COURSE TABLE OF CONTENTS

IoT-Based Smart Classroom

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

COURSE MODULES & TOPICS

Module 1: Introduction to IoT and Smart Classroom Architecture

- Overview of IoT concepts
- Smart classroom architecture
- Applications of IoT in education

Module 2: IoT Hardware Platforms

- ESP32 overview
- ESP8266 overview
- Arduino platform basics

Module 3: Sensors for Smart Classrooms

- Temperature sensors
- Humidity sensors
- Light sensors
- Motion and occupancy sensors

Module 4: Classroom Automation and Device Control

- Smart lighting control
- Fan automation
- Classroom automation techniques

Module 5: IoT Communication and Connectivity

- Wi-Fi connectivity for IoT devices
- MQTT protocol basics
- IoT communication methods

Module 6: Cloud Dashboard and Data Visualization

- Cloud dashboard setup
- Remote monitoring of classroom devices
- Data visualization techniques

Module 7: Energy Management, Safety, and Security

- Smart classroom energy management
- Safety considerations
- Security in IoT environments

Module 8: Smart Classroom Prototype and Project Integration

- Building a smart classroom prototype
- Project integration steps

Module 9: Hands-on Labs and Practical Activities

- Smart lighting automation lab
- Classroom occupancy monitoring lab

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- Environmental monitoring lab
- Remote device control lab
- Dashboard development lab