Candidate Information

Position:	Research Fellow
School/Department:	Mechanical & Manufacturing Engineering
Reference:	20/108487
Closing Date:	Monday 7 December 2020
Salary:	£33,797 to £36,914 per annum
Anticipated Interview Date:	Tuesday 15 December 2020
Duration:	This is a 3 year fixed term position.

JOB PURPOSE:

To join the Advanced Composites Research Group (ACRG) in the School of Mechanical and Aerospace Engineering at Queen's University Belfast, and contribute to world-leading research in the computational modelling of composite materials and structures.

Contribute to the development of a high-fidelity computational tool which will enable designers and operators to assess the influence of in-service damage, on operability, of the fibre reinforced composite eFoil propulsion system proposed for a new generation of maritime vessels.

MAJOR DUTIES:

1. Develop a detailed research project plan with the Principal Investigator to meet expected deliverables and milestones within the Artemis project.
2. Execute the agreed project plan and undertake whichever research tasks are required.
3. Be an effective and collegiate member of the ACRG.
4. Produce regular research progress reports and deliver progress presentations to members of the ACRG and project consortium partners.
5. Develop research proposals, for submission to funding bodies, under the guidance of the Principal Investigator.
6. Prepare material for publication in leading journals and presentations at international conferences.
7. Partake in outreach activities when requested.
8. Carry out administrative tasks associated with the research project to ensure that the project is completed on time and within budget. These might include organisation of project meetings and documentation, financial control, risk assessment of research activities.
9. Develop new funding proposals under the guidance of the Principal Investigator.
10. Assist in the supervision of PhD students within the ACRG.
11. Supervise undergraduate final year projects and MSc thesis projects.
12. Carry out occasional demonstrating or lecturing duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
13. Keep abreast of new developments in the specific area of research and related disciplines.
14. Maintain project-related social media sites.

Planning and Organising:

1. Develop a planned programme of work to ensure agreed milestones and deliverables are met.
2. Plan own day-to day activities within the agreed research framework.
3. Develop a timeline for the submission of research proposals if required.

Resource Management Responsibilities:

1. Ensure research resources are used in an effective and efficient manner.
2. Provide guidance as required to support staff, within the research group, and any PhD/MSc/UG students who may be assisting with research.

Internal and External Relationships:

1. Liaise on a regular basis with the project consortium, colleagues, students and industry partners.
2. Build internal contacts and participate in internal networks for the exchange of information and to form relationships for future collaboration.
3. Join external networks to share information and ideas.
4. Contribute to the School's outreach programme by establishing links with local community groups, industries etc.

ESSENTIAL CRITERIA:

1. A PhD in the field of computational modelling of composite materials or structures and a four-year undergraduate degree in Mechanical or Aerospace Engineering.
2. At least 3 years relevant research experience
3. A sufficient breadth of knowledge of composite materials and their utilisation.
4. A knowledge of composite damage mechanics.
5. A thorough understanding of the Finite Element Method and computational modelling.
6. Experience in Fortran coding.
7. An understanding of structural testing and material characterisation methods.
8. Experience in using ABAQUS finite element software
9. Writing user subroutines for ABAQUS finite element software
10. Experience of coding using Python scripting language.
11. A working knowledge of computational damage mechanics.
12. Ability to plan and manage a research project.
13. Ability to contribute to broader management and administrative processes.
14. Sufficient breadth and depth of specialist knowledge in the discipline and of research methods and techniques to work within established research programmes.
15. Ability to communicate complex information clearly.
16. Excellent communication skills
17. Ability to build contacts and participate in internal and external networks.
18. Demonstrable intellectual ability.
19. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. A working knowledge of computational damage mechanics.
2. Experience of working with industry on research programmes.