

When should I take my IRSE exams?

Passing the IRSE exam is a significant step towards recognition as a professional engineer within our industry, often in conjunction with gaining IEng or CEng applicable to the wider engineering profession. As such, the exam is aimed at individuals who have sufficient understanding of the industry to confidently answer questions on several topics within the syllabus for each module. Unfortunately, every year there are candidates who fall significantly short of this level, which has caused the Exam Committee to discuss whether to propose any entry level requirement. Ideas have included a minimum period of experience within the industry, or for all exam applications to be countersigned by someone who had previously passed the exam. On balance we have decided against any absolute requirement because no option would filter fairly without introducing barriers for valid candidates, especially those from unusual careers, backgrounds or locations.

Instead we wish to offer some general advice. The most important message is that as aspiring professional engineers, the candidates should understand WHY particular principles and processes are applied, not just WHAT they are. Examiners often see an answer that gives a detailed description of a technical solution, yet it is inappropriate to the circumstances described in the question. Examples of such errors include:

- listing full comprehensive approach locking conditions on a control table when the candidate has already stated in another entry that the route is approach released from red;
- applying generic headway or track circuit calculations to an unsuitable scenario;
- in telecomms modules, going into detail about signalling instead of the telecomms system.

Similarly, whilst it is obviously healthy for candidates to review past papers to practise their technique, candidates should not be relying on particular topics or styles of question to reappear (except where the format is already described in the syllabus, e.g. Module 2 always involves placing signals on a blank layout). At this level of professionalism it is expected that candidates should apply their knowledge of principles and processes to the particular context described in a question, not simply memorise and repeat standard answers for topics.

The reading lists have become rather lengthy and we are reviewing these for relevance, however it should be recognised that they are intended mostly to help expand understanding rather than teach knowledge from the beginning. Some publications listed are quite old so should not be relied upon for current technical detail, nonetheless they give a good insight into how signalling has evolved. For example Red for Danger [LTC Rolt] was first published over 50 years ago (albeit with various updates since), yet contains many wise lessons for signalling engineers and is much more readable than formal textbooks.

As explained, rather than attempting to filter applicants, we encourage you to consider whether you are ready. Often, you could competently tackle your first module(s) based on your current job once you genuinely understand WHY you are

doing things (rather than merely applying rules), whereas to achieve all four modules you may need wider and more responsible industry experience. If you work in a large organisation then seek knowledge and advice from those IRSE members around you, if you work in a more isolated situation then it would be worthwhile seeking advice from the IRSE office or local branch. Viewing the exam study forums and webcasts from exam review meetings may also help. For those readers who have already passed the exam, please offer help to those in the earlier stages of their career to make this decision.

Having decided you have sufficient knowledge, attempt some past papers under exam conditions and have them reviewed by a colleague. For some candidates sitting for 90 minutes with a question paper can be unfamiliar and tiring; a mock exam will help to refine one's time management. The review of your answers could be done by a mentor, study group leader, senior colleague or a fellow candidate; they should consider whether it answers the question asked, is well structured and is well matched to the mark allocations. If you do not have such support, you can review the answers yourself – but do this at least a week after having attempted the paper.

We wish all candidates well, whether applying for the next exam event or preparing for future years.

The IRSE Exam Committee