

b) Marking Schemes for postgraduate taught programmes:

The Pass Mark for all postgraduate taught course modules is 50%. Students must pass all elements in order to be awarded a degree.

c) Processes for dealing with mitigating circumstances:

For postgraduate taught programmes: A candidate for a Master's degree who is prevented owing to illness or the death of a near relative or other cause judged sufficient by the Graduate Schools from completing at the normal time the examination or Part of the examination for which he/she has entered may, at the discretion of the Examiners,

(a) Enter the examination in those elements in which he/she was not able to be examined on the next occasion when the examination is held in order to complete the examination,

or

(b) be set a special examination in those elements of the examination missed as soon as possible and/or be permitted to submit any work prescribed (e.g. report) at a date specified by the Board of Examiners concerned. The special examination shall be in the same format as specified in the course regulations for the element(s) missed.

Applications, which must be accompanied by a medical certificate or other statement of the grounds on which the application is made, shall be submitted to the Academic Registrar who will submit them to the Board of Examiners.

d) Processes for determining degree classification for borderline candidates:

For postgraduate taught programmes: Candidates should only be considered for promotion to pass, merit or distinction if their aggregate mark is within 2.5% of the relevant borderline. Nevertheless, candidates whom the Board deems to have exceptional circumstances may be considered for promotion even if their aggregate mark is more than 2.5% from the borderline. In such cases the necessary extra marks should be credited to bring the candidate's aggregate mark into the higher range.

e) Role of external examiners:

The primary duty of external examiners is to ensure that the degrees awarded by the College are consistent with that of the national university system. External examiners are also responsible for approval of draft question papers, assessment of examination scripts, projects and coursework (where appropriate) and in some cases will attend viva voce and clinical examinations. Although external examiners do not have power of veto their views carry considerable weight and will be
treated accordingly. External examiners are required to attend each meeting of the Board of Examiners where recommendations on the results of individual examinations are considered. External examiners are required to write an annual report to the Rector of Imperial College which may include observations on teaching, course structure and course content as well as the examination process as a whole. The College provides feedback to external examiners in response to recommendations made within their reports.

23. Indicators of Quality and Standards

The External Examiner writes a report which is passed to the Executive Committee of the Graduate School, the Head of the Chemistry Department, and the MRes Course Directors for comments and action if required.

24. Key sources of information about the programme can be found in

- Postgraduate Prospectus, Imperial College of Science, Technology & Medicine (available on-line http://www.imperial.ac.uk/pgprospectus
- MRes course booklet (available on-line http://www.imperial.ac.uk/website to be confirmed).