

**University of Derby Job Description**

# **Job Summary**

## **Job Title**

Researcher in Computational Mechanics

## **College**

College of Science and Engineering

## **Location**

Institute for Innovation in Sustainable Engineering (IISE), Quaker Way, Derby, DE1 3HD

## **Job Reference Number**

0259-24-R

## **Salary**

£28,879 to £43,878 per annum

## **Reports To**

Professor of Composite Materials

## **Line Management Responsibility**

No

# **Job Description and Person Specification**

## **Role Summary**

Having gained proven experience in research and being a specialist in the discipline with a relevant PhD or equivalent, contribute to a particular project (or projects), taking appropriate initiatives, contributing ideas and developing research methodologies and techniques. Contribute as necessary to teaching through supervision of undergraduate or postgraduate students and / or supervision of projects. Publish in reputable outlets and present research findings at conferences.

## **Principal Accountabilities**

1. Under the direction of the Principal Investigator, contribute to the development of new knowledge and techniques to the research project(s).
2. Contribute to the determination of appropriate research methodologies for the project(s).
3. Analyse research findings and determine the need for further investigation.
4. Contribute to the writing up of research findings and dissemination through publications or seminar and conference presentations.
5. Assist with the preparation of proposals and applications to both external and/or internal bodies for funding, contractual or accreditation purposes.
6. Support the supervision of undergraduate projects and postgraduate research students in conjunction with other staff, and provide training and limited teaching as appropriate.
7. Assist in the development of student research skills, for example as part of a postgraduate supervision team.
8. Plan and manage own research activity and initiate research relevant to the discipline or research project(s).
9. Where opportunities exist within the research project(s), support the development and delivery of business engagement activities, developing entrepreneurial links with external organisations.
10. Contribute to the writing of collective bids for funding, and, where funders permit, write individual bids for funding with appropriate support.
11. Undertake appropriate training and staff development.
12. Provide guidance as required to other colleagues working on related research project(s).
13. Assist and help informally students working in the same research discipline.
14. Develop internal and external contacts with other academic staff to form collaborative relationships and assist with their research project(s).
15. Understand own development needs and formulate a personal development plan.
16. Observe and implement University policies and procedures.

## **Person Specification**

### **Essential Criteria**

#### **Qualifications**

* PhD (pending or awarded) or equivalent experience in Computational Mechanics, Applied Mathematics or Applied Physics

#### **Experience**

* Evidence of modern software engineering experience for Multi-Scale and Multi-Physics simulations
* Experience in Integrated computational materials engineering (ICME) tools

#### **Skills, knowledge & abilities**

* Knowledge in one or more of the following computational methodologies:
	+ Multiscale bridging strategies
	+ Failure analyses
	+ Ab-Initio, Molecular Dynamics, Finite Element Method
	+ Extended programming skills for User-Defined-Subroutines
* An appropriate level of digital capability with practical experience of applications
* Evidence of sufficient breadth or depth of research methodologies and techniques to work in research area
* Evidence of engagement in high-quality research activity
* Ability to communicate complex information clearly both in writing and presentations
* Analytical ability to facilitate conceptual thinking, innovation and creativity
* Ability to build relationships and work collaboratively with colleagues, internally and externally
* Ability to use initiative and creativity to solve problems in a research context
* Self-motivated and able to work independently and as part of a team

#### **Business requirements**

* Willingness and ability to attend review and technical meetings with research partners in Europe
* Willingness and ability to attend conferences, seminars or similar events abroad
* Demonstrate competences, core behaviours and supplementary behaviours that support and promote the University’s core value
* Flexible to the needs of others
* Committed to ensuring a high-quality student experience
* Committed to a high-performance culture, fostering continuous improvement and driving quality
* Able to take a flexible approach to work
	+ Travel between sites and occasionally overseas for work
	+ Some evening and occasional weekend work

### **Desirable Criteria**

#### **Qualifications**

* Fellowship Status with the Higher Education Academic (HEA)

#### **Experience**

* Experience of writing publications for journals and presenting research at conferences
* Experience of generating research or knowledge exchange income

# **Benefits**

As well as competitive pay scales, we offer generous holiday entitlement. We also offer opportunities for further salary progression based on performance, and the opportunity to join a contributory pension scheme.

For more information on the benefits of working at the University of Derby go to [the Benefit pages of our website](https://www.derby.ac.uk/jobs/why-join-derby/).

# **Our People**

The University of Derby is committed to promoting equality, diversity, and inclusion. However you identify, we actively celebrate the knowledge, experience and talents each person brings. Our students come from a wide range of backgrounds; therefore we are particularly interested to hear from applicants who will help our leaders and teams be more reflective of our student population.