

DESIGN of ELECTRICAL INSTALLATIONS

COURSE 355: 4 DAYS + Project: Max 8 Candidates

This course provides participants with all the necessary skills and knowledge to design electrical installations. The ability to design is required before new installations are constructed and also when additions or alterations to existing installations are required.

The course develops the knowledge and ability of the candidates to the required level of competence for them to sign the Electrical Installation Certificates required by BS7671.

PARTICIPANTS

The course is intended for candidates who have already attended the 18th Edition C&G 2382 (Course 310) and the Inspection & Testing / C&G 2391 (Course 340). The course builds on the knowledge and skills that candidates have gained from these courses.

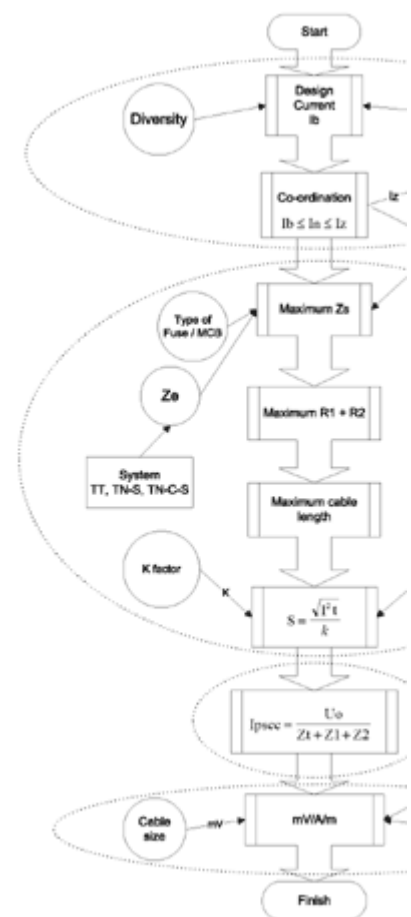
COURSE PRESENTATION

Instructor-led practical examples of how electrical installations should be designed are given. The course consists of several design exercises for the candidates to carry out, which evaluate and explore the process of design in terms of general characteristics, protection for safety, and selection and erection. Comprehensive course notes are provided.

COURSE OBJECTIVES

On completion of the course, participants will be able to

- design safe functional electrical circuits
- perform all the required calculations to determine selection of conductor sizes
- describe factors of energy efficiency and reliability
- create detailed electrical layout drawings for all types of installations
- describe the implications of statutory and non-statutory regulations relevant to electrical installations
- conduct an initial verification of a new electrical installation
- populate Electrical Inspection Certificates with information gained from calculations to allow for testing to be completed
- design a complete installation including the required drawings, information, test schedules, and all relevant cable calculations



Candidates need to complete a 40-hour tutor-assessed design project to achieve the certificate.

Successful completion of the course leads to the award of the Technical Training Solutions Certificate of Competence 355: Design of Electrical Installations.

What do candidates on the Electrical Design course actually do?

The TTS Certified design course is the pinnacle of the qualifications related to electrical installations and is preceded by the courses on the wiring regulations (C&G 2382) and the inspection and testing (C&G 2391) qualifications.

The course begins by guiding the candidates through a series of searching questions with answers provided via a combination of syndicated exercises and individual efforts. This helps to build the candidates' skills and knowledge of the design process, taking each step of the design one stage at a time.

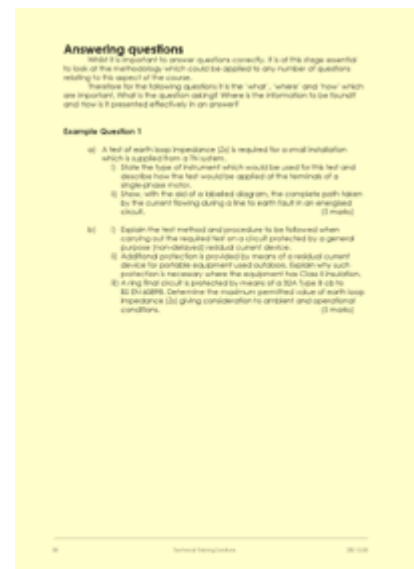
Candidates are provided with course notes which contain useful reference material, help on various topics and suggestions for performing the necessary calculations.



Page 10 of the course notes for the electrical installation design course, listing some of the equations that the candidates need to understand and use

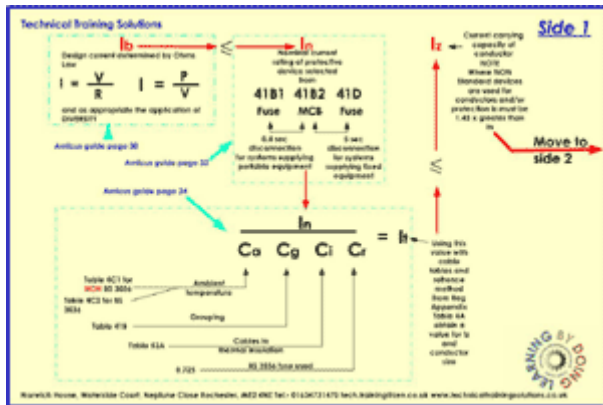


Page 11 of the course notes for the electrical installation design course, describing how electrical equipment should be selected and erected

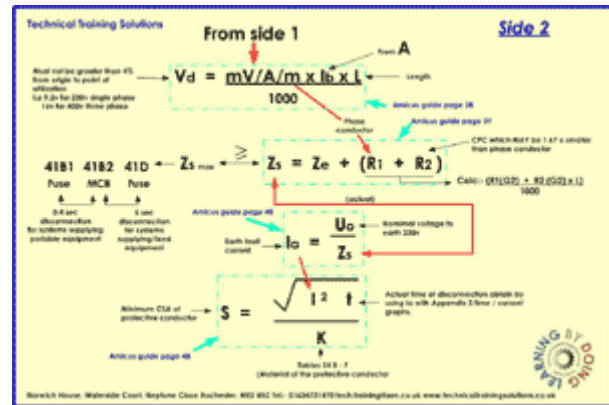


Page 12 of the course notes for the electrical installation design course, providing advice on how to deal with technical questions

We also issue helpful design reference documents which list all the important stages in the design of an electrical installation. This again helps to clarify the process by which an electrical installation design should be performed.



Page 1 of the design reference sheet for the electrical installation design course, depicting some of the equations that the candidates need to understand and use



Page 2 of the design reference sheet for the electrical installation design course, depicting some of the equations that the candidates need to understand and use

The **written examination** ordinarily found in the C&G version of this course has been dispensed with, meaning that we can concentrate on the more essential issue: that of actually designing electrical installations.

Candidates on the electrical installations design course need to complete a **design project**. This is usually started off on the course itself, but it also requires the candidates to spend time (40 hours is suggested) to complete it in their own time. Typically the project requires them to design the complete electrical installation of a commercial building, specifying all the cabling, switchgear, cable runs etc required.

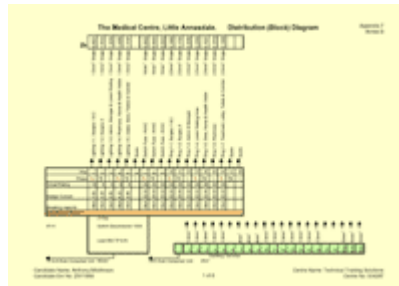


This is an example of the design project for the electrical installation design course

Candidate's project submissions vary in length and detail but the following are example of submissions that we have received, showing tables created to list the circuit specifications, the distribution board arrangements and the lighting circuits designed by the candidate.

This table lists various electrical specifications for different areas of a medical center. It includes columns for Area, Description, Voltage, Current, Power, and other relevant details.

This is an example of a candidate's submission for the design project on the electrical installation design course, listing the circuit specifications for the design



This is an example of a candidate's submission for the design project on the electrical installation design course, showing the distribution board arrangements for the design

This table lists various lighting circuit specifications for different areas of a medical center. It includes columns for Area, Description, Voltage, Current, Power, and other relevant details.

This is an example of a candidate's submission for the design project on the electrical installation design course, listing the lighting circuits used for the design

Candidates also have to complete the electrical installation certificates, inspection schedule and test results schedule for their design, using the appropriate IET forms.

If you would like to learn more about the non-C&G version of the electrical design course then please call us.



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