

Three months Add on certificate course
Under
Department of Physics,
Jorhat Kendriya Mahavidyalaya

The Department of Physics has introduced one Add-on Certificate Courses with the aim of enhancing and enriching the student's learning experience in the college and to bring about a more holistic approach for learning and developing necessary skills for various vocation and careers. The introduced Courses are-

Sl. No.	Course Name	Co-ordinators	Description
1	LED bulb repairing technician	Mr. Arup Saikia Mr. Amrit Dutta	It is a three months Certificate course for the UG students of both Arts and Science stream. The Course aims to enhance the skill in the field of Electronics Sector for Self-employment and empowerment of the students.


Mr. Rajib Baruah
HOD
Department of Physics

Head
Department of Physics
Kendriya Mahavidyalaya
Kenduguri, Jorhat-785001

Three months Add on certificate course on “**LED bulb repairing technician**” introduced by Physics Department, JKM in collaboration with **Community College Jorhat Kendriya Mahavidyalaya**.

Course Syllabus of Three month Add on certificate course on “LED bulb repairing technician” Total Credit: 9


Unit	Element	Topic	Credit
1.	Basics of Electronics and LED	<ol style="list-style-type: none"> 1. Differentiate between various electronic and electrical components, materials and their specific properties, types and usages. 2. Differentiate between alternating current (AC) and direct current (DC). 3. Identify the types of solder and flux. List the function of the different. 4. Components of a soldering iron. Identify the selection criteria of a suitable tip. 5. Demonstrate the LED working principle. List the parameters which affect the overall life of LED. 6. Categorise LED into its various types such as indicator, illuminator and Chip on Board (COB). 7. List the advantages of LED light products. 8. List the basic parameters of LEDs and their importance in an LED products. 9. Distinguish between the different types of power sources used in LED lighting and their characteristics. 	3
2.	LED Luminary Repair and Assembly	<ol style="list-style-type: none"> 1. List the major components of an LED luminary such as LED light engine, LED Driver, LED heat sink and thermal pads. 2. Identify the tools required for LED product assembly. 3. List the materials used in LED product assembly. 4. Demonstrate basic knowledge of assembly of products such as spot light, LED bulb and LED tube light. 	2


Unit	Element	Topic	Credit
3.	Safety Standards and Procedures	1. Identify electrostatic discharge (ESD) causes and safety gear. 2. Identify and implement safety rules and company policy on personal protective equipment (PPE). 3. Use eye, respiratory and hearing protection as per company policy.	1
4.	Practical Classes	The Course contents given below	3


Practical Classes on Led bulb repairing

1. Electric circuit components such as diode, transistor, IC, LED, transformer, resistor, capacitor, thermistor, inductor, timer, motor, starter, connector, switch, PCB, relay.
2. Multimeter, power source.
3. Ammeter, voltmeter Soldering Iron, soldering ware, desoldering pump.
4. LED light, multimeter, tester, LCR meter and power analyser.
5. Stripper, cutter, screw driver set, plier, soldering pump, soldering iron.


 Head
 Department of Physics
 Jorhat Kendriya Mahavidyalaya
 Kenduguri, Jorhat-10
 HOD
 Dept. of Physics, JKM


 (Arup Saikia)
 Faculty
 Dept. of Physics, JKM


 (Amrit Dutta)
 Faculty
 Dept. of Physics, JKM


 (Priyansu Kalita)
 Guest Faculty
 Sibsagar College, JKM



