

Programme of study for the Integrated degree of PhD and MSc (Fluid Dynamics): part-time variant (duration: 6 years and 8 months (at 60% FTE))¹ 2024/25

Entry Requirements

Applicants will normally be required to have obtained a relevant degree *at least* equivalent to a UK upper second class (2:1) honours degree. PGRs whose first language is not English will normally be required to have achieved at least 6.0 on IELTS (with no component below 5.5) or an equivalent English language qualification.

There is normally one entry point for the integrated degrees of PhD and Master in September/October of each academic session.

Year One (a total of 90 credits in taught modular courses will be taken, with time also dedicated over the summer (180 hours) to selecting their research project and undertaking initial reading)

- Compulsory training and skills module:
- SOEE5260M Professional Development & Skills 1 (15 credits)
- SOEE5261M Professional Development & Skills 2 (15 credits)

- Compulsory specialised subject modules:
COMP5455M Data-Driven Fluid Dynamics (15 credits)
MATH5453M Foundations of Fluid Dynamics (30 credits)
MECH5890M Research Evidence (15 credits)

At the end of the first year (following the August examination boards) the Fluid Dynamics CDT Management Committee will assess the performance of the student on the basis of achievement in the module assessment, required training and other activity. Students will be required to pass at least 75 taught credits in order to progress on the programme.

Year Two (a total of 90 credits in taught modular courses will be taken as well as continuing to work on the research project to complete a literature review (180 hours))

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

- Compulsory training and skills module:
- SOEE5262M Professional Development & Skills 3 (15 credits)

- Compulsory specialist subject module:
MECH5770M Computational Fluid Dynamics Analysis (15 credits)
MECH5875M Multidisciplinary Team Project (45 credits)

- Candidates are required to take one (15 credits) of the following options:
COMP5930M Scientific Computation (15 credits)
SOEE5835M Advanced Atmosphere and Ocean Dynamics (15 credits)

Other semester one optional modules will be approved. Candidates are advised to discuss this with their supervisors.

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

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At the end of the second year the Fluid Dynamics CDT Management Committee will assess the performance of the student on the basis of achievement in the module assessment, required training and other activity. Students will be required to pass at least 150 taught credits and to have completed a satisfactory literature review.

Years Three onwards

- The candidate will continue research under the direction of their supervisor(s)
- The First Formal Progress Report will be due by the end of month 26 (November of year three)
- The Transfer Report will be due by the end of month 31 (April of year 3):
 - The transfer viva will normally be held during month 32 (May of year 3)
 - If minor additions/corrections are required these will normally be completed by the end of month 36 (September of year 3) but a longer time scale may be set by the Transfer Panel (in accordance with University regulations)
- An Annual Progress Report will be submitted by the end of month 8 (May) of years four, five and six (and also year seven if thesis submission is not completed or imminent).

Thesis Submission Deadline

Candidates are normally expected to submit their thesis within the funding period (ie by the end of month 8 of year 6) however the Thesis Submission Deadline is 8 year and 8 months.

Learning Outcomes / Transferable Key Skills / Learning Context / Assessment – overall programme Integrated degree of PhD and MSc (Fluid Dynamics)

1. Learning Outcomes

On completion of the programme students 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: 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;
- 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

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

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- 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) students 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 students 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.

Students 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 students 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.