Programme Title: Polymer Science and Technology

Programme Specification

Awarding Body/Institution: Queen Mary, University of London
Teaching Institution: Queen Mary, University of London
Name of Final Award and Programme Title: MSc Polymer Science and Technology
Name of Interim Award(s): PG Certificate / PG Diploma
Duration of Study / Period of Registration: 1 calendar year
QM Programme Code / UCAS Code(s): J5U7
QAA Benchmark Group: not applicable
FHEQ Level of Award: Level 7
Programme Accredited by: Institute of Materials Mining and Minerals (pending)
Date Programme Specification Approved: May 2012
Responsible School / Institute: School of Engineering & Materials Science

Programme Outline

The new MSc Programme in Polymer Science and Technology will be delivered with 120 credits of taught modules focusing on polymers and polymer composites as well as a 60 credit research project undertaken in our state of the art polymer, composite and elastomer research laboratories and making use of our exceptionally well equipped materials characterisation, materials testing or nano-visualisation research facilities. The modules undertaken will prepare students for independent research as well as focus on topics such as how to examine the structure of different polymers and polymer composite systems experimentally and how this structure has an impact on the observed behaviour of the polymer materials. There is an emphasis on the various different types of materials processing that are currently used as well as the techniques that are being developed. In addition, the programme will examine how to decide what materials are the most suitable for the design of a range of components reflecting upon the environmental impact that specific choices may have.

Aims of the Programme

This programme aims to prepare specialists with advanced skills in polymer science and technology. It will allow students to develop an detailed understanding of how the structure and property relationships of polymers and polymer composites are exploited in an increasing array of engineering applications. It is aimed that the students completing this programme will be able to develop novel materials or design high technology products for a wide range of industries. The programme aims to
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1. Teach advanced analytical and experimental techniques that allow students to examine the structure as well as the behaviour of polymer materials in order to provide an advanced core of knowledge and skills.
2. Teach advanced research skills in the area of polymers or polymer composites.
3. Teach modern processing techniques that are used in practice.
4. Enhance the taught components of the programme on a pioneering research project.
5. Provide students with insight into the latest advanced developments in the polymer sector.
6. Train students to the required level to undertake PhD level independent research.

What Will You Be Expected to Achieve?

Students who complete this programme will be trained to work in a wide range of industries that either design or develop polymer components or those sectors that develop new and advanced lightweight materials for a wide range of applications. In addition students will have been given an ideal preparation for undertaking a PhD in a related discipline.

Academic Content:

| A1 | A detailed understanding of the relationship between polymer structure and the behaviour of polymers and polymer composites. |
| A2 | An up to date understanding of the latest methods of manufacturing of polymer and polymer composites. |
| A3 | An advanced knowledge of the various methods used to characterise the structure and the behaviour of polymers and polymer composites. |

Disciplinary Skills - able to:

| B1 | Undertake independent research on a topic relating to polymers or polymer composites |
| B2 | Understand how to select suitable polymer materials for a wide range of different engineering applications. |
| B3 | Establish the best way to manufacture specific polymer components |
| B4 | Understand the role of sustainable materials choices in engineering design |

Attributes:

| C1 | Engage critically with knowledge. |
| C2 | Understand the economic and environmental imperatives that are making polymers the materials of choice for a wide range of different engineering applications. |
| C3 | Undertake independent research using state of the art processing, characterisation and testing facilities. |
| C4 | Research Capacity and Information expertise |

How Will You Learn?

Through a wide range of different interactions including lectures, tutorials, laboratory classes, exercise classes and project supervisions. It is expected that the programme will demand between 1800 and 2000 hours in total to complete. About 10% of
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this time will be in scheduled lectures.
A significant amount of independent personal study is anticipated as part of this degree.

How Will You Be Assessed?
The taught modules will be both through both coursework as well as by using examinations. The details are as outlined in the individual module specifications. The examinations will all take place in the standard college examination period in May / June. The final project thesis will be assessed and the student will also complete a presentation as well as a oral examination.

How is the Programme Structured?
60 credits of taught modules will be taught in first semester from September until December before and a further 60 credits of taught modules will be taught in the second semester from January until April. All the taught examinations will be in the standard examination period in May / June.
A 60 credit polymer research project will be completed after the examination period in semester 3 (from June - September). Preparation for this research project will begin in the module on research techniques taken in the first semester.

<table>
<thead>
<tr>
<th>Module Title</th>
<th>Module Code</th>
<th>Credits</th>
<th>Level</th>
<th>Module Selection Status</th>
<th>Academic Year of Study</th>
<th>Semester</th>
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<tr>
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What Are the Entry Requirements?

It is envisioned that the standard student will be a graduate from an engineering, materials or physical science background, who wishes to advance their knowledge of both polymers and polymer composites. The standard entry requirement is that the student to have secured at least a 2i or equivalent qualification. A high 2ii grade (>55%) may be considered for students with an appropriate additional track record of experience or achievement in the polymer sector. A minimum of IELTS 6.5 or equivalent is required for none native English speakers.

How Do We Listen and Act on Your Feedback?

The Staff-Student Liaison Committee provides a formal means of communication and discussion between Schools and its students. The committee consists of student representatives from each year in the school/institute together with appropriate representation from staff within the school/institute. It is designed to respond to the needs of students, as well as act as a forum for discussing programme and module developments. Staff-Student Liaison Committees meet regularly throughout the year.

Each school operates a Learning and Teaching Committee, or equivalent, which advises the School/Institute Director of Taught Programmes on all matters relating to the delivery of taught programmes at school level including monitoring the application of relevant QM policies and reviewing all proposals for module and programme approval and amendment before submission to Taught Programmes Board. Student views are incorporated in this Committee’s work in a number of ways, such as through student membership, or consideration of student surveys.

All schools operate an Annual Programme Review of their taught undergraduate and postgraduate provision. The process is normally organised at a School-level basis with the Head of School, or equivalent, responsible for the completion of the school’s Annual Programme Reviews. Schools/institutes are required to produce a separate Annual Programme Review for undergraduate programmes and for postgraduate taught programmes using the relevant Undergraduate or Postgraduate Annual Programme Review pro-forma. Students’ views are considered in this process through analysis of the NSS and module evaluations.

Academic Support

During induction the students will be welcomed to the college by the programme leader. Early on in the programme the students will select an project supervisor based upon a wide choice of different project areas. This academic will then also act as a personal tutor. Many of the modules are taught to small classes and so a high level of personal support will also be available from
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the course coordinators in the majority of the taught modules.

Programme-specific Rules and Facts

The programme follows the standard QMUL guidelines for MSc delivery.

Specific Support for Disabled Students

Queen Mary has a central Disability and Dyslexia Service (DDS) that offers support for all students with disabilities, specific learning difficulties and mental health issues. The DDS supports all Queen Mary students: full-time, part-time, undergraduate, postgraduate, UK and international at all campuses and all sites.

Students can access advice, guidance and support in the following areas:
- Finding out if you have a specific learning difficulty like dyslexia
- Applying for funding through the Disabled Students’ Allowance (DSA)
- Arranging DSA assessments of need
- Special arrangements in examinations
- Accessing loaned equipment (e.g. digital recorders)
- Specialist one-to-one "study skills" tuition
- Ensuring access to course materials in alternative formats (e.g. Braille)
- Providing educational support workers (e.g. note-takers, readers, library assistants)
- Mentoring support for students with mental health issues and conditions on the autistic spectrum.

Links With Employers, Placement Opportunities and Transferable Skills

Many of the projects undertaken in the polymer research area within SEMS are industrially supported. It is envisioned therefore that many students will be linked to industrial collaborators and sponsors. In addition SEMS runs 20 field trips each year to manufacturing companies that are available for all students to register for. SEMS also runs two industrial liaison forum each year for the benefit of all the students in the school. This provides an excellent networking opportunity for the students. Extensive careers planning is provided thought out the year by a weekly session run in parallel by the school with the Careers group based at QM.

Programme Specification Approval

Person completing Programme Specification: James Busfield
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<tr>
<td><strong>Person responsible for management of programme:</strong></td>
<td>Steve Dunn / Ton Peijs</td>
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<tr>
<td><strong>Date Programme Specification produced/amended by School Learning and Teaching Committee:</strong></td>
<td>01/05/12</td>
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