



Job title	Research Associate/Fellow	Job family and level	Research and Teaching Level 4 Training Grade/ Level 4
School/ Department	Faculty of Engineering - Resilience Engineering Research Group	Location	Pavement Research Building, University Park Campus

Purpose of role

To deliver research as part of a collaborative team and contribute to the achievement of specific research objectives for the Lloyd’s Register Funded Project “Next Generation Prediction Methodologies and Tools for System Safety Analysis”.

	Main responsibilities (Primary accountabilities and responsibilities expected to fulfil the role)	% time per year
1	To develop modelling approaches and safety assessment methodologies to predict the failure probability or frequency of industrial safety critical systems	60%
2	To collaborate in writing papers for submission to journals and conferences and prepare progress reports on the results of research.	20%
3	To present the results of research at project progress meetings and at conferences.	10%
4	To assist in the co-ordination of the research and related administrative tasks, including liaising with members of the Project Management Committee, and Technical Advisory Committee.	10%

Person specification

	Essential	Desirable
Skills	<ul style="list-style-type: none"> • Excellent Research skills. • Excellent verbal and written communication skills. • Relevant IT and programming skills. • Proven ability to develop strong working relationships, with academic and industrial partners. • Ability to work to deadlines and prioritize tasks. 	<ul style="list-style-type: none"> • Familiarity with safety assessment and risk modelling.
Knowledge and experience	<ul style="list-style-type: none"> • Experience of developing fault trees to express the causality of a system failure mode. • Experience of developing Petri net models to predict the performance of a system module which features dependencies or complex maintenance strategies. • An understanding of modelling methods which solve Phased Missions. • Experience in a research environment. • A proven record of high quality publications 	<ul style="list-style-type: none"> • Knowledge of the fault tree and event tree methods used in probabilistic safety assessment. • Experience of producing software to predict the performance of engineering systems • Experience of developing Markov models to solve system reliability problems.
Qualifications, certification and training (relevant to role)	<ul style="list-style-type: none"> • An undergraduate degree in an engineering discipline, mathematics, physics or computer science • Hold (or shortly to be awarded) a PhD or equivalent in a topic related to the modelling of engineering systems. 	



The University strongly endorses Athena SWAN principles, with commitment from all levels of the organisation in furthering women's careers. It is our mission to ensure equal opportunity, best working practices and fair policies for all.

Expectations and behaviours

The University has developed a clear set of core expectations and behaviours that our people should be demonstrating in their work, and as ambassadors of the University's strategy, vision and values. The following are essential to the role:

- Valuing people** Is always equitable and fair and works with integrity. Proactively looks for ways to develop the team and is comfortable providing clarity by explaining the rationale behind decisions.
- Taking ownership** Is highly self-aware, looking for ways to improve, both taking on board and offering constructive feedback. Inspires others to take accountability for their own areas.
- Forward thinking** Driven to question the status quo and explore new ideas, supporting the team to "lead the way" in terms of know-how and learning.
- Professional pride** Sets the bar high with quality systems and control measures in place. Demands high standards of others identifying and addressing any gaps to enhance the overall performance.
- Always inclusive** Ensures accessibility to the wider community, actively encouraging inclusion and seeking to involve others. Ensures others always consider the wider context when sharing information making full use of networks and connections.

Key relationships with others

