

Program title

Building and industrial electrician

Introduction

The competency based curriculum guide for building and industrial electrician is designed to produce graduates equipped with knowledge, skills and attitudes required by the technicians having this occupation especially for the foreign employment. The curriculum is designed on modular basis which gives enough flexibility in implementation. Trainees who are interested to work as “**building electrician**” must successfully complete the first three modules. Trainees who are interested to work as “**industrial electrician**” must successfully complete all four modules. Building electrician will be capable of performing surface and conceal wiring of buildings and repairing faulty wirings. Industrial electrician will be capable of performing wiring in industry to control machine and equipments.

Aims

The aim of this training is to provide competent and confident electrician who can provide effective services to the foreign industries.

Duration

The total duration of the course is 290 hrs.

Entry

Individuals desiring to enter this program must be:

Requirements

1. Youths who are seeking foreign employment and have passed grade 9 or above.
2. Citizens of Nepal with minimum 21 years of age but not exceeding 40.
3. Physically and mentally fit.

Medium of instruction pattern of attendance focus of curriculum

The medium of instruction for this program will be Nepali and English. However, all technical terminologies will be taught in English.

The trainees should have at least 95% attendance to be eligible to take test and receive completion certificate.

This is a competency-based curriculum. This curriculum emphasizes on performance of competencies.

Minimum 80% times is allocated for practical and remaining 20% time is allocated for related technical knowledge.

Teaching learning methodologies students evaluation details

Demonstration followed by guided practice, independent practice and performance test should be the key methods besides illustrated talks, assignments, group works, simulations etc.

- Continuous evaluation of the trainees' performance is to be done by the related instructor/ trainer to ensure the proficiency over each competency under each module.
- Related technical knowledge learnt by trainees will be evaluated through written tests. The test items will mainly be objective types.
- Trainees must secure minimum marks of 70% in an average of both theory and practical evaluations to obtain the course completion certificate.

Grading system

The trainees will be graded based on the marks in percentage secured by them in tests/ evaluations.

- Grade "A": passed with 90% or above
- Grade "B": passed with 80% or below 90%
- Grade "C": passed with 70% and below 80%
- Grade "D": (failed): below 70%

Trainer's qualification

- Vocational training institute graduate level III in related trade with minimum of 3 years field experience.
- Good occupational and instructional skills.
- Above qualification with 2 years experience in related foreign employment.

Trainer-trainees ratio

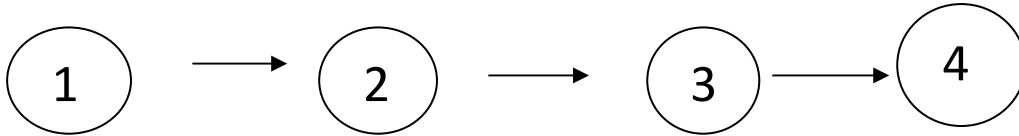
- 1:10 for practical instruction.
- 1:20 class room instruction.

Course structure

The electrician-house wiring program consists of four modules that must be completed in the sequence according to the diagram below:

Time (Hrs.)

s.no	Module name	Nature Pr./Th.	Pr.	Th.	Total	Pr.	Th.	Total
1.	Basic skills	Pr./Th.	33.33	13.02	46.35	100		
2.	Building electrician	Pr./Th.	72.18	12.52	85.10	150		
3.	Project work	Pr.	64.00		64.00	100	200	600
4.	Industrial electrician	Pr. /th.	88.25	6.35	95.00	150		



Course objectives

Upon completion of this program. The trainee will be able to do following:

Building electrician

- Given any house under construction, the trainee will be able to perform surface and conceal wiring safely according to the standard electrical code of practice for house wiring under the supervision of an electrical supervisor.
- Given any house having faulty wiring and description of problem provided by the supervisor, the trainee will be able to repair, replace and restore all wirings with all safety provisions. After repair/replace, all lights and power points will be in working condition.
- Given any faulty fittings/fixtures, the trainee will be able to repair/replace the faulty fittings/fixtures. The repaired/replaced fittings/fixtures will be working as new.

Industrial electrician

- All objectives listed under building electrician
- Perform wiring in industry to control machine and equipments under close supervision of an electrical supervisor.

Assessment

Formative and summative evaluations are conducted to assess the performance of trainee.

Certification

For certification of the training, an individual learner must have 95% attendance and a minimum score of 70% in aggregate of theory & practical test. Pass percentage for b90th theory and practical tests are 70%. However individual should pass both theory and practical tests separately.

Training Schedule

s.n.	Skill Basic skill	Theory credit hours (providing related information)	Practical credit hours (demonstration and assignment)	Total credit hours	remarks
1.	Identify the electrical equipments, tools and materials				
2.	Wear safety gears				
3.	Interpret layout drawing				
4.	Estimate required materials				

5.	Drilling holes on concrete & metal				
6.	Lay casing capping & pace hard conduit on concrete well & wooden board				
7.	Lay galvanized iron conduit				
8.	Lay wire in casing capping & fish wire through conduit				
9.	Fix boxes (switch box and round block)				
10.	Chisel wall for conduit and box fitting with plastering				
11.	Clean distribution box and mob contact point				

Building electrician

12.	Install one way switch to control one bulb Install one way switch to control one bulb	0.30	4.00	4.30
13.	Install push bottom switch to control a buzzer	0.30	2.00	2.30
14.	Install two way switch to control one bulb	0.30	5.00	5.30
15.	Install intermediate switch to control a load	0.30	6.00	6.30
16.	Wire in series	0.30	5.30	6.00
17.	Wire in parallel	0.30	5.30	6.00
18.	Install MCB, MCCB, iron metal dad switch,	2.00	7.00	9.00
19.	Troubleshoot lighting system, perform Continuity test, replace damage cable	1.47	5.43	7.30
20.	Install latching switch	0.30	5.00	5.30
21.	Install power outlet	0.22	2.08	2.30
22.	Install smoke detector, fire detector and Emergency siren	1.50	6.10	8.00
23.	Install toggle switch to control florescent Tube light	1.00	7.00	8.00

24.	Install fan	0.30	2.30	3.00
25.	Install TV socket and telephone socket	0.55	1.45	2.40
26.	Perform lock-in lock-out of switches	0.28	0.32	1.00
27.	Perform plate earthing	0.30	6.30	7.00

Project works

1. Project no: 1
2. Project no: 2
3. Project no: 3
4. Project no: 4

Industrial electrician

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|---|------|-------|-------|
| 1. Install starter for 1- ϕ motor control system | 0.40 | 4.20 | 5.00 |
| 2. Install D.O.L. starter | 0.30 | 11.30 | 12.00 |
| 3. Install forward reverse motor control system | 1.00 | 11.00 | 12.00 |
| 4. Install star-delta motor control system (Manual) | 0.35 | 11.25 | 12.00 |
| 5. Install star-delta motor control system (semi-Automatic) | 0.35 | 11.25 | 12.00 |
| 6. Install star-delta motor control (automatic) | 0.40 | 11.20 | 12.00 |
| 7. Install sequence control of AC motor | 0.45 | 11.15 | 12.00 |
| 8. Install DC shunt motor by 3 point starter. | 0.45 | 5.15 | 6.00 |
| 9. Install single phase preventer | 0.35 | 5.25 | 6.00 |
| 10. Install thermistor for 3-phase induction motor | 0.30 | 5.30 | 6.00 |