

Guidance Notes for CEng Registration Applicants

Introduction

Applications for engineering registration at CEng level are assessed according to the Engineering Council's United Kingdom Standard for Professional Engineering Competence (UK-SPEC). Details of UK-SPEC may be found on the EC website here: <http://www.engc.org.uk/ukspec.aspx>

These guidance notes set out how the Institute of Physics and Engineering in Medicine (IPEM) applies the Engineering Council's UK-SPEC and details IPEM's application process.

IPEM is licensed by the Engineering Council to process applications for CEng through the exemplifying qualifications route or the individual assessment route. The route taken will depend on the academic qualifications, experience and position held at the point of application. Details of the requirements for each of the two routes are given below. It should be noted that an applicant for CEng registration must be a member of IPEM at the point of application.

Exemplifying qualifications route – for applicants with appropriate qualifications

- An approved MEng from an EC accredited or recognised course, OR
- An approved BEng/BSc (Hons) from an Engineering Council accredited or recognised course plus accredited/approved further learning to Masters level.

A database of accredited and recognised courses can be found at: <http://www.engc.org.uk/acad>

Individual assessment route – for applicants without appropriate qualifications

Applicants will be assessed under the individual assessment route if either their graduate qualifications do not meet those required for the exemplifying qualifications route (such as non-accredited MSc/MEng qualifications, non-accredited BEng/BSc (Hons) qualifications, relevant PhD or other non-Engineering Council accredited qualifications) or if they have no graduate qualifications. Dependent on whether the applicant has non-accredited qualifications or no graduate qualifications the applicant would then either provide details of experiential learning (for non-accredited qualifications) or submit a technical report (for no graduate qualifications).

Experiential learning – for applicants with non-accredited qualifications

Applicants will be required to submit a detailed summary of the qualifications they possess outlining the subjects covered, results obtained and any research undertaken. This will be assessed by a panel consisting of the CEng Registrar, the CEng Assistant Registrar and, if required, another CEng assessor. Applicants will then be advised as to whether the qualification(s) they possess is acceptable and, if not, they will be provided with guidance about further learning options. This may include undertaking further qualifications either in whole or in part approved by IPEM or by undertaking assessed work-based learning approved by IPEM or by the submission of a technical report (see below).

Technical report – for applicants with no graduate qualification

Applicants whose career history indicates that they have sufficient appropriate engineering experience and responsibility without graduate qualifications may be authorised to submit a technical report. The applicant will be required to submit a report of up to 10,000 words describing a piece of work done which provides evidence that their knowledge, understanding and application of engineering principles is up to the same level as their peers who have followed the UK-SPEC exemplifying qualifications route. The scope of the report will depend upon the

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applicant's initial qualifications and any subsequent achievement. Its content must be technical: a pure management study is not acceptable.

Professional development

An applicant applying via the **exemplifying qualifications route** will have post qualification experience which must include engineering training and developing responsible experience. The applicant's initial professional development (IPD) marks the transition from an academic environment to an employment environment culminating in the attainment of a role appropriate to that of a Chartered Engineer with a sufficient level of personal responsibility. IPD is essential in the attainment of the required competence and commitment. This is unlikely to be achieved in less than four to five years following qualification. IPD may take place through structured development schemes or be self-managed. In either case, responsibility for managing IPD rests, ultimately, with the applicant.

An applicant applying via the **individual assessment route (experiential learning)** will need to meet the requirements for IPD equivalent to those required if applying via the exemplifying qualifications route. An applicant would be an established practitioner who has progressed independently towards acquiring competence and commitment. The applicant will have to submit an experiential learning report which presents retrospective evidence that previous training and experience has enabled the applicant to meet the competencies and level of responsibility required of a Chartered Engineer.

An applicant applying via the **individual assessment route (technical report)** must have undertaken IPD and gained experience in posts of appropriate responsibility and relevant to clinical engineering over a period of normally at least 15 years. An assessment of a portfolio of retrospective evidence demonstrating the competence and commitment required of a Chartered Engineer will be carried out. Applicants will have considerable responsible experience that will greatly exceed the requirement for the exemplifying qualifications route.

Maintaining competence

Applicants for CEng registration need to provide evidence that competence has been maintained and that it will continue. This is an essential part of recognition as a professional CEng. Successful applicants only retain registration if they remain as a Full Member of IPEM. It is important to realise that seeking registration will entail obligations and an on-going commitment.

How to apply for CEng via IPEM

The first step in applying for CEng registration, by either route, is to contact the IPEM National Office to request an application form or to download the application form from IPEM's website here:

<https://www.ipem.ac.uk/TrainingWorkforce/RegulationandRegistration/EngineeringCouncil.aspx>

Before applying, an applicant may contact the IPEM National Office regarding their qualifications and experience (a detailed CV would be useful to provide). IPEM will pass on this information to the appropriate registrar for consideration and, if necessary, a response regarding the appropriate application route to be taken will be provided. Applications made without prior consideration by a registrar may take longer to process and often have to be re-written.

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Completed applications with the correct supporting documentation and reports must be submitted to the IPEM National Office. In respect of qualifications, a certified copy of each of an applicant's certificates must be provided. An applicant's head of department or one of the applicant's proposers can sign a copy to verify that they have seen the original and that the copy is authentic. **Originals of certificates should not be sent to IPEM.** If the certificates do not provide details of the course content, that is, individual subjects or topics covered including the level/depth duration of coverage, these details must be submitted on a separate sheet attached to each authenticated copy certificate. The detail given should be not more than one A4 size sheet for each qualification.

Missing information will delay an application.

An applicant may apply for recognition of qualifications, as and when achieved, ahead of a full CEng application by completing and returning the 'Application for Recognition of Qualifications Form'. Provided an applicant is a member of IPEM in any category, this recognition will be registered with the Engineering Council and is known as interim registration.

Submission of reports

Depending on the route that an applicant is following for CEng a Professional Review (PR) report will need to be submitted as well as, possibly, an experiential learning report or a technical report as detailed below.

PR report

The PR report should commence after an applicant has completed their first degree. The body of this report should be between 1500 and 2500 words. If a recent portfolio is available, such as an Association of Clinical Scientists (ACS) portfolio, then this may be submitted as supporting evidence and a shorter PR report may refer to the portfolio. The front page of the PR report must include a recent passport style photograph.

The report should be in free text, in chronological order and written in the first person singular. It is the applicant telling the story of their engineering development. Applicants should avoid unclear phrases such as 'liaised with'; 'worked with'; and 'collaborated with'. The report should not be used to thank colleagues for their support. The report must not be a curriculum vitae or a description of the department within which the applicant works. The applicant should make clear their own engineering contribution and responsibility. The report must chronicle the progression of the applicant's IPD and should **clearly link the applicant's experience to the acquiring of the five broad areas of competency that are required of a CEng.** Applicants should include the names and post-nominals of Chartered Engineers by whom they have been trained or with whom they have had professional contact or worked with during their initial professional development.

The record of structured or other professional development should describe the positions that the applicant has held, what they have learnt, how they applied it and how this contributed to gaining the competence required. Engineering details are required. Examples of design, problem solving, risk and safety assessment and quality management are important.

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The applicant should be able to show where and when they have had responsibility and accountability for the exercise of engineering and technical judgement. This will often be through them contributing engineering input into multi-disciplinary projects.

Teaching, financial control, publications, management or supervision, grant applications may all be relevant in meeting the leadership and communication competencies.

The applicant should show evidence of understanding of technical, financial, social and environmental implications of decisions taken.

Where appropriate, the following points are also worthy of mention:

- links with industry
- professional contacts
- membership of professional bodies and committees

The applicant must also describe their current or most recent level of responsibility.

There must be a statement about the applicant's Continuing Professional Development (CPD) and how they fulfil the requirements as well as an outline action plan for future professional development.

The applicant should add a list of publications and formal presentations as an appendix to the report. This appendix can be over and above the guideline word count for the body of the report.

In the case of applicants from academia, lecturing and supervision of post-graduate students can be expanded as can grant applications.

Experiential learning

Having submitted the Application for Recognition of Qualifications Form an applicant may be asked to submit a report giving more detail of the courses undertaken and any further learning they are submitting to meet the 'further learning to Masters level' requirement. An applicant may also be asked to include in the report details of any learning opportunities, research and project works they have been involved with. Once an applicant's educational qualifications are agreed they will be asked to submit a PR Report as detailed above.

Technical report

For those intending to demonstrate underpinning knowledge by the submission of a technical report, applicants may be asked to first submit a *draft* PR report so that a judgment can be made that the applicant is working at CEng level. A longer than standard report may be required and applicants should bring out those aspects of their career that have trained them as an engineer and those aspects that have demonstrated their professional responsibility. If this draft report is agreed then applicants will have two years from an agreed start date to submit their technical report. The technical report must demonstrate that the applicant has equivalent engineering knowledge to their peer group who are able to proceed through the exemplifying qualifications route. The report must contain engineering detail and demonstrate in depth knowledge of the topic on which the applicant is presenting. The precise details will be clearly outlined by an IPeM

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appointed advisor. The standard required is at least that of an MSc dissertation and the style would normally be the same.

Professional review interview (PRI)

All candidates, through either route, will be required to attend a PRI. This will be conducted by a panel made up of two CEng members of IPEM, chosen to have experience in the aspects of the applicant's field of engineering applied to medicine and trained in the requirements for CEng. There may, on occasions, be a third member of the panel if it is felt necessary to have additional expertise present. There may be occasions when the Engineering Council representative sits in on a PRI. This is part of the Engineering Council's process to ensure an equivalence of standards across the various Professional Engineering Institutes (PEIs). There may also be occasions when an additional, less experienced, interviewer sits on the panel as part of the training process. All members of the panel will be introduced to the applicant and their roles explained.

The purpose of the PRI is to explore the applicant's competence and commitment. The panel will be seeking to ensure from both the PR report and the interview that the applicant has attained a sufficient level of competence judged against the criteria set by IPEM based on the UK-SPEC requirements. The applicant should think in advance of aspects of their training and experience that demonstrate their achievement of these competencies.

How IPEM will handle your application

All applicants will receive an acknowledgement of their application.

IPEM will check an applicant's qualifications against the Engineering Council's list of accredited courses. Applicants will be contacted if further information is required about qualifications and consideration may be given to following the individual assessment route. Applicants may need to contact their university to supply details of course content.

IPEM will contact proposers to request a written reference.

For applicants following the exemplifying qualifications route, the PR report will be circulated to the CEng registrars and, in some cases, to one other assessor for review. A decision will be made whether or not to invite the applicant to proceed to PRI. If a PRI is deemed not to be appropriate then a registrar, or an adviser acting on the registrar's behalf, will contact the applicant with the issues arising and recommendations on how to overcome them so that the applicant's PR report can be revised and resubmitted. Once a PR report is approved the applicant will be invited for PRI and will be given the names of the interviewers. PRIs are usually held three times a year but this does vary with the number of applications received.

If CEng registration is recommended by the PRI panel, the application will be submitted to IPEM's Engineering Registration Panel (ERP) who make the final decision and, if approved, the recommendation is sent to the EC for ratification.

If CEng registration is not recommended by the PRI panel and this is confirmed by ERP, the applicant will be given the reasons in writing and the opportunity to discuss this with the registrars.

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For those applicants following the individual assessment route (experiential learning) once the applicant's educational qualifications have been agreed the application will proceed in the same way as that for the exemplifying qualifications route as detailed above.

For those applicants following the individual assessment route (technical report) the applicant's technical report will be circulated to the CEng registrars and one other assessor for review. If it is decided that there is evidence that the applicant is working at CEng level then the application will proceed although acceptance of the draft PR report as suitable does not imply that CEng registration will be achieved. IPEM will appoint an advisor to the applicant and the applicant will be asked to submit a synopsis of their proposed technical report. IPEM will review this report and, if acceptable, will invite the applicant to submit a full technical report. From the agreed start date, an applicant has two years to complete the technical report and submit it to IPEM. Once submitted, the technical report will be assessed by a panel of two IPEM assessors and one independent assessor from PEI. If the panel is satisfied that the report is of the required standard they will invite the applicant to attend an interview (also known as a viva). At the time of submission of a technical report, applicants will be given the opportunity to update their draft PR report which will be handled in the same way as for the exemplifying standards route described above. Once the technical report has been approved, following the viva, a normal PRI will be carried out. If the applicant's PRI is supportive of CEng, the application will be submitted to ERP and, if approved, the recommendation will be submitted to the Engineering Council.

The Engineering Council

The Engineering Council will write to an applicant when their application has been approved. The applicant's name will appear in the national press and on the Engineering Council website where the Engineering Council publishes lists of newly appointed Chartered Engineers. At this stage, the applicant will be able to use the post-nominal letters 'CEng, MIPEM' or 'CEng, FIPEM'.

Application fee

The fees payable to IPEM for CEng applications will be requested by the IPEM office once an application is successful. Annual registration fees will then be due each year with IPEM membership subscription fees. Details of fees can be found here:

<https://www.ipem.ac.uk/AboutIPEM/JoinIPEM/MembershipSubscriptionRates.aspx>

Applicants are reminded of the Engineering Council's 'Regulation 7a' governing fees, and removals/reinstatements to the Register. Requests for removal/reinstatement of IPEM members to the Engineering Council Register will be carried out as part of the engineering registration process.

Appeal procedure

Appeals can only be made on the process used by IPEM not on the outcome of interview and assessments. If an unsuccessful applicant wishes to appeal against a decision that has been made in relation to their application they should write to the Chair of the Engineering Registration Panel (ERP) through the IPEM National Office. The letter will be acknowledged and two senior members of IPEM, who are registered engineers, will be appointed to review the application and submit a report on their findings. The appellant will be informed of the decision.

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