

LEARNING OUTCOME BASED VOCATIONAL CURRICULUM

JOB ROLE:

Field Technician – Wireman Control Panel

(QUALIFICATION PACK: Ref. Id. ELE/Q7302)

SECTOR: Electronics

Class 11



PSS CENTRAL INSTITUTE OF VOCATIONAL EDUCATION
(a constituent unit of NCERT, under MHRD, Government of India)

Offered by

Assam Higher Secondary Education Council

In Association with

Rastriya Madhyamik Shiksha Abhijan, Assam

1. COURSE OVERVIEW

COURSE TITLE: Field Technician – Wireman Control Panel

Wireman Control Panel is aimed at training candidates for the job of a "Field Technician – Wireman Control Panel", in the "Electronics" Sector, "Industrial Electronics" Sub-Sector and aims at building the key competencies in Wireman Control Panel.

COURSE OUTCOME : On completion of the course, students should be able to:

1. Apply effective oral and written communication skills to interact with people and customers;
2. Identify the principal components of a computer system;
3. Demonstrate the basic skills of using computer;
4. Demonstrate self-management skills;
5. Demonstrate the ability to provide a self-analysis in context of entrepreneurial skills and abilities;
6. Demonstrate the knowledge of the importance of green skills in meeting the challenges of sustainable development and environment protection;
7. Identify the different types of control panels in residential and commercial power systems
8. Demonstrate the wiring of simple control panels
9. Identify and rectify/repair the faults in house wiring connection with grid
10. Ensure system functioning and perform a demo
11. Handle customer queries
12. Identify and control hazards in the workplace that pose a danger or threat to their safety or health, or that of others.

COURSE REQUIREMENTS: The learner should have the basic reading and writing skills in English and Hindi.

COURSE LEVEL: This is a beginner level course meant for class 11 and 12

COURSE DURATION: 600 Hours

Class 11 : 300 hrs

Class 12 : 300 hrs

2. SCHEME OF UNITS AND ASSESSMENT

This course is a planned sequence of instructions consisting of Units meant for developing employability and vocational competencies of students of Class 11 and 12 opting for vocational subject along with general education subjects. The unit-wise distribution of hours and marks for **Class 11** is as follows :

CLASS 11			
	Units	No. of Hours for Theory and Practical 300	Max. Marks for Theory and Practical 100
Part A	Employability Skills		
Unit 1	Communication Skills - III	25	10
Unit 2	Self-management Skills - III	25	
Unit 3	Basic ICT Skills - III	20	
Unit 4	Entrepreneurial Skills - III	25	
Unit 5	Green Skills - III	15	
	Total	110	10
Part B	Vocational Skills		
Unit 1	Basics of Electrical and Electronics	45	40
Unit 2	Electrical Safety and Hazards	40	
Unit 3	Tools and Equipment	20	
Unit 4	Cabling and Wire Preparation	40	
Unit 5	Electromechanical Assembly	20	
	Total	165	40
Part C	Practical Work		
	Practical Examination	6	15
	Written Test	1	10
	Viva Voce	3	10
	Total	10	35
Part D	Project Work/Field Visit		
	Practical File/ Student Portfolio	10	10
	Viva Voce	5	5
	Total	15	15
	Total	300	100

1. ASSESSMENT AND CERTIFICATION

Upon successful completion of the course by the candidate, the Central/ State Examination Board for Secondary Education and the respective Sector Skill Council will certify the competencies.

The National Skills Qualifications Framework (NSQF) is based on outcomes referenced to the National Occupation Standards (NOSs), rather than inputs. The NSQF level descriptors, which are the learning outcomes for each level, include the process, professional knowledge, professional skills, core skills and responsibility. The assessment is to be undertaken to verify that individuals have the knowledge and skills needed to perform a particular job and that the learning programme undertaken has delivered education at a given standard. It should be closely linked to certification so that the individual and the employer could come to know the competencies acquired through the vocational subject or course. The assessment should be reliable, valid, flexible, convenient, cost effective and above all it should be fair and transparent. Standardized assessment tools should be used for assessment of knowledge of students. Necessary arrangements should be made for using technology in assessment of students.

KNOWLEDGE ASSESSMENT (THEORY)

Knowledge Assessment should include two components: one comprising of internal assessment and second an external examination, including theory examination to be conducted by the Board.

The assessment tools shall contain components for testing the knowledge and application of knowledge. The knowledge test can be objective paper based test or short structured questions based on the content of the curriculum.

WRITTEN TEST

It allows candidates to demonstrate that they have the knowledge and understanding of a given topic. Theory question paper for the vocational subject should be prepared by the subject experts comprising group of experts of academicians, experts from existing vocational subject experts/teachers, and subject experts from university/colleges or industry. The respective Sector Skill Council should be consulted by the Central/State Board for preparing the panel of experts for question paper setting and conducting the examinations.

The blue print for the question paper may be as follows:

Exam Duration: 2 hours

Mark (Theory): 50

	Typology of Question	No. of Questions			Marks
		Very Short Answer (1 mark)	Short Answer (2 Marks)	Long Answer (3 Marks)	
1.	Remembering – (Knowledge based simple recall questions, to know specific facts, terms, concepts,	5	2	2	15

	principles, or theories; identify, define or recite, information)				
2.	Understanding – (Comprehension – to be familiar with meaning and to understand conceptually, interpret, compare, contrast, explain, paraphrase, or interpret information)	3	4	2	17
3.	Application – (Use abstract information in concrete situation, to apply knowledge to new situations: Use given content to interpret a situation, provide an example, or solve a problem)	0	3	1	09
4.	High Order Thinking Skills – (Analysis & Synthesis – Classify, compare, contrast, or differentiate between different pieces of information; Organize and/ or integrate unique pieces of information from a variety of sources)	0	2	1	04
5.	Evaluation – (Appraise, judge, and/ or justify the value or worth of a decision or outcome, or to predict outcomes based on values)	0	1	1	05
	Total	08x1=8	12x2=24	6x3=18	50 (26 questions)

SKILL ASSESSMENT (PRACTICAL)

Assessment of skills by the students should be done by the assessors/examiners on the basis of practical demonstration of skills by the candidate, using a competency checklist. The competency checklist should be developed as per the National Occupation Standards (NOSs) given in the Qualification Pack for the Job Role to bring about necessary consistency in the quality of assessment across different sectors and Institutions. The student has to demonstrate competency against the performance criteria defined in the National Occupation Standards and the assessment will indicate that they are 'competent', or are 'not yet competent'. The assessors assessing the skills of the students should possess a current experience in the industry and should have undergone an effective training in assessment principles and practices. The Sector Skill Councils should ensure that the assessors are provided with the training on the assessment of competencies.

Practical examination allows candidates to demonstrate that they have the knowledge and understanding of performing a task. This will include hands-on practical exam and viva voce. For practical, there should be a team of two evaluators - the subject teacher and the expert from the relevant industry certified by the Board or concerned Sector Skill Council. The same team of examiners will conduct the viva voce.

Project Work (individual or group project) is a great way to assess the practical skills on a certain time period or timeline. Project work should be given on the basis of the capability of the individual to perform the tasks or activities involved in the project. Projects should be discussed in the class and the teacher should periodically monitor the progress of the project and provide feedback for improvement and innovation. Field visits should be organised as part of the project.

work. Field visits can be followed by a small-group work/project work. When the class returns from the field visit, each group might be asked to use the information that they have gathered to prepare presentations or reports of their observations. Project work should be assessed on the basis of practical file or student portfolio.

Student Portfolio is a compilation of documents that supports the candidate's claim of competence. Documents may include reports, articles, and photos of products prepared by students in relation to the unit of competency.

Viva voce allows candidates to demonstrate communication skills and content knowledge. Audio or video recording can be done at the time of viva voce. The number of external examiners would be decided as per the existing norms of the Board and these norms should be suitably adopted/adapted as per the specific requirements of the vocational subject. Viva voce should also be conducted to obtain feedback on the student's experiences and learning during the project work/field visits.