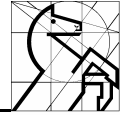


THE CHARTERED ENGINEER and THE INCORPORATED ENGINEER

COMPETENCE AND COMMITMENT (UK-SPEC)



	<p>Chartered Engineers must be competent throughout their working life, by virtue of their education, training and experience, to</p>	<p>Incorporated Engineers must be competent throughout their working life, by virtue of their education, training and experience, to:</p>
<p>A</p> <p>A1</p> <p>A2</p>	<p>Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging technology.</p> <p>maintain and extend a sound theoretical approach in enabling the introduction of new and advancing technology and other relevant developments in mechanical engineering. This could include the ability to:</p> <ul style="list-style-type: none"> • identify limits of personal knowledge and skills; • strive to extend own technological capability; • broaden and deepen own mechanical engineering knowledge base through research and experimentation <p>engage in the creative and innovative development of mechanical engineering technology and continuous improvement systems. This could include the ability to:</p> <ul style="list-style-type: none"> • establish users' needs; • assess marketing needs and contributes to marketing strategies; • identify constraints and exploits opportunities; • promote new applications in mechanical engineering when appropriate • secure the necessary intellectual property; • develop and evaluate continuous improvement systems 	<p>Use a combination of general and specialist mechanical engineering knowledge and understanding to apply existing and emerging technology:</p> <p>maintain and extend a sound theoretical approach to the application of technology in mechanical engineering practice. This could include the ability to:</p> <ul style="list-style-type: none"> • identify the limits of own personal knowledge and skills; • strive to extend own technological capability; • broaden and deepen own knowledge base through new applications and techniques. <p>use a sound evidence-based approach to problem-solving and contribute to continuous improvement. This could include an ability to:</p> <ul style="list-style-type: none"> • establish users' requirements for improvement; • use market intelligence and knowledge of technological developments to promote and improve the effectiveness of mechanical engineering products, systems and services; • contribute to the evaluation and development of continuous improvement systems.
<p>B</p> <p>B1</p> <p>B2</p> <p>B3</p>	<p>To apply appropriate theoretical and practical methods to the analysis and solution of mechanical engineering problems.</p> <p>identify potential projects and opportunities. This could include the ability to:</p> <ul style="list-style-type: none"> • explore new territory within own responsibility for new opportunities; • review the potential for enhancing mechanical engineering products, processes, systems and services; • use own knowledge of the employer's position to assess the viability of opportunities. <p>conduct appropriate research, and undertake design and development of possible solutions. This could include the ability to:</p> <ul style="list-style-type: none"> • identify and agree appropriate research methodologies; • assemble the necessary resources; • carry out the necessary tests; • collect, analyse and evaluate the relevant data; • draft, present and agree design recommendations; • undertake mechanical engineering design. <p>implement design solutions and evaluate their effectiveness. This could include the ability to:</p>	<p>To apply theoretical and practical methods to design, develop, manufacture, construct, commission, operate and maintain mechanical engineering products, processes, systems and services.</p> <p>identify, review and select techniques, procedures and methods to undertake mechanical engineering tasks. This could include an ability to:</p> <ul style="list-style-type: none"> • select the review methodology; • review the potential for enhancing mechanical engineering products, processes, systems and services, using evidence from best practice; • establish an action plan to implement the results of the review. <p>contribute to the design and development of mechanical engineering solutions: This could include an ability to:</p> <ul style="list-style-type: none"> • contribute to the identification and specification of design and development requirements for mechanical engineering products; • identify problems and evaluate possible engineering solutions to meet client needs; • contribute to the design of mechanical engineering solutions. <p>implement design solutions and contribute to their evaluation. This could include an ability to:</p>

	<ul style="list-style-type: none"> ensure that the application of the design results in the appropriate practical outcome; identify the required cost, quality, safety, reliability, appearance, fitness for purpose and environmental impact of the outcome; 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 best practice 	<ul style="list-style-type: none"> secure the resources required for implementation; implement design solutions, taking account of cost, quality, safety, reliability, appearance, fitness for purpose and environmental impact; identify problems during implementation and take corrective action; contribute to the evaluation of design solutions; contribute to recommendations for improvement and actively learn from feedback on results.
C	Provide technical and commercial leadership	Provide technical and commercial management
C1	<p>plan for effective project implementation. This could include an ability to:</p> <ul style="list-style-type: none"> identify the factors affecting the project implementation; lead on preparing and agreeing implementation plans and method statements; ensure the necessary resources are secured and brief the project team; negotiate the necessary contractual arrangements with other stakeholders (client, subcontractors, suppliers etc) 	<p>plan for effective project implementation. This could include an ability to:</p> <ul style="list-style-type: none"> identify the factors affecting the project implementation; prepare and agree implementation plans and method statements; secure the necessary resources and confirm roles in project team; apply the necessary contractual arrangements with other stakeholders (client, subcontractors, suppliers etc)
C2	<p>plan, budget, organise, direct and control tasks, people and resources. This could include an ability to:</p> <ul style="list-style-type: none"> set up appropriate management systems; agree quality standards, programme and budget; 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. 	<p>manage the planning, budgeting and organisation of tasks, people and resources. This could include an ability to:</p> <ul style="list-style-type: none"> operate appropriate management systems; work to the agreed quality standards, programme and budget; manage work teams, coordinating project activities; identify variations from quality standards, programme and budgets, and take corrective action; evaluate performance and recommend improvements.
C3	<p>lead teams and develop staff to meet changing technical and managerial needs. This could include an ability to:</p> <ul style="list-style-type: none"> agree objectives and work plans with teams and individuals; identify team and individual needs and plan for their development; lead and support team and individual development; assess team and individual performance and provide feedback. 	<p>manage teams and develop staff to meet changing technical and managerial needs. This could include an ability to:</p> <ul style="list-style-type: none"> agree objectives and work plans with teams and individuals; identify team and individual needs and plan for their development; manage and support team and individual development; assess team and individual performance and provide feedback.
C4	<p>bring about continuous improvement through quality management. This could include an ability to:</p> <ul style="list-style-type: none"> 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. 	<p>manage continuous quality improvement. This could include an ability to:</p> <ul style="list-style-type: none"> ensure the application of quality management principles by team members and colleagues; manage operations to maintain quality standards evaluate projects and make recommendations for improvement.
D	Chartered Engineers and Incorporated Engineers must each be competent throughout their working life, by virtue of their education, training and experience, to use effective interpersonal skills to:	
D1	<p>communicate in English with others at all levels. This could include an ability to:</p> <ul style="list-style-type: none"> contribute to, chair and record meetings and discussions; prepare letters, documents and reports; exchange information and provide advice to technical and non-technical colleagues. 	
D2	<p>present and discuss proposals. This could include an ability to:</p>	

D3	<ul style="list-style-type: none"> • prepare and deliver appropriate presentations; • lead and sustain debates with audiences; • feed the results back to improve the proposals. <p>demonstrate personal and social skills. This could include an ability to:</p> <ul style="list-style-type: none"> • know and manage own emotions, strengths and weaknesses; • be aware of the needs and concerns of others; • be confident and flexible in dealing with new and changing interpersonal situations; • identify, agree and work towards collective goals; • resolve conflicts and create, maintain and enhance productive working relationships.
E	<p>Chartered Engineers and Incorporated Engineers must each be competent throughout their working life, by virtue of their education, training and experience, to make a personal commitment to professional standards, recognising obligations to society, the profession and the environment. In order to satisfy their commitment, they must:</p> <p>E1 comply with the relevant codes of conduct. This could include an ability to:</p> <ul style="list-style-type: none"> • comply with the rules of professional conduct of own professional body; • work constructively within all relevant legislation and regulatory frameworks, including social and employment legislation; • promote mechanical engineering through relevant IMechE and other institution activities. <p>E2 manage and apply safe systems of work. This could include an ability to:</p> <ul style="list-style-type: none"> • identify and take responsibility for own obligations for health, safety and welfare issues; • ensure that systems satisfy health, safety and welfare requirements; • development and implement appropriate hazard identification and risk management systems; • manage, evaluate and improve these systems. <p>E3 undertake engineering activities in a way that contributes to sustainable development. This could include an ability to:</p> <ul style="list-style-type: none"> • 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 that maintain and enhance the quality of the environment and community, and meet financial objectives; • understand and encourage stakeholder involvement. <p>E4 carry out continuing professional development necessary to maintain and enhance competence in own area of practice. This could include the ability to:</p> <ul style="list-style-type: none"> • undertake reviews of own development needs; • prepare action plans to meet personal and organisational objectives; • carry out planned (and unplanned) CPD activities; • maintain evidence of competence development • evaluate CPD outcomes against the action plans; • assist others with their own CPD, in particular young engineers.

IMECHE GRADING STRUCTURE

Interviewers should grade each section using the following structure. Competence A has to some extent been met through academic formation and therefore interviewers should be seeking to verify whether that knowledge and skills is being applied, and whether knowledge has been broadened and deepened within the context of the applicant's career development.

Level 1 = Performs the activity with significant supervision and guidance; performs basic routine and predictable tasks; little or no individual responsibility. *(This level of competence would not normally be sufficient for election to Membership)*

Level 2 = Performs the activity in a range of contexts; supervision only required in more complex circumstances; some individual responsibility or autonomy. *(This indicates a minimum level of competence for election to Membership, which should be supplemented, by higher levels of competence in the areas most relevant to the field of engineering in which the applicant is employed).*

Level 3 = Performs the activity in some complex and non-routine contexts; significant responsibility and autonomy; can oversee the work of others. *(This indicates a normal level of competence for election to Membership).*

Level 4 = Performs the activity in a wide range of complex and non-routine contexts; substantial personal autonomy; can develop others in the activity. *(This indicates a high level of competence and suitability for election to Membership and possibly Fellowship)*

Applicants for Membership should achieve a minimum level of 2 in each section, with a level of 3 in at least three sections, to be eligible for Corporate Membership. This means that applicants should normally achieve a threshold competence profile from each assessor of two sections at level 2 and three sections at level 3. This part forms the objective assessment.

Applications for Election to Fellowship

Individuals seeking election or transfer to Fellowship will be assessed against the same competence and commitment criteria as described above. However, the applicant should normally score 4 in all sections (there may be one at level 3). Applicants for Fellowship should also demonstrate many of the following qualities:

- hold a position of senior responsibility and/or significant autonomy;
- active development and application of new technologies in engineering and related areas at a senior level;
- applies a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts;
- leadership qualities;
- strong evidence of resource management and/or personnel management and development;
- involvement in policy and strategy making decisions;
- budgetary control;
- promotion of engineering to young engineers and potential engineers;
- highly specialist knowledge in a specific area of engineering; and/or
- possible evidence of presentations, published papers etc.

Members must also demonstrate a commitment to the development of the engineering profession in the broader context and to individual Continuing Professional Development. IMechE recognises that applicants may no longer have hands-on engineering responsibility but their careers may have developed more broadly into senior management or into a specialist role. Individuals who have retired from a position of senior responsibility but who demonstrate continuing commitment to the profession within their CPD may be suitable for election to Fellowship.