

Job Description

Lecturer in Flight Mechanics

Department: Mechanical Engineering

Grade: 8

Location: UCL Bloomsbury Campus, London

Reports to

Head of Department

About the Department

UCL Mechanical Engineering has been pioneering the development of engineering education, having taught the core discipline for over 170 years. UCL was home to the UK's first-ever Professor of the Mechanical Principles of Engineering, Eaton Hodgkinson, in 1847. It was also where Sir Alexander Blackie William Kennedy introduced organised laboratory practicals in university education training; a world-leading educational innovation at the time.

Today our students are taught core engineering disciplines and supervised in individual and group research projects by academics that are recognised research world-leaders in their fields. In the latest Research Excellence Framework (REF 2014), over 90% of the Department's research was judged "world-leading" or "internationally excellent".

At UCL Mechanical Engineering, we develop and apply core competencies to produce world-class research into a wider range of engineering challenges than most would imagine. Amongst many other avenues we are:

- Developing manufacturing processes and new properties of additively manufactured materials for improved energy absorption, vibration damping, and space structures
- Modelling novel 'lighter than air' materials for stratospheric balloons, building constructions, and solar power stations
- Designing the greenest aero-engines and novel sustainable fuels
- Studying the flow of red blood cells in channels thinner than a human hair

Further information is available at <https://mecheng.ucl.ac.uk/>

About the Faculty

The Faculty of Engineering Sciences currently comprises eleven academic departments that undertake research and training across a broad range of disciplines. Our teaching programmes are focused on subjects that have the greatest impact on the world around us, and their content is informed by internationally leading research. Further information is available at www.ucl.ac.uk/engineering.

UCL is host to a flourishing community of engineers and scientists, conducting world-leading research, and supported by exceptionally strong links with governmental organisations and industry. Within the Faculty of Engineering Sciences, there are eleven academic departments undertaking research and education across a great range of disciplines on a global scale. Our scientists and engineers take discoveries from life sciences, pure maths, psychology and many other areas, mix them together, add their own innovations and produce technical solutions the world needs. The products, processes and students we produce change the world we live in, and with our teaching, we aim to take bright, thoughtful, creative people and give them the knowledge, skills, and experience they need to engineer a better world through innovative undergraduate and postgraduate degree programmes. In 2014, the Faculty of Engineering launched a new undergraduate degree programme – Integrated Engineering Programme based in Bloomsbury.

Further details may be found at <http://www.engineering.ucl.ac.uk/integrated-engineering/>.

Main purpose of the job

The Department wishes to strengthen, and broaden, its current research activities through the recruitment of an exceptional lecturer in *Flight Mechanics*, with a proven research track record in spacecraft mechanical design or space flight dynamics and control.

The candidate will be expected to contribute to one of the Department's main research areas, support teaching activities and student research projects.

The person appointed will already have made a contribution to their field, demonstrated through having a strong publication record, securing research grants, and possessing a high-quality teaching portfolio.

Candidates will be required to demonstrate research excellence through a strong publication track record, and to provide further evidence of research income stream from both research councils and industry.

Duties and responsibilities

- To develop and lead research in the field of *Flight Mechanics* to international standing.
- To attract funding for research from national and international sources working with departmental colleagues, other departments within UCL and in collaboration with other national and international research institutions.
- To publish world-class peer-reviewed journal articles and other research outputs such as conference proceedings on a regular basis and be willing to disseminate research findings to benefit wider society through multi-media.
- To manage post-doctoral research assistants and supervise research students undertaking PhDs and EngDs related to the engineering specialisation.
- To work with colleagues to develop new and exciting curricula for undergraduate and post-graduate programmes and short courses.
- To prepare teaching and learning materials to a high standard so as to transfer knowledge to undergraduate and postgraduate students in specialist and non-specialist areas.
- To supervise and assist with supervision of undergraduate and taught graduate (Masters) including group and individual projects.

- To work with the Professional Services team to maintain records so as to monitor student progress, achievement and attendance.
- To provide pastoral care and support to students.
- To work with colleagues across college in committee work and to take part in external committee work that is beneficial to the candidate's career development at UCL.
- To participate in the administration of the department's programmes of study and other activities as requested.
- To maintain own continuing professional development.
- To actively follow and promote UCL policies, including Equal Opportunities.
- To maintain an awareness and observation of fire and health and safety regulations.
- To carry out any other duties commensurate with the grade and purpose of the post.

All academic staff are expected to demonstrate their ongoing commitment to academic excellence; that is, to the conduct of research, publication, teaching, enabling and other forms of knowledge transfer, at the highest levels of international achievement. More information on UCL standards is available at www.ucl.ac.uk/excellence/.

This job description reflects the present requirements of the post, and as duties and responsibilities change/develop, the job description will be reviewed and be subject to amendment in consultation with the postholder.

Person Specification

Criteria	Essential or Desirable	Assessment method (Application/Interview)
Qualifications, experience and knowledge		
PhD in Aerospace or Mechanical Engineering, or relevant disciplines	Essential	Application
Substantial postdoctoral research experience in an area relevant to Flight Mechanics following the award of a PhD degree.	Essential	Application
Knowledge and expertise in engineering areas pertinent to Flight Mechanics, especially in the research areas of spacecraft mechanical design and space flight dynamics and control.	Essential	Application/Interview
Experience of lecturing and assessment at the undergraduate and/or Masters level.	Essential	Application/Interview
Experience of management and organisation of research projects.	Essential	Application/Interview
Experience of working collaboratively in multidisciplinary teams involving, for example, other academics and/or engineers from industry.	Essential	Application/Interview
Experience of programme maintenance and management.	Desirable	Application/Interview
Experience of supervision of doctoral/postdoctoral research students.	Desirable	Application/Interview
A track record of obtaining external research funding.	Desirable	Application/Interview
Experience of curriculum design.	Desirable	Application/Interview
Skills and abilities		
Ability to conduct high-quality research, reflected in the authorship of high-quality publications, or other research outputs, in an area relevant to your discipline.	Essential	Application/Interview
Effective skills in teaching and other forms of public presentation.	Essential	Application/Interview
Ability to supervise academic work by students.	Essential	Application/Interview
Ability to manage time and work to strict deadlines.	Essential	Application/Interview
Excellent interpersonal, oral and written communication skills.	Essential	Application/Interview
Ability to work collaboratively.	Essential	Application/Interview
Ability to share in organisation and management of taught programmes.	Essential	Application/Interview
Personal attributes		
Commitment to excellence in academic research.	Essential	Application/Interview

Criteria	Essential or Desirable	Assessment method (Application/Interview)
Commitment to high quality teaching and fostering a positive learning environment for students.	Essential	Application/Interview
Commitment to supporting the work of the Department, the Faculty of Engineering, and the Institution.	Essential	Application/Interview
Commitment to continuous professional development.	Essential	Application/Interview
Commitment to UCL's policy of equal opportunity and the ability to work harmoniously with colleagues and students of all cultures and backgrounds.	Essential	Application/Interview