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| **Career Family:** | Engineering | | **Reports to:** | | http://intranet.ccfe.ac.uk/communications/logos/Authority_BLK_AW.pngSoftware Engineering Group Leader | |
| **Role Title:** | **Student Software Engineer** | | **No. of employees/ASWs FRM for: (direct line management)** | | 0 | |
| **Level:** | Sandwich Student | | **Total No. of staff in resource management chain** | | 0 | |
| **Overall Purpose:** | | | | | | |
| The sandwich student within the CODAS & IT department assists with the design, development maintenance and support of software and data systems that are provided by the Software Engineering and Control & Data Acquisition groups.  The systems and software worked on may include those for machine control/protection, data collection, data access, analysis and visualisation. | | | | | | |
| **Accountabilities:** | | | | | | |
| * Assist with design and development of data access and visualisation tools. * Assist with design and development of new features for JET machine control/protection systems. * Implement and assist with developer tools for use within the department or the wider organisation * Contribute to research, discussion and exploratory work in support of any of the team’s objectives. * Provide help and support for software and scientific computing to local and remote users and collaborators. | | | | | | |
| **Budget Responsibility:** | | | | | | |
| N/A. | | | | | | |
| **Specific Qualifications/Experience:** | | | | | | |
| * Studying for an undergraduate degree in computer science or software engineering or similar (including joint honours with other STEM subjects) with an industrial placement year. * Experience of programming in both a compiled and interpreted language with attention to code clarity * Knowledge of some programming paradigms (eg object orientation, functional) and design principles * Ability to use good software engineering practices such as version control and testing * Basic experience with Windows and Linux/Unix operating systems. * Ability to work as part of a team and communicate effectively in both technical and non-technical terms * Appetite to research and learn new technologies   Desirable:   * Experience with any of our core languages: Python, C, C++ or IDL * Experience of web development * Knowledge of databases and SQL * Knowledge of any aspect of control systems or data acquisition | | | | | | |
| **Other Duties:** | | | | | | |
| Possible involvement in training and outreach activities | | | | | | |
| **Technical/ Professional** | 100% | **Project Management** | 0% | **People Management** | | 0% |
| **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 | | | | | | |
| ***Generic Snapshot*** | *At the undergraduate level, this role involves learning and assistance with engineering tasks.*  *Work plans & decisions are designed & reviewed by supervisors or higher level engineers.* | | | | | |
| ***Typical Representative Duties*** | *Perform a variety of engineering tasks designed to provide learning experience & familiarisation with staff, methods, practices, and contribute engineering resource.*  *This may include operating, maintaining & demonstrating equipment.*  *Manage own development towards building knowledge & skills for finishing their studies.* | | | | | |
| The generic descriptors below relate to specific skills and attributes of the role for the level within this job family | | | | | | |
| ***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 and input from supervisor.* | | | | | |
| ***Project Role*** | *As an undergraduate, provides resource to and 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.*  *Able to provide assistance to those outside own area of expertise and simplify technical issues.* | | | | | |
| ***External Links*** | *Works almost exclusively with internal colleagues and has limited interaction with external partners (in conjunction with senior colleagues).* | | | | | |
| ***People Management*** | *Not applicable.* | | | | | |
| **Knowledge, Skills and Experience** | | | | | | |
| ***Typical Technical Expertise, Experience & Skills*** | *Undergraduate Entry – Studying for a Bachelors/Integrated Masters in relevant subject area.* | | | | | |
| ***UKAEA Organisation Knowledge*** | *Understands internal colleague requirements and 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.** | | | | | | |
| ***Taking Accountability*** | *Accepts full responsibility for self and contribution to the organisation; committed to the delivery of work; truthful and honest; shows strong commitment to organisational success; strong personal drive for results; overcomes difficulties and doesn’t give up* | | | | | |
| ***Level: Core*** | *Honours commitments. Acts consistently in the workplace according to the values of openness and honesty.* | | | | | |
| ***Flexibility*** | *The ability to plan for, adapt to and work with a variety of situations, individuals and groups; understanding the need to change approach in order to meet individual, team and organisational objectives; having a positive attitude to change; ability to cope with ambiguity.* | | | | | |
| ***Level: Core*** | *Accepts the need for flexibility and responds positively to change. Alters focus according to priorities.* | | | | | |
| ***Communication & Influencing*** | *The ability to communicate effectively and influence people at all levels, both orally and in writing; implies an intention to persuade, convince, influence or impress others in order to gain their support; listens to others concerns and conveys information clearly and proactively.* | | | | | |
| ***Level: Core*** | *Listens and communicates clearly and concisely. Maintains an environment in which people communicate honestly and openly. Persuades others through logic, fact and reason.* | | | | | |
| ***Teamwork & Cooperation*** | *Uses interpersonal skills to work co-operatively with colleagues, internal and external partners; works pro-actively across cultures and organisational boundaries; shares information and ideas; encourages diversity of thinking.* | | | | | |
| ***Level: Core*** | *Cooperates with colleagues and supports team members. Contributes positively to the accomplishment of team objectives.* | | | | | |
| ***Self-Development*** | *Openness to feedback, using feedback effectively; willing to learn from experience and aware of impact on others; pursues learning opportunities; and modifies behaviour accordingly; shows commitment to learning and development* | | | | | |
| ***Level: Core*** | *Learns from mistakes and responds to feedback. Is self-aware.* | | | | | |
| ***Innovation & Curiosity*** | *Spots opportunities; simplifies methods; generates creative solutions to work problems; finds new ways to deal with organisational challenges and issues; implements new ideas or approaches; focuses on continuous improvement; solves problems through creative thinking and identifies patterns or connections between situations.* | | | | | |
| ***Level: Core*** | *Seeks Improvements and is open to new ideas. Makes suggestions for improvements to working practices.* | | | | | |
| ***Systematic Thinking & Planning*** | *A methodical and analytical approach to problem solving, planning and decision making; breaks down problems systematically in order to fully understand the implications; sets priorities on a rational basis* | | | | | |
| ***Level: Core*** | *Breaks down problems and recognises patterns. Makes rational decisions and prioritises.* | | | | | |
| ***Commercial Awareness*** | *The ability to use commercial information in buying and selling to support decision making; demonstrates a strong financial awareness and focuses efforts on value added activities; appropriately manages client, partner, collaborators and third party expectations; appropriately withholds information/intellectual property that has commercial value: communicates appropriately with third parties involved in commercial activity with the Authority* | | | | | |
| ***Level: Core*** | *Invests time and effort on value-added activities. Delivers work within resource constraints and meets client / partner expectations.* | | | | | |
| ***Behavioural Safety Competency*** | *The ability to demonstrate safe working in particular an awareness of risk and how these are managed to prevent or minimise injury or loss, taking action where risks are not properly managed.* | | | | | |
| ***Level: Core*** | *Demonstrates an ability to work safely with a good understanding of safe working in particular duty to themselves and others. Is aware of the key hazards relevant to their work and has the confidence to stop the job and raise concerns.* | | | | | |