Mand Labs

A DIY STEM Kits & Solutions Company

Day-Wise Activity Plan for DIY Premier Electronics Camp For Educators and Professionals

Workshop duration: 1 hour 40 mins each day

Day No.	Topic	List of Workshop Experiments and Agenda	Home Projects
1	Battery, Voltage, Current, LED, Breadboard, Resistor, Color Coding, Multimeter	1. Measuring voltage using a multimeter 2. Continuity test of an LED 3. Measuring resistance using a multimeter 4. Glowing an LED and Kirchhoff Voltage Law 5. Buzzer discussion	1. Beeping a buzzer
2	Buzzer, Variable resistors: Potentiometer, Preset and LDR,	1. Glowing an LED using an LDR 2. Glowing an LED using a Potentiometer 3. Glowing an LED using a Preset	2. Alternate glowing of LEDs using a Preset
2	Circuit combinations	1. Measuring current using a multimeter 2. Series combination of LEDs 3. Parallel combination of LEDs-1 4. Parallel combination of LEDs-2	3. Verifying Kirchhoff Current Law 4. Sequential glowing of LEDs
3	Switches	1. Continuity test of an SPDT switch 2. Controlling an LED using an SPDT switch 3. Alternate glowing of LEDs using an SPDT switch **Quiz-1**	5. Staircase Lighting
4	Capacitors	1. Charging and discharging a capacitor 2. Spark creation 3. Charging a capacitor with a resistor	5. Discharging a capacitor with a resistor
5	Relay	1. Continuity test of relay using a multimeter 2. Alternate glowing of LEDs using a relay 3. Burglar Alarm-Type 1 and Type-2	6. Relay as Oscillator
6	Semiconductors, Diode	1. Working of diode 2. Current following a minimum resistance path	7. Protecting a Circuit using a diode

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7	Digital Logic Gates	1. OR Gate using diodes 2. AND Gate using diodes 3. NOR Gate using diodes 4. NAND Gate using diodes **Logic Gates Contest**	
8	Zener diode	1. Working of zener diode 2. DC Motor as Generator 3. Controlling speed of DC motor **Quiz-2**	8. Zener Diode as Voltage Regulator
9	Introduction to transistors	1. Identifying the type of BJT using a multimeter 2. Measuring the gain of a transistor 3. Transistor as an amplifier and switch	9. Darlington Pair
10	Transistor Application-1	1. Touch activated switch 2. Automatic night lamp 3. LED Flasher/Blinker/Esaki Effect	10. Transistor as an inverter (NOT gate)
11	Transistor Applications-2	1. **H-Bridge Grand Challenge** 2. **Advanced Projects-** IR Security Alarm, Joule Thief, Temperature Sensor **Quiz-3**	11. Alternate blinking of LEDs using transistors
12	Concluding Class	1. Voltage divider 2. Logic Gates using Transistors 3. Tips and techniques 4. Q & A and doubts **Results of Quizzes, Fastest Circuit Maker, Logic Gates Contest and Grand Challenge- Winner**	

Note:
Please note that the above curriculum is subject to minor changes or shuffling of topics between various days depending upon how much material is covered by the instructors in a day. All topics will be covered by the instructors and if necessary, complimentary hours will be put in to cover the curriculum. Any changes will be updated via email.

For any questions, please contact us directly at support@mandlabs.com