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| Technical Helper Electrical Skills | |
| Class: B.Sc. I | DURATION: Three Months |
| Name of Co-ordinator: Dr. A. A. Pisal | |

Department of Physics

1. Title: **Technical Helper Electrical Skills**
2. Year of implementation: 2020-21

Structure of Skill Development Course

| Duration | Theory Hours | Practical Hours | Total Hours | Credits | No. of students in batch |
|----------|--------------|-----------------|-------------|---------|--------------------------|
| 3 Month | 20 | 30 | 50 | 02 | 30 |

Syllabus

Learning Objectives: Students should:

1. get knowledge about the Safety, Health and Environment associated with Electrical equipment
2. get knowledge about the Identification and classification of major tools needed for different types of electrical utility works
3. get knowledge about the single phase and three phase electric circuits

Theory Syllabus (20 Hrs)

Unit I: Understanding basics of electricity and its hazards (10)

Safety, Health and Environment associated with electrical equipments, Basic Tools and Tackles used for installation and maintenance of electrical equipments, types of conductors and usage at basic level, Identification and uses of important electrical instruments.

Unit II: Basics of electricity (10)

AC and DC Circuits, Laying of single phase and three phase electric circuits, types of conduits, casing and capping, concealed wiring, Fire Safety procedures, circuits, testing and connections of parallel and series combination of wiring.

Practical Syllabus (24 +6 hr)

List of Experiments: (Any 08)

- 1 Meter reading
- 2 Equipment testing
- 3 Electrical accessories studies
- 4 Wiring types
- 5 Polarity testing
- 6 Testing and connections of parallel and series combination of wiring
- 7 Hands-on learning of various types of conduits
- 8 Hands-on learning of various types of casing and capping, concealed wiring
- 9 Hands on training related Safety, Health and Environment associated with Electrical equipment's
- 10 Identification and classification of major tools needed for different types of electrical utility works

Project/ Field Visits/ Industrial Visit

06 hr

Learning Outcomes: After completion of the course, students are able to:

- 1 get knowledge about Fire Safety
- 2 get awareness about Health and Environment associated with electrical equipments
- 3 get knowledge about AC and DC Circuits

Recommended Books:

1. Electrical Safety Handbook, 4th Edition (2012) by John Cadick, Mary Capelli-Schellpfeffer, Dennis Neitzel, Al Winfield McGraw-Hill Education (2012).
2. Basic Electricity: Complete Course, 1st Edition by Van Valkenburgh, Nooger, Neville, Prompt Publications (1992).

BOS Sub Committee:

Syllabus Committee:

Dr. A. A. Pisal
Dr. P. K. Pagare

Expert Committee:

Dr. A. P. Torane
Dr. S. H. Mujawar