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| **Career Family:** | Engineering | | **Reports to:** | Research Software Engineering team leader | |
| **Role Title:** | Graduate Software Engineer | | **No. of employees/ASWs FRM for: (direct line management)** | 0 | |
| **Level:** | 3 | | **Total No. of staff in resource management chain** | 0 | |
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| Overall Purpose: | | | | | |
| This is a graduate entry-level learning role designed to be a route in to a research software engineering career.  Research software engineers (RSEs) combine professional software skills with an understanding of research and play an essential role in modern research. The RSE projects team in the Software Engineering Group collaborates with scientists and engineers across the organisation on software projects and promotes improvements in software practices through advice, training and resources.  This role involves contributing to a wide variety of research software development projects under the supervision of more experienced members of the team. Projects could involve prototyping new applications of virtual reality technology, adapting a simulation framework to be used in a new context or making experimental data more easily accessible to international scientists through a web portal.  A portion of time will be spent assisting UKAEA scientists and engineers with their software activities through contributions to software training and initiatives and direct help and advice. Projects and activities will be structured to build up the experience and knowledge needed taking into account organisational needs and the individual’s career aspirations. | | | | | |
| Accountabilities: | | | | | |
| * Develop and improve software for use in research and technology groups * Work with scientists and engineers to understand their software needs and help find the right solutions * Provide software development and research computing help and support to scientists and engineers * Research and evaluate the applicability of new technologies for particular purposes * Organise own time to deliver tasks and maintain communication about progress * Contribute to improving software development practices across the organisation, for example by assisting with training workshops, giving talks and writing guidance and examples * Engage with relevant research and RSE communities to learn and contribute through online channels and at events * Participate in graduate scheme projects and development activities | | | | | |
| Budget Responsibility: | | | | | |
| N/A | | | | | |
| Specific Qualifications/Experience: | | | | | |
| * Degree in a relevant subject such as Physics, Maths, Engineering or Computer Science * Experience of developing working, understandable software in more than one programming language (ideally including both interpreted and compiled languages) * Ability to apply some software design principles and enthusiasm to develop this further * Ability to use good software engineering practices such as version control and testing * Some familiarity with Linux operating systems and the command line * Appetite to research and learn new technologies * Sufficient scientific and mathematical background to discuss scientific software with domain experts * Ability to work as part of a team and communicate effectively in both technical and non-technical terms   Desirable:   * Knowledge of any of our core scientific languages: Python, C, C++, Fortran * Experience of web development, databases and SQL * Familiarity with some tools and techniques for data analysis and visualisation * Experience of writing software for use by others * Experience of giving talks and/or helping to run events | | | | | |
| Other Duties: | | | | | |
| By agreement, the post holder may get involved in:   * Assisting with outreach activities, eg for schools or the public * Contributing to experimental operations on a shift basis in a specialist control room role | | | | | |
| **Technical/ Professional** | 100% | **Project Management** | 0% | **People Management** | 0% |
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| **Generic descriptors for all roles in this job family and level**  (This is standard information, please do not amend) | | | | | |
| The first two descriptors relate to an overview of the role for the level within this job family | | | | | |
| Role Snapshot | | As a graduate entry level, this is a learning role. Work plans& decisions are designed& reviewed by supervisors or more experienced engineers. | | | |
| Typical Representative Duties | | Perform a variety of engineering tasks designed to provide experience& familiarization with staff, methods, practices,& programs of the organization. This may include operating, maintaining& demonstrating equipment Manage own development towards building knowledge& skills. | | | |
| Decision Making | | May choose an approach or procedure for addressing a work task, under guidance. Receives direct supervision. | | | |
| Analytical Skills | | Executes tasks requiring analysis& interpretation, based on clearly defined assignments. Learns& uses established working processes& methods.Because of differing situations, has latitude to consider which procedure to use, with supervision. Develops& designs simple systems using own initiative. | | | |
| Project Role | | As a graduate, serves in a learning role on a project. Works on assigned tasks or discrete work packages within a project. Understands how tasks fit in with broader projects. | | | |
| Budget Management | | Not applicable. | | | |
| Communication & Influencing | | Effective in dealing with others in everyday working relationships, including contacts to request or provide information. Explain issues verbally& in writing. Advises those outside own area of expertise, explaining technical issues in a non-technical way. | | | |
| External Links | | Works mainly with internal colleagues has interaction with external partners (in conjunction with senior colleagues). | | | |
| People Management | | Not applicable. | | | |
| Typical Technical Expertise, Experience & Skills | | Graduate Entry – Bachelors in relevant subject area. | | | |
| UKAEA Organisational Knowledge | | Understands internal colleague requirements, project requirements& the context in which they are operating. | | | |
| Behavioural Competencies  These are the typical competencies required at this level but may be tailored to reflect specific job types. Refer to the full competency matrix for examples of behaviours at each level. | | | | | |
| Passion | | Adapts tactics to meet objectives. Helps shape new ways of doing things with diverse thinking. Contributes positively to change in a collaborative manner to achieve the organisations goals. | | | |
| Innovation | | Seeks Improvements and is open to new ideas. Makes suggestions for improvements to working practices taking into consideration the impact on others. | | | |
| Accountability | | Acts on and overcomes obstacles, even in difficult situations and takes personal responsibility for outcomes.   Understands what is meant by hazard and risk and how this applies to the workplace and considers working safely as an integral part of the job. Is able to undertake and complete risk assessments.  Proactively seeks feedback and is committed to learning and continuous improvement. | | | |
| Business-minded | | Invests time and effort on value-added activities. Delivers work within resource constraints and meets client / partner expectations. | | | |
| Delivery | | Calculates impact of actions or words. Helps to develop an environment in which people communicate honestly and openly. Adapts techniques/styles to consider the differing needs of others   Supports colleagues and ensures that their views are heard. Speaks positively of others.  Sees multiple relationships. Anticipates obstacles and thinks ahead about next steps, recognising the wider implications. | | | |