COURSE TABLE OF CONTENTS

Solar-Powered Electronic Systems

OEM: Koenig Original • Duration: 2 Days (16 hrs)

COURSE MODULES & TOPICS

Module 1: Introduction to Solar Energy and Photovoltaic Technology

- Basics of solar energy
- Overview of photovoltaic technology

Module 2: Solar Cells and PV Module Characteristics

- Types of solar cells
- PV module structure
- Electrical characteristics of PV modules

Module 3: Solar System Components

- Solar panels
- Batteries
- Charge controllers
- Electrical loads

Module 4: Solar Power Calculations and Load Estimation

- Solar power calculations
- Estimating electrical loads
- Determining energy requirements

Module 5: Battery Charging and Power Management

- Battery charging methods
- Charge controller functions
- Power management strategies

Module 6: DC-DC Converters and Voltage Regulation

- DC-DC converter types
- Voltage regulation techniques
- System protection methods

Module 7: Solar-Powered Embedded and IoT Systems

- Embedded system integration
- IoT applications using solar power

Module 8: System Design, Installation, and Troubleshooting

- Solar system design basics
- Installation procedures
- Testing and troubleshooting techniques

Module 9: Hands-on Labs and Practical Activities

- Solar panel measurements
- Load calculations
- Battery charging concepts

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- DC power management
- Solar-powered IoT prototype