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| 1. **Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging technology** | | |
| UK-SPEC Competence Requirement | This could include ability to: | Please describe how and why you believe you meet this standard: |
| **A.1. Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology and other relevant developments.**  ***Examples of activities which may help demonstrate this:***  *Engage in formal post-graduate academic study. Learn and develop new engineering theories and techniques in the workplace. Broaden your knowledge of engineering codes, standards and specifications* | • Identify the limits of own personal  knowledge and skills  • Strive to extend own technological  capability  • Broaden and deepen own knowledge base  through research and experimentation |  |
| **A.2. Engage in the creative and innovative development of engineering technology and continuous improvement systems.**  ***Examples of activities which may help demonstrate this:***  *Lead/manage market research, and product and process research and development. Cross-disciplinary working involving complex projects.*  *Conduct statistically sound appraisal of data. Use evidence from best practice to improve effectiveness* | • Assess market needs and contribute to  marketing strategies  • Identify constraints and exploit  opportunities for the development and  transfer of technology within own chosen  field  • Promote new applications when  appropriate  • Secure the necessary intellectual property  (IP) rights  • Develop and evaluate continuous  improvement systems |  |

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| **B. Apply appropriate theoretical and practical methods to the analysis and solution of engineering problems.** | | |
| UK-SPEC Competence Requirement | This could include ability to: | Please describe how and why you believe you meet this standard: |
| **B1. Identify potential projects and** **opportunities**  ***Examples of activities which may help demonstrate this****:*  *Involvement in the marketing of and tendering for new engineering products, processes and systems.*  *Involvement in the specification and procurement of new engineering products, processes and systems.*  *Set targets, and draft programmes and action plans.*  *Schedule activities* | • Establish and help develop solutions to  meet users’ requirements  • Consider and implement new and  emerging technologies  • Enhance engineering practices, products,  processes, systems and services  • Use own knowledge of the employer’s position to assess the viability of opportunities. |  |
| **B2. Conduct appropriate research, and undertake design and development of engineering solutions.**  ***Examples of activities which may help demonstrate this:***  *Carry out formal theoretical research. Evaluate numerical and analytical tools. Carry out applied research on the job. Lead/manage value engineering and whole life costing. Lead design teams. Draft specifications. Develop and test options. Identify resources and costs of options. Produce concept designs, and develop these into detailed designs. Be aware of IP constraints and opportunities.* | • Identify and agree appropriate research methodologies  • Allocate and manage resources  • Develop the necessary tests  • Collect, analyse and evaluate the relevant data  • Undertake engineering design  • Prepare, present and agree design recommendations, with appropriate analysis of risk, and taking account of cost, quality, safety, reliability, appearance, fitness for purpose, security, intellectual property (IP) constraints and opportunities, and environmental impact. |  |
| **B3. Manage implementation of design solutions, and evaluate their effectiveness**  ***Examples of activities which may help demonstrate this:***  *Follow the design process through into product or service realisation and its evaluation. Prepare and present reports on the evaluation of the effectiveness of the designs, including risk, safety and life cycle considerations. Manage product improvement. Interpret and analyse performance. Determine critical success factors* | • Ensure that the application of the design results in the appropriate practical outcome  • Implement design solutions, taking account of critical constraints, including due concern for safety and sustainability  • Determine the criteria for evaluating the design solutions  • Evaluate the outcome against the original specification  • Actively learn from feedback on results to improve future design solutions and build best practice. |  |

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| **C. Provide technical and commercial leadership.** | | | |
| UK-SPEC Competence Requirement | This could include ability to: | | Please describe how and why you believe you meet this standard: |
| **C1. Plan for effective project implementation**  ***Examples of activities which may help demonstrate this****:*  *Lead/manage project planning activities. Produce and implement procurement plans. Carry out project risk assessments. Collaborate with key stakeholders, and negotiate agreement to the plans. Plan programmes and delivery of tasks. Identify resources and costs. Negotiate and agree contracts/work orders* | | • Systematically review the factors affecting the project implementation including safety and sustainability considerations  • Define a holistic and systematic approach to risk identification, assessment and management  • Lead on preparing and agreeing implementation plans and method statements  • Ensure that the necessary resources are secured and brief the project team  • Negotiate the necessary contractual arrangements with other stakeholders (client, subcontractors, suppliers, etc). |  |
| **C2. Plan, budget, organise, direct and control tasks, people and resources.**  ***Examples of activities which may help demonstrate this:***  *Take responsibility for and control project operations. Manage the balance between quality, cost and time. Manage risk register and contingency systems. Manage project funding, payments and recovery. Satisfy legal and statutory obligations. Lead/manage tasks within identified financial, commercial and regulatory constraints* | | • Set up appropriate management systems  • Define quality standards, programme and budget within legal and statutory requirements  • Organise and lead work teams, coordinating project activities  • Ensure that variations from quality standards, programme and budgets are identified, and that corrective action is taken  • Gather and evaluate feedback, and recommend improvements |  |
| **C3. Lead teams and develop staff to meet changing technical and managerial needs**  ***Examples of activities which may help demonstrate this:***  *Carry out/contribute to staff appraisals. Plan/contribute to the training and development of staff. Gather evidence from colleagues of the management, assessment and feedback that you have provided. Carry out/contribute to disciplinary procedures* | | • Agree objectives and work plans with teams  and individuals  • Identify team and individual needs, and  plan for their development  • Reinforce team commitment to professional  standards  • Lead and support team and individual  development  • Assess team and individual performance, and provide feedback. |  |
| **C4. Bring about continuous improvement through quality management**.  ***Examples of activities which may help demonstrate this:***  *Plan and implement best practice methods of continuous improvement, e.g. ISO 9000, EFQM, balanced scorecard. Carry out quality audits. Monitor, maintain and improve delivery. Identify, implement and evaluate changes to meet quality objectives.* | | • Promote quality throughout the  organisation and its customer and supplier  networks  • Develop and maintain operations to meet  quality standards  • Direct project evaluation and propose  Recommendations for improvement |  |

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| **D. Demonstrate effective interpersonal skills.** | | | |
| UK-SPEC Competence Requirement | This could include ability to: | | Please describe how and why you believe you meet this standard: |
| **D1. Communicate in English with others at all levels.**  ***Examples of activities which may help demonstrate this:***  *Reports, letters, emails, drawings, specifications and working papers (e.g. meeting minutes, planning documents, correspondence) in a variety of formats. Engaging or interacting with professional networks.* | | • Lead, chair, contribute to and record  meetings and discussions  • Prepare communications, documents and  reports on complex matters  • Exchange information and provide advice  to technical and non-technical colleagues |  |
| **D2 Present and discuss proposals.**  ***Examples of activities which may help demonstrate this:***  *Presentations, records of discussions and their outcomes.* | | • Prepare and deliver presentations on  strategic matters  • Lead and sustain debates with audiences  • Feed the results back to improve the  proposals  • Raise the awareness of risk |  |
| **D3 Demonstrate personal and social skills**  ***Examples of activities which may help demonstrate this:***  *Records of meetings. Evidence from colleagues of your personal and social skills. Take responsibility for productive working relationships. Apply diversity and anti-discrimination legislation* | • Know and manage own emotions, strengths  and weaknesses  • Be aware of the needs and concerns of  others, especially where related to diversity  and equality  • Be confident and flexible in dealing with  new and changing interpersonal situations  • Identify, agree and lead work towards  collective goals  • Create, maintain and enhance productive  working relationships, and resolve conflicts | |  |

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| **E. Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.** | | |
| UK-SPEC Competence Requirement | This could include ability to: | Please describe how and why you believe you meet this standard: |
| **E1. Comply with relevant codes of conduct**  ***Examples of activities which may help demonstrate this:***  *Work with a variety of conditions of contract. Demonstrate initiative in and commitment to the affairs of your professional institution.* | • Comply with the rules of professional  conduct of own professional institution  • Lead work within all relevant legislation and  regulatory frameworks, including social and  employment legislation |  |
| **E2 Manage and apply safe systems of work**  ***Examples of activities which may help demonstrate this:***  *Undertake formal health and safety training. Work with health and safety legislation and best practice. In the UK, examples include HASAW 1974, CDM regulations, OHSAS 18001:2007 and company safety policies.*  *Carry out safety audits. Identify and minimise hazards. Assess and control risks. Evaluate the costs and benefits of safe working. Deliver strategic health and safety briefings and inductions.* | • Identify and take responsibility for own obligations for health, safety and welfare issues  • Ensure that systems satisfy health, safety and welfare requirements  • Develop and implement appropriate hazard identification and risk management systems and culture  • Manage, evaluate and improve these systems  • Apply a sound knowledge of health and safety legislation. |  |
| **E3 Undertake engineering activities in a way that contributes to sustainable development**  ***Examples of activities which may help demonstrate this:***  *Carry out environmental impact assessments. Carry out environmental risk assessments. Plan and implement best practice environmental management systems, e.g. ISO 14000. Manage best practice risk management systems e.g. ISO 31000. Work within environmental legislation. Adopt sustainable practices. Achieve social, economic and environmental outcomes*. | • Operate and act responsibly, taking account  of the need to progress environmental,  social and economic outcomes  simultaneously  • Use imagination, creativity and innovation  to provide products and services which  maintain and enhance the quality of the  environment and community, and meet  financial objectives  • Understand and secure stakeholder  involvement in sustainable development  • Use resources efficiently and effectively. |  |
| **E4 Carry out and record CPD necessary to maintain and enhance competence in own area of practice**  ***Examples of activities which may help demonstrate this:***  *Keep up to date with national and international engineering issues. Maintain CPD plans and records. Involvement with the affairs of your professional institution. Evidence of your development through on-the-job learning, private study, in-house courses, external courses and conferences* | • Undertake reviews of own development needs  • Plan how to meet personal and organisational objectives  • Carry out planned (and unplanned) CPD activities  • Maintain evidence of competence development  • Evaluate CPD outcomes against any plans made  • Assist others with their own CPD. |  |
| **E5 Exercise responsibilities in an ethical manner**  ***Examples of activities which may help demonstrate this:***  *Give an example of where you have applied ethical principles as described in the Statement of Ethical Principles (Listed on page 33 of UK-SPEC). Give an example of where you have applied/upheld ethical principles as defined by your organisation or company, which may be in its company or brand values* | Please refer to the Statement of Ethical Principles in UK-SPEC, 3rd edition |  |