



Electrician training programme

Informations for employers



DANSK EL-FORBUND



The Danish Union of Electricians

TEKNIQ

INSTALLATØRERNES ORGANISATION

*Danish Mechanical and Electrical
Contractors' Association*

Structure of the electrician training programme

On August 1st, 2015, a new electrician training programme was introduced.

The new electrician training programme challenges all apprentices regardless of their ambitions and skills.

Thus, the electrician training programme offers multiple educational paths:

- A 4 year electricians education
- A 4½ year electricians education
- A 2½ year installation fitter education
- A 5 year EUX electricians education
- A shortened programme for people with an upper secondary education

The new electricians education is a 4-4½ year training education, composed of theoretical education in technical college and practical work in a company. The education is build from an introductory course running 20 weeks, 3 main courses, practical work and an apprenticeship exam. Stays in technical college totals to 55-60 weeks, and the practical work total to 148-168 weeks.

Introductory course 2 (GF2)

All electricians apprentices must complete an introductory course of 20 weeks with training specific subjects.

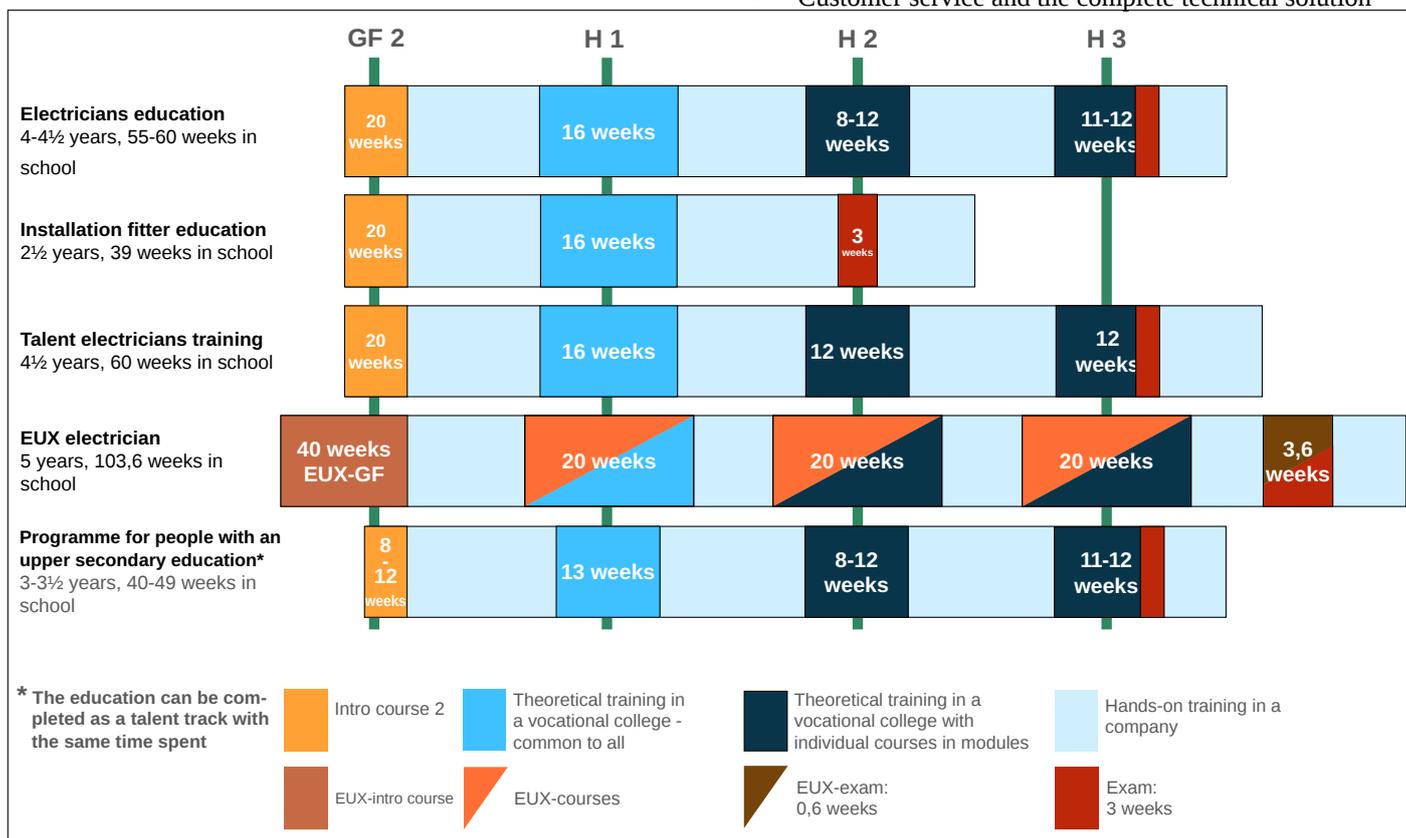
The introductory course is completed with an exam, and the apprentices receives an introductory course certificate. During training, the apprentice earns skills in math (D-level) and physics (E-level), which is a requirement to continue on the main courses.

The apprentice also earns competences in first aid, fire fighting, working near/under voltage and moving towers and bucks scaffolds.

Main course

The first 2½ years is the same for all and includes the introductory course GF2 in 20 weeks, 16 weeks H1 and two practical work stays in a company. The contents are only centered around electrical subjects and includes, but is not limited to:

- Electrical theory and installation techniques
- Basic automatics
- Communication networks
- Measuring techniques, documentation, quality assurance and safety
- Customer service and the complete technical solution



The aim of the common main course is to ensure, that all apprentices receives a specific set of competences, enabling them to work single-handedly with installation work in houses, businesses and the industry. Competences, that stand alone and defines a specific work area for an electrician, and also at the same time are universal for all electricians independent of a following specialization.

The training can be concluded after 2½ years with a basic installation fitter education. The education must then be completed by an apprenticeship exam, granting the title of installation fitter.

H1 is completed with a combined practical and theoretical exam.

Following this, the electricians education contains:

- Hands-on training
- At least two stays in technical college with lessons in optional modules chosen by the company and the apprentice in common agreement.
- An apprenticeship exam track

Main course 2 and 3 is based on 28 optional modules running 4 weeks each. The apprentice and the company must choose 4-5 modules. If the apprentice and the company chooses 4 modules, it is a 4 year education - if 5 modules are selected, the training takes 4½ years.

One module grants competences in three levels: 1) advanced level, 2) expert level and 3) high level.

The separation in levels ensures professional coherence between the various modules, as one module must build on the competences the apprentice has earned earlier in his/her training.



Training apprentices is a good investment

When you participate in the education of an apprentice, you also contribute to a qualified electricians business in the future. You also help yourself by not risking to run low on the specialized professionals, your company needs.

Through your guidance and attention, you can shape the apprentice so he/she fits into the companys culture and ways of working. This is a great advantage to both you and the apprentice in case of an eventual transition from apprenticeship to permanent employment.

As a young person, the apprentice will question work methods and habits, and contribute with new angles on the use of moderne technology in your company.

Modules

Module level 1 Advanced level - 4 weeks	Module level 2 Advanced level - 4 weeks	Module level 3 Expert level - 4 weeks
1.1 Netværks- og datakommunikation	2.1 Programming and configuration of communication networks	3.1 Integrated communication networks
1.2 Automatic installations on machinery	2.2 Control and regulation of automatic installations	3.2 Integration of SCADA and processing units
1.3 Automatic installations in buildings	2.3 Communication systems in automatic installations	3.3 Robot electrical engineering
1.4 Intelligent building installations (central) and simple UI design	2.4 Regulation of HVAC units in buildings	3.4 Integration and energy optimization of Building Management Systems
1.5 Anti theft/break-in installations and CCTV	2.5 Central Management System units	3.5 CleanTech
1.6 Design and controlling of lights	2.6 Intelligent building installations (decentral) and simple UI design	3.6 Technical project and enterprise management
1.7 Sustainable energy solutions	2.7 Integration of security installations	
1.8 Electric installation in special areas	2.8 Electric engineering in AAL solutions	
	2.9 Electric noise	
	2.10 Electric engineering in cooling systems	
	2.11 Electric engineering in lifts	
	2.12 Appliances	
	2.13 Ship installations	
	2.14 Off-shore electrical installations	
		Module level 3 High level - 4 weeks
		4.1 Integrated communication networks
		4.2 Integration of SCADA and processing units
		4.3 Robot electrical engineering
		4.4 Integration and energy optimization of Building Management Systems
		4.5 CleanTech
		4.6 Technical project and enterprise management

* Nogle moduler kan kun vælges, hvis man forinden har haft et bestemt modul

The modular nature of the new electricians education makes it possible to specialize yourself within a given area of competency, such as energy preservation. It is also possible to choose a combination of modules, that gives a broad and general electricians profile.

As a rule of thumb, companies must be approved for the modules selected. This means, that the company must have tasks and competencies matching the contents of the module. Companies can select up to two modules they do not have matching work tasks for. The aim is to better the companys possibility to ensure their own competencies for future expansion, by training an apprentice within one or more business area, that the company is currently working on enhancing.

The module selection must be completed during preparation of the training agreement and must be provided on a separate addendum to the agreement.

It is possible to change selected modules. This must be done no later than 1 month after completion of H1. After this point in time, reselecting modules can only happen by agreement with the technical college. Changing selected modules can only

happen no later than 6 months before education in the given module is started.

One module must be passed, before the apprentice can continue to the next module.

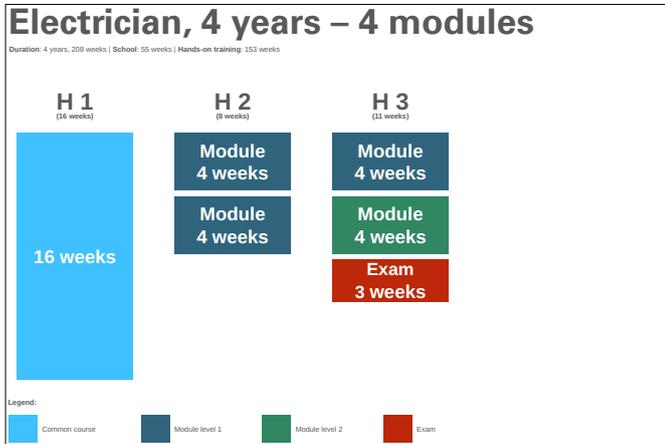
Apprenticeship exam

The apprenticeship exam runs over 3 weeks and - usually - takes place following the 3. main course. The apprenticeship exam is a project assignment, where the apprentice either alone or together with 2-3 other apprentices, must define an issue to solve. The issue and solution must take offset in the contents of at least 3 of the modules, the apprentice has completed during 2. and 3. main course.

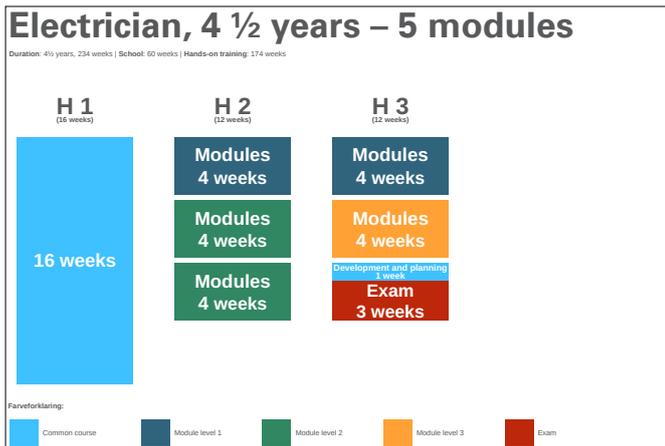
The assessment of the exam is based on tallying the apprentices skills in innovative thinking and abilities to connect theory, practical work, product and systems as well as making the solution user friendly to the customer.

Electricians training in 4-4½ years

On the 4 year training track, the apprentice must choose at least one module in level 2 (green module).



On the 4½ year training track, the apprentice must choose at least one module in level 3 (yellow module).

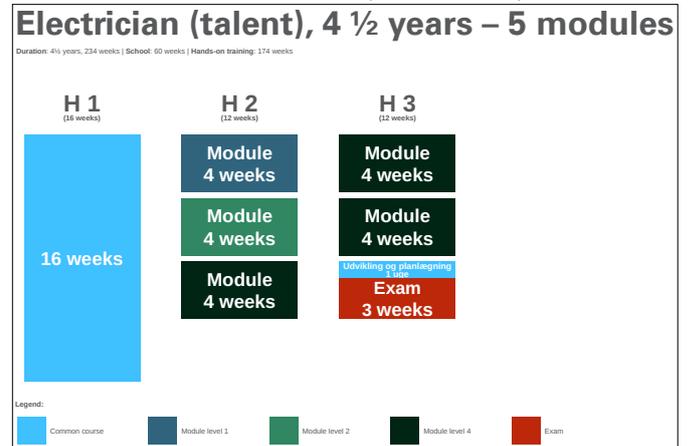


Talent track for the extra skilled and ambitious

Companies and apprentices can, if the apprentice has good vocational skills, choose a talent track, where the theoretical college education on 2. and 3. main course takes place on a higher level.

The talent electrician must complete 5 modules, where at least 3 modules must be of level 4 (black module), corresponding to the level achieved during the installation fitter training. Besides this, the rest of the training correspond to the 4½ year electricians training.

Apprentices with a baccalaureate exam and apprentices above age 25 can also take their training on the talent track. Here, the requirements are the same - apprentices must pass 5 modules, where 3 of them must be level 4 (black module).



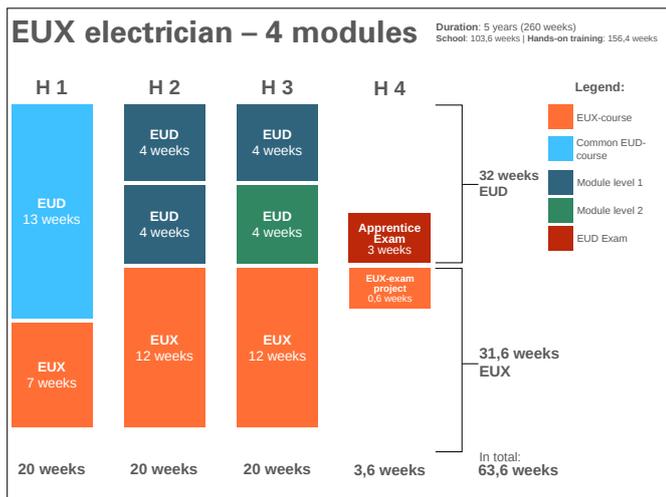
EUX - Two educations in one

The electricians training can also be concluded as EUX training. An EUX education is both vocational training and a secondary school education - two education in one. This means in other words, that the apprentice becomes both an electrician and received his/her baccalaureate exam.

When the apprenticeship exam is completed, the EUX electrician has the option of attending a school of higher education, aiming for ie. engineer or chief engineer.

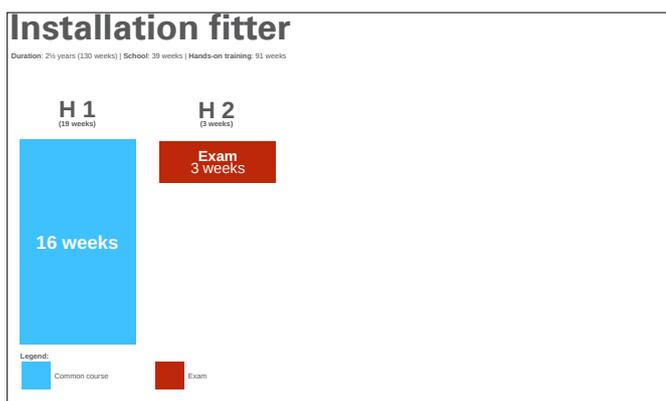
EUC training takes 5 years to complete. Here, 103,6 weeks is theoretical education. The EUX apprentice must complete 4 modules. Each technical college offers EUX tracks with a fixed modular setup.

If an EUX apprentice chooses to give up the high school subjects in the EUX training, he/she is still entitled to continue the training as EUD apprentice, and the company and apprentice must prepare an addendum to the contract on the rest of the training.



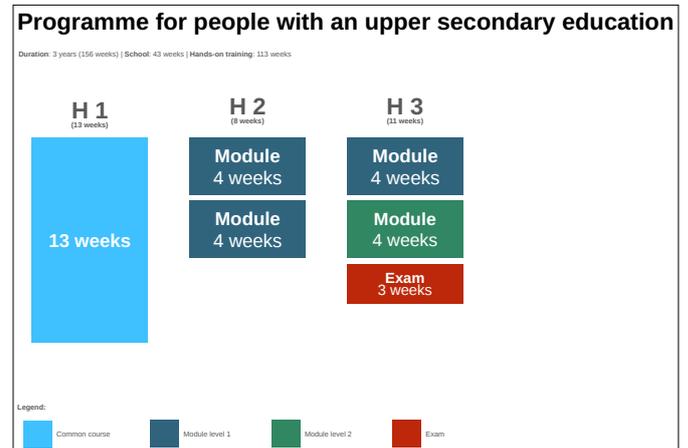
Installation fitter

Training as an installation fitter takes 2½ years and concludes with an apprenticeship exam after 1. main course. A fully trained installation fitter can perform basic installation work as well as simple intelligent installations and simple control- and automatic installations.



Programme for people with an upper secondary education

Apprentices, who have completed a baccalaureate exam with math A, physics B and danish C, must follow a specific track, shortening the training track up to one year.



Apprentices above the age of 25

Apprentices, above the age of 25 when they start on their training, must complete the training as an adult apprentice - EUV.

EUV apprentices will learn the same as other electricians apprentices. The technical college assesses if the apprentice has enough vocational or educational experience, to shorten the education. Most apprentices over 25 years must follow the same track as apprentices under the age of 25.

If the apprentice has a lot of relevant work experience or a previous education, he/she must follow a specific track for adults.

It is the responsibility of the technical college to make sure that the apprentice received the proper reduction, so if the apprentice is above 25, it is a good idea to contact the technical college to figure out, what the educational track looks like.

The training agreement

The new electricians training is based on modules. Apprentice and company must choose 4 or 5 modules together, to be completed in the 2. and 3. main course. There are 28 different modules. The selection of modules defines the apprentices coming skills.

All training agreements, effective of August 1, 2015, must have an addendum added, clearly stating the modules the apprentice must complete during his theoretical education.

The technical committee for the electricians education have developed a homepage for companies, where you can log on and complete a training agreement and an addendum, listing the selected modules. This form is available through www.elektrikeruddannelsen.dk and is available from June 1, 2015.

It is also possible to read a more detailed description of the 28 modules on this homepage, as well as review the prerequisites associated with the different modules.

Specifically for EUX apprentices

If an EUX apprentice decides not to complete the high school subjects of the EUX training, he/she is entitled to continue his/her training as an EUD apprentice, and the company and the apprentice must prepare a new addendum on www.elektrikeruddannelsen.dk on the remainder of the training.

Company certification

All companies, desiring to complete a training agreement, must be certified to train new electrician apprentices for the new education. Before an agreement can be completed, the company must visit www.evu.dk/selvbetjening to apply for certification.

A company can be certified for a sub-selection of modules, depending on the work tasks offered to the apprentice. It is possible to select up to two modules, the company is not certified for - thus making it possible to train the apprentice to future work areas in the company.

No expenses for lodging at college

Because of the modular nature of the education, it might be necessary to send the apprentice to college in a different part of the country because not all schools can offer all 28 modules.

If you choose a technical college with a lodging possibility, any expenses to lodging will be reimbursed by AUB. Your company does not have any expenses from sending an apprentice to school elsewhere in the country.

Vocational/study directed add ons

Apprentice and company can choose to supplement the training with further education for up to 4 weeks (vocational add on). Thus, it is possible to choose an extra 4-week module. Apprentice and company can also select a study directed add on, for instance, supplemental math.

If the company and apprentice desires vocational add on, this must be reflected in the training agreement.

Addendum to the training agreement for add ons

For both vocational and study directed add ons, it must be decided if the theoretical or practical period must be prolonged with the number of weeks associated with the add on.

No questions are too small (or too large)

Following the introduction of the new electricians training and the company page, a hotline has been established where consultants from EVU will help you and answer any questions about the education, company certification and training agreements.

The line is open monday to friday, between 8:00 and 17:00 on phone number 2259 9911. You can also send an email to elektrikeruddannelsen@evu.dk.



**For more information (in Danish) go to:
elektrikeruddannelsen.dk**

**You are always welcome to contact EVU's hotline if you have any questions
about the electricians' training programme**

The line is open on week days from 8am to 5pm. Call: +45 2259 9911.



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