

Programme of study for the integrated degree of PhD and MSc (Complex Particulate Products and Processes)¹

Year One (a total of 150 credits in taught modular courses will be taken as well as the research project)

- The candidate will commence research under the direction of their supervisor(s) from term 3.
- Compulsory specialised subject modules:

CAPE5901M Functional Analysis Semester 2 15 credit
CAPE5902M Reverse Engineering Semester 1 30 credits
CAPE5903M Manufacturing Semester 1,2,3 30 credits
CAPE5905M Professional and Research Skills Sem 3 60 credits
CAPE5300M Chemical Products Design and Development 15 credits

Alongside these taught modules, candidates are required to study 30 credits of PhD research. PGRs will be required to pass at least 120 taught credits in order to progress on the programme.

Year Two (a total of 30 credits in taught modular courses will be taken as well as the research project)

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- The candidate will continue research under the direction of their supervisor(s)
- Compulsory specialised subject modules:

CAPE5904M New Product Semester 1 (15 credits)
LUBS5247M Managing for Innovation Semester 2 (15 credits)

Alongside these taught modules, candidates are required to study 150 credit of PhD research

PGRs who have been successful in the assessed modules and research components during Year 2 of study, will undergo a transfer assessment process at the end of Year Two.

PGRs will be required to pass at least 150 taught credits and successfully Transfer to full PhD status in order to progress on the programme.

Years Three and Four

- The candidate will continue research under the direction of their supervisor(s)

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme Integrated degree of PhD and MSc (Complex Particulate Products and Processes)

1. Learning Outcomes

On completion of the programme PGRs should have shown evidence of being able:

- to demonstrate in-depth, but also broad-based and interdisciplinary, specialist knowledge and mastery of techniques relevant to Fluid Dynamics (selected from the CDT themes: Reacting Flows, Mixing and Safety; Environmental Flows; Geophysical Flows; Microflows and Heat Transfer; Particulate Flows, Sediments and Rheology; and cross-cutting tools and techniques): to demonstrate a sophisticated understanding of concepts, information and techniques at the forefront of the discipline;
- to exhibit mastery in the exercise of generic and subject-specific intellectual abilities including fundamental theory, mathematical modelling, numerical methods and experimental techniques;
- to demonstrate a comprehensive understanding of techniques applicable to their own research or advanced scholarship;
- to take a proactive and self-reflective role in working and to develop professional relationships with others;
- proactively to formulate ideas and hypotheses and to develop, implement and execute plans by which to evaluate these;

1 To be read in conjunction with the general Programme of Study for the Integrated degrees of PhD and Master (MA, LLM or MSc)

INTEGRATED DEGREE OF PHD AND MSC (COMPLEX PARTICULATE PRODUCTS AND PROCESSES)

- critically and creatively to evaluate current issues, research and advanced scholarship in the discipline.
- Undertake a team research project and be able to plan, research, execute and analyse the results from an appropriate programme of work.

2. Transferable (Key) Skills

PGRs will have had the opportunity to acquire the following abilities as defined in the modules specified for the programme:

- the skills necessary to undertake a higher research degree and/or for employment in a higher capacity in industry or area of professional practice;
- evaluating their own achievement and that of others;
- self direction and effective decision making in complex and unpredictable situations;
- independent learning and the ability to work in a way which ensures continuing professional development;
- critically to engage in the development of professional/disciplinary boundaries and norms;
- work effectively in an external environment e.g. industry, overseas laboratory.

3. Learning Context

For Masters (Taught) PGRs the learning context will include the analysis of, and decision making in, complex and unpredictable situations. The structure of the programme will provide breadth and/or depth of study and opportunities for drawing upon appropriate resources and techniques. Opportunities will be provided for PGRs to develop:

- high level interests and informed opinions;
- develop to a high level their design and management of their learning activities ;
- develop to a high level their communication of their conclusions;
- make an original contribution to the field.

PGRs will be expected to engage in the exercise of autonomous initiative in their study and work in professional environments.

4. Assessment

Achievement for the degree of Master (taught programme) will be assessed by a variety of methods in accordance with the learning outcomes of the modules specified for the year/programme and will involve the achievement of the PGRs in:

- evidencing an ability to conduct independent in-depth enquiry within the discipline;
- demonstrating the ability to apply breadth and/or depth of knowledge to a complex specialist area;
- drawing on a range of perspectives on an area of study;
- evaluating and criticising received opinion;
- make reasoned judgements whilst understanding the limitations on judgements made in the absence of complete data;
- Presenting work in a variety of ways e.g. oral presentation to academic groups, lay public; examination, viva, coursework;
- The written style and overall presentation of the thesis.