

PURANMAL LAHOTI GOVERNMENT POLYTECHNIC LATUR

ELECTRONICS DEPARTMENT

Internships Daily Diary

Name of the Student: **Mare Mansi Madhav**

Name of the mentor (Faculty): **Smt.S.R.Shamraj**

Enrollment Number: **23510210414** Semester: **Fifth**

Academic Year: **2025-26**

Week	Day & Date	Discussion Topics/Activity	Details of work Allotted till Next Session /Correction Suggested/ Faculty Remarks	Signature of Industry Mentor
Week 01	Mon, Date 02/06/25	<ul style="list-style-type: none">• Learned about basic electrical tools: Neon Tester and multimeter• Saw how a Neon tester works to check if a wire has a current or not• understood different types of multimeters: Analog and Digital• Saw how to measure voltage and current using multimeter• Types of power sources : AC and DC• AC power sources : Inverter, MSEB, Generator ,Piezo electric .• Series and Parallel bulb connection: Observe behavior of current , Voltage and intensity of		

		bulb in both configuration.		
	Tue, Date 03/06/25	<ul style="list-style-type: none"> • Studied various DC Sources like batteries , cell , Solar cell , DC Generator • Discussed various applications of DC sources. • Learned about series and parallel connection of batteries • Identification of different value of resistor by using color code and also find the resistor color code from resistor values. • Series and parallel connections of resistor : calculate equivalent resistance in series and parallel circuits. 		
	Wed, Date 04/06/25	<ul style="list-style-type: none"> • Calculate resistor values using Ohm's law for protecting LEDs from damage . • Series and parallel connection of two or more LEDs using 9volt and 12 volt power supply. • Studied connection of DPDT switch and Also connection of DPDT Switch with motor which rotate motor clockwise and anticlockwise. • Studied working principal of LDR , thermistor, photodiode and observe the voltage across it. 		
	Thu, Date 05/05/25	<ul style="list-style-type: none"> • Studied various types of diodes like silicon diode , Zener diode , LEDs, photodiode ,Laser diode , Schottky diode and varactor diode. • Calculate the value of resistor for Zener diode and laser diode to protect it. 		

		<ul style="list-style-type: none"> • Learned testing of transistor and identification of terminal (Base, Emitter , and collector) using multimeter. 		
	Fri, Date 06/06/25	<ul style="list-style-type: none"> • Studied working principal of SCR , TRIAC , MOSFET. • Learned to build a circuit which consisting a switch and LEDs by using SCR , TRIAC , and MOSFET. 		
Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/ Faculty Remarks	Signature of Industry Mentor
Week 02	Mon, Date 09/06/25	<ul style="list-style-type: none"> • Studied internal structure of relay and testing of relay to identify normally open and normally connected terminal. • Types of relays : SPDT,DPDT • Build a circuit to learn working of relay. • Learned the types of transformer such as step up and step down transformer. • Build a circuit to convert AC Source into DC source using diodes in half wave , Full wave and bridge rectifier using transformer. 		
	Tue, Date 10/06/25	<ul style="list-style-type: none"> • Build a half wave ,full wave and bridge rectifier circuit to store charge using different values of capacitor like 10microfarad , 100microfarad and 1000microfarad. 		

		<ul style="list-style-type: none"> • Studied working of 7805 and 7812 voltage regulator. • Convert rectified voltage into constant 5volt using 7805 voltage regulator and build a circuit using 7805 voltage regulator. 		
	Wed, Date 11/06/25	<ul style="list-style-type: none"> • Learned about adjustable voltage regulator LM317 and build a circuit using LM317. • Studied different types of sensor such as LPG Gas sensor , soil moisture sensor , rain sensor ,temperature sensor , LDR Sensor . • Build the circuit of LPG Gas sensor and observe the working of this sensor . 		
	Thu, Date 12/06/25	<ul style="list-style-type: none"> • Build the circuits of various sensors and observe working of each sensor : • Soil moisture sensor : A soil moisture sensor senses the moisture of soil. • LDR sensor : It senses the darkness and brightness . If darkness is detected then it turns ON the LED and If brightness is detected then it turns OFF the LED. • Rain sensor : Rain sensor is a device that can detect the rain . when raindrop fall on it then sensor sends signal to turn ON the buzzer. • Temperature sensor : This sensor detects the temperature. When high temperature is detected then LED and buzzer is turned ON. 		

	<p>Fri, Date 13/06/25</p>	<ul style="list-style-type: none"> • Build the circuit of soil moisture sensor with buzzer. • Working : A soil moisture sensor checks if the soil is dry or wet .It has two probes that go into the soil to measure a how much water is there and sends signal to the controller .If soil is dry, it sends signal to turn ON the buzzer to tell the plant needs the water . when we give the water the plant then it sends signal to turn OFF buzzer. • Build the soil moisture sensor circuit with pump . • Working : A soil moisture sensor checks if the soil is dry or wet. It has two probes that go into the soil to measure a how much water is there and sends signal to the controller .If soil is dry, the controller turns ON the pump , when soil becomes wet then the controller turns OFF the pump. 		
--	-------------------------------	---	--	--

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks	Signature of Industry Mentor
Week 3	Mon, Date 16/06/25	<ul style="list-style-type: none"> • Constructed various circuits on breadboard : 1. Temperature alarm : Temperature alarm detects when the temperature goes below or above the set limit. It uses thermistor to measure heat. When the temperature crosses the set limit ,the circuit activate the buzzer and LED. 2. Door guard : A door guard circuit is used for security purpose . when the door is opens, then it activate the buzzer to alert the user. 3. Jewel theft alarm : This circuit used for secure the jewelry. when someone tries to theft the jewelry then buzzer is activated . 4. Automatic light : This circuit used LDR to detect darkness or brightness. It turns ON the LED when darkness is detected and It turns OFF the LED when brightness is detected . This helps to save electricity and it works without manual control. 5. Live mains detector : A live mains detector checks if wire has electricity. when wire has a electricity then buzzer and LED is 		

		<p>activated.</p> <p>6. Battery level detector : This circuit shows how much charge is left in in battery using LEDs .More LED glows means more charge and few LED glows means low charge.</p> <p>7. Alcohol detector : when alcohol detector detects alcohol then buzzer and LED is turned ON.</p>		
	Tue, Date 17/06/25	<ul style="list-style-type: none"> • Constructed various circuits on breadboard : 1. Simple transistor touch switch : When we touch the touch plate ,then LED is turned on. 2. Mobile protector : This circuit is used to protect the mobile while charging .it stops overcharging or high voltage from damaging the battery . 3. Simple delay timer : In this circuit few minutes of delay is generated because of use of capacitor . when the switch is pressed capacitor stores charge and LED is turn ON for few minutes. 4. Smoke detector : A smoke detector senses smoke and turned on the buzzer to warn about fire. 5. Astable multivibrator : This circuit turns on LED alternately. 6. Broken wire detector : When wire is cut or disconnected then buzzer is activated. 		
	Wed, Date 18/06/25	<ul style="list-style-type: none"> • We learned how to solder different components on PCB . • We solder a live mains detector circuit on PCB and observed the 		

		<p>output of the circuit.</p> <ul style="list-style-type: none"> • Live mains detector : A live mains detector checks if wire has electricity . when wire has electricity then buzzer and LED is activated. 		
	Thu, Date 19/06/25	<ul style="list-style-type: none"> • Today we solder three circuits on PCB and observe their output. <ol style="list-style-type: none"> 1. Door guard : A door guard circuit is used for security purpose . when the door is opens, then it activates the buzzer to alert the user. 2. Automatic light : This circuit used LDR to detect Darkness or Brightness . It turns ON when darkness is detected and it turns OFF when Brightness is detected. This helps to save electricity and it works without manual control. 3. Clap switch : A clap switch is a circuit that turns devices ON or OFF when we clap. 		
	Fri, Date 20/06/25	<ul style="list-style-type: none"> • Today we solder two circuits on PCB : <ol style="list-style-type: none"> 1. Wireless electricity : This circuit uses 9V battery , transistor and two coils .The first coil creates a magnetic field using a battery , and the second coil receives that energy to turn on the LED 2. Lamp Dimmer : This circuit uses a Triac and Diac to control current flow in each AC cycle .By delaying this flow using a variable resistor, it adjusts the lamp's brightness. 		

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks	Signature of Industry Mentor
Week 4	Mon, Date 23/06/25	<ul style="list-style-type: none"> • Today we learned about IC 555 and pin configuration of IC 555 • We learned three modes of IC 555 <ol style="list-style-type: none"> 1.Astable multivibrator 2.Monostable multivibrator 3.Bistable multivibrator • Astable multivibrator : We build a astable multivibrator circuit for 1HZ and 5HZ and it can be used for frequency generation. A astable multivibrator is a circuit that keeps switching ON and OFF automatically . It has no stable state . It is used in blinking lights, clock pulse , LED flashers etc. • Monostable multivibrator : We build circuit of monostable multivibrator for 5sec and 10sec. A monostable multivibrator is an electronic circuit that has one stable state and one unstable state. It normally states OFF . when it triggered it turns ON for short time, then goes back OFF automatically. It is used in timers, pulse generator, and delay circuits. • Bistable multivibrator : We build a circuit of bistable multivibrator. 		

		A bistable multivibrator is an electronic circuit that has two stable states. It works like a simple flip flop		
	Tue, Date 24/06/25	<ul style="list-style-type: none"> • We build a various circuits and check their performances using IC 555. <ol style="list-style-type: none"> 1. LED Dimmer : In this circuit IC 555 is used in astable mode . IC 555 turns the LED ON or OFF very fast . we use a potentiometer to control LED brightness . when we turn the potentiometer , it changes the ON time for LED . More ON time = LED IS brighter Short ON time = LED is dimmer 2. Live mains detector : live mains detector uses IC 555 to sense the electricity . when brought near a wire , then circuit senses the electricity. If wire has current . the LED turns ON . If there is no current , the LED stays OFF. 3. Broken wire detector : If wire is broken ,then LED turns off and IF wire is not broken , an LED stays ON . This is used in lightning circuit ,home wiring maintenance etc. 4. Jewel theft detector : This circuit 		

		<p>is used to secure jewelry from thief . In this circuit LDR and LED is used . jewelry is placed near a light and LDR . If someone removes the jewelry , The light falling upon LDR becomes different (more or less) . This difference of light trigger the IC 555 and the buzzer is turn ON.</p> <p>5. Piano : The piano circuit uses IC 555 Timer in astable mode to generate different sound frequencies . multiple buttons are connected with resistors . Pressing each button produces different musical tone through speaker.</p> <p>6. Door bell : In this circuit IC 555 is used in astable mode which means it produces a continuous sound signal . The speaker stays OFF until someone presses the button . when button is pressed , then speaker is turned ON.</p> <p>7. Street light : A street light using IC 555 typically functions as an automatic light control system that switches ON the street light during the night time and OFF during the day time using a LDR.</p> <p>8. Timer delay circuit : In this circuit time delay is generated by the value of capacitor and resistor . When switch is pressed the LED is turned ON for few minutes and then automatically turned OFF.</p>		
	Wed, Date 25/06/25	<ul style="list-style-type: none"> • We build various circuits using IC 555 and observe their outputs. <p>1. Panic alarm : In this circuit IC 555 is used in astable mode . This is a small emergency alarm . when</p>		

		<p>button is pressed ,the IC 555 timer activates the buzzer.</p> <p>2. Clap switch : A clap switch circuit made using IC 555 timer . The IC 555 turn a light or fan ON or OFF using sound of clap .</p> <p>3. Security system : This circuit is used for safety . the IC 555 is used in monostable mode . in this circuit two LEDS are used .This system always ready to detect activity. when someone opens door a buzzer and one LED is turned ON for few seconds and then they turn OFF automatically, and the other LED is turn ON to show its active again .</p> <p>4. Alert system : The IC 555 is used in monostable mode . when button is pressed , the LED and buzzer turn ON together for few minutes and then turn OFF automatically.</p>		
--	--	---	--	--

	<p>Thu, Date 26/06//25</p>	<ul style="list-style-type: none"> • Today we studied about OP-AMP 741 and pin configuration of OP-AMP 741. • Build the various circuits and observe their outputs . <ol style="list-style-type: none"> 1.Non-inverting input low 2.Non-inverting input high 3.Inverting input low 4.Inverting input high 1. Build the various circuits using IC 555 timer / 741 OP-AMP / other IC 1. IR obstacle detector : This circuit sense invisible light using IR LED. when something comes close, the light reflects back and a photodiode catches it. Then sound and LED turn ON to show that something is in front . 2. Temperature alarm : This circuit uses thermistor, potentiometer, LM358 OP-AMP, Transistor and buzzer .This circuit checks the temperature using thermistor . when temperature is very high then thermistor sends signal to a sensor circuit . The sensor then turns ON the buzzer . It warns you when temperature is high. 3. Audio amplifier : An audio amplifier increases the volume of low sound signal. It takes sound from devices like microphone, or mobile phone and make it strong to be heard clearly through a speaker . 		
--	--------------------------------	--	--	--

Fri, Date
27/06/25

- Build the various circuits using IC 555 timer / 741 OP-AMP / other IC

1. Sequential timer circuit : This circuit uses two 555 timers. When switch pressed , the first LED turns ON for a set time , once a time ends then automatically triggers the second timer to turn ON the next LED .Each LED turns ON one after the other, with timing set by the value resistor and capacitors .

2. Police siren : This circuit uses two 555 timer ICs in astable mode. The first IC makes sound very fast beep sound and other one slowly changes that beep to make it go higher and lower. When they work together we can hear sound like police car siren.

- **We corrected some faulty circuits :**

1. IR obstacle detector : We corrected this faulty circuit by changing some component and correcting some connections and observed the output .
An IR obstacle detector is an electronic sensor circuit ,that senses invisible light using IR LED. when something comes close, the light reflects back and a photodiode catches it. Then sound and LED turn ON to show that something is in front .

2. Fire alarm : We corrected this faulty circuit by changing some component and correcting some

		<p>connections and observed the output .</p> <p>A fire alarm circuit uses a thermistor to detect fire (Temperature). when temperature goes too high , then buzzer is turns ON .</p>		
--	--	---	--	--

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested / Faculty Remarks	Signature of Industrial Mentor
Week 05	Mon, Date 30/06/25	<ul style="list-style-type: none"> • Today we solder the circuit of IC on a PCB and observed their output . • Fridge door alarm : This circuit uses two 555 timer ICs , LDR and buzzer . This circuit works like a reminder . when the fridge door is open , LDR detects the light . If the door stays open for a too long , the circuit waits for few minutes and then turn ON the buzzer to remind door is open. 		
	Tue, Date 01/07/25	<ul style="list-style-type: none"> • Today we solder the circuit of IC on a PCB and observed their output . • PIR motion sensor : This circuit uses a PIR sensor to detect the 		

		<p>movement . when someone moves in front of the sensor, it sends signal to the 555 timer IC , which then turns ON the LED to show motion id detected.</p>		
	<p>Wed, Date 02/07/25</p>	<ul style="list-style-type: none"> • Today we solder the circuit of IC on a PCB and observed their output . • Door bell : In this circuit IC 555 is used in astable mode. The speaker stays OFF until someone presses the button . when someone pressed the button , then speaker is turned ON . 		
	<p>Thu, Date 03/07/25</p>	<ul style="list-style-type: none"> • Today we soldered the various components on customized PCB components like Resistor, capacitor, Diode, crystal , LED, potentiometer ,8051 IC base , etc. 		
	<p>Fri, Date 04/07/25</p>	<ul style="list-style-type: none"> • Today we learned about making and packing process of Li-ion battery and also we made a Li-ion battery and packed it. • Li-ion battery is lightweight, rechargeable battery with high energy density. They power devices like phones and laptops . Lithium ions moves between electrodes during charge and discharge. 		

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks	Signature of Industrial Mentor
Week 06	Mon, Date 07/07/25	<ul style="list-style-type: none"> • Today we learned about proteus software tool which is used for designing circuits and to observe it's simulation . • We build various circuits using proteus software. <p>1. Half wave rectifier with filter : Half wave rectifier is simulated by using a step-down transformer , diode and load resistor . This circuit allows only positive half - cycles to pass , producing a pulsating DC . A capacitor is used across the load to filter and smooth the output by reducing ripples. We used different capacitor values like 1 micro farad , 10 micro farad , 100 micro farad to observe effect on smoothing. The waveform can be observed using an oscilloscope to understand the filtering effect.</p> <p>2. Center tap full wave rectifier with filter : A center tap full wave rectifier with filter is simulated by using a center tap transformer , two diodes, load resistor and capacitor to convert AC to smooth DC . We used different capacitor values like 1 micro farad , 10 micro farad , 100 micro farad to observe effect on smoothing. The waveform can be observed using an oscilloscope to understand the filtering effect.</p> <p>3. Bridge rectifier with filter : The</p>		

	<p>bridge rectifier with filter is simulated by using transformer , four diode , capacitor and a load resistor .The bridge allows full wave rectification and a the capacitor reduces ripples, giving steady output .The waveform can be observed using an oscilloscope to understand the filtering effect.</p> <p>4. Simulation of transistor NPN : when switch is pressed , the transistor turns ON , and the LED glows and when the button is not pressed , the LED , the LED stays off . The voltmeter is connected to show how the voltage changes when the transistor is ON or OFF .</p>		
<p>Thu, Date 08/07/25</p>	<ul style="list-style-type: none"> • Today we build a various circuits and observe their output. <p>1. Simulation of transistor PNP : This is a PNP transistor switch circuit when button is pressed , the base gets a lower voltage, turning the transistor ON and the LED lights up. When the switch is not pressed , the transistor stays OFF and LED stays OFF .</p> <p>2. MOSFET simulation 2N6660 : When switch is pressed , the MOSFET turns ON, and electricity flows . the voltmeter shows the voltage . When switch is not pressed , the MOSFET is OFF and no current passes through it then voltmeter shows 0 volts.</p> <p>3. Zener voltage regulator : This is a Zener diode based Voltage regulator which is used to</p>		

maintain a stable output voltage despite variations in the input voltage or load.

- **IC 555 Simulations**

1. Astable : The 555 timer is used in astable mode . It produces continuous ON -OFF pulses without any external trigger. Its timing is controlled by two resistors and a capacitor .This ON – OFF output blink an LED or send clock pulses to the counter . It's commonly used in flashing lights , tone generators , and timers.

2. Monostable : This circuit is a monostable multivibrator using a 555 Timer IC .when button is pressed then LED is turns ON for a set time , then turns OFF automatically. Useful for making delays or timed actions.

3. Bistable : A 555 timer in bistable mode works like a flip flop. It has two stable states – ON and OFF . one button turns it ON, and another turns it OFF. It stays in that state until triggered again.

- **OP-AMP Simulation**

1. Non-inverting mode : This is a Non-inverting Amplifier circuit using an Op-Amp IC 741. In a non-inverting OP-AMP , the input is given to the non-inverting terminal . if it is higher than the inverting terminal , the output goes high . this amplified output can turn on an LED .

2. Inverting mode : In inverting mode , the input is given to the inverting terminal (-) and the Non-inverting terminal (+) is grounded. The OP-AMP gives an inverted

	<p>output. If the output is high , it turns ON the LED through resistor.</p> <p>3. Monostable :</p> <p>4. OP-AMP as Comparator : In this comparator circuit, if the voltage at the + terminal is higher than the – terminal , the output goes high and the LED turns ON. Otherwise, the output is low and the LED remains OFF.</p>		
Wed, Date 09/07/25	<p>1. OP-AMP as non-inverting Amplifier : A non-inverting amplifier boosts a signal without reversing its polarity. The input goes to the non-inverting terminal, and the same direction . Gain depends on two resistors . It's used to amplify signals without distortion .</p> <p>2. OP-AMP as inverting amplifier : An inverting amplifier uses an op-amp to increase signal strength while reversing its polarity . The input is given to the inverting terminal , and the output is inverted. Gain depends on two resistors .</p> <p>3. OP-AMP as differential Amplifier : A differential amplifier amplifies the difference between two input signals. It removes any part that's common to both (called common mode) , making it useful for noise reduction . The output depends on the voltage difference and resistor values.</p> <p>4. OP-AMP as voltage adder : An OP-AMP voltage adder also called as a summing amplifier . This circuit adds multiple input voltages together into one output.</p>		

	<p>It uses the inverting input and resistor to sum the signals . It is useful in audio mixers and signal processing.</p> <p>5. Zero crossing detector : This is a Non-inverting zero crossing detector using an op-amp It converts a sinusoidal input into square wave that toggles each time the signal crosses zero. It's useful in digital interfacing of analog AC signals and waveform conversion.</p> <ul style="list-style-type: none"> • We designed and simulate the different types of gates like AND, OR , NOR , NAND, XOR gate and verified their truth table . 		
Thu, Date 10/07/25	<p>1. BCD to seven segment decoder : This circuit counts from 0 to 9 and display the number on a 7-segment display. JK flip flop create a 4 bit binary counter. The binary output is sent to a 7448 BCD to 7 segment decoder, which lights up the correct segments. An AND gate resets the counter when it reaches 10, so it loops back to 0. A clock signal keeps the counting continuous.</p> <p>2. Decade counter : This circuit uses two decade counters .The first counter counts from 0 to 9 and display outputs on LED bar graph without resetting .The second uses a master reset to stop or restart counting after a set output. both counters are triggered by clock pulses.</p> <p>3. Pulse counter : This circuit uses IC 4026 to count pulses and display the number on 7-segment display. Each time the</p>		

		<p>button is pressed, A pulse send to the IC, increasing the count by 1. The IC directly drives the display to show the current number. Resistors are used to protect the 7-segment display.</p>		
	<p>Fri, Date 11/07/25</p>	<ul style="list-style-type: none"> • Today we Learned About how to create a PCB design layout using proteus . • Today we build a schematic circuit of a monostable multivibrator in proteus and observed its output . Then we created a PCB layout from the schematic diagram and viewed its 3D view. 		

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks	Signature of Industrial Mentor
Week 07	Mon, Date 14/07/25	<ul style="list-style-type: none"> Today we create a PCB layout of Three circuits : 1. Touch activated light switch : Firstly we build this circuits schematic diagram in a proteus and observed its output . Then created a PCB layout from schematic diagram and viewed its 3D view. 2. Clap switch : We also build this circuits schematic diagram in a proteus and observed its output . Then created a PCB layout from schematic diagram and viewed its 3D view. 3. Piano circuit : we also build this circuits schematic diagram in a proteus and observed its output . Then created a PCB layout from schematic diagram and viewed its 3D view. 		
	Tue, Date 15/07/25	<ul style="list-style-type: none"> Today we learned about logic 0, 1 and build circuits using logic : 1. relay driver circuit using the ULN2003 IC : When the logic input is 0, then relay stays OFF , and connected device doesn't work. When the logic input is 1 then relay turns ON , and the connected to a gets power. 2. Bulb ON or OFF using logic signal : When logic 0 is given, the bulb stays OFF and When logic 1 is given then bulb glows. 		

	<ul style="list-style-type: none"> • We also build various circuits using L293D IC : <ol style="list-style-type: none"> 1. DC motor driver circuit using the two motors : This circuit uses L293D IC to controls the direction and movement of two DC motors. when buttons are pressed signals go to the IC to move the motors. The motors can rotate forward or reverse direction based on the inputs. 2. DC motor direction control circuit using the L293D IC : Pressing the left and right switch changes to motors direction. If IN1 is 1 and IN2 is 0 then motor rotates in forward direction and When IN1 is 0 and IN2 is 1 then motor rotates in reverse direction. If both inputs are same then motor stops. 		
Wed, Date 16/07/25	<ul style="list-style-type: none"> • Today , We learned how to write programs using keil. we also learned how to create the HEX file of a program and how to insert those HEX files into proteus to run simulation .Then we observed the output of each simulation <ol style="list-style-type: none"> 1. LED Blink : First, we write the program in Keil to blink an LED . Then we created the HEX file of this program .Then we designed circuit in proteus and added the HEX file into the microcontroller, then we run the simulation . After running the simulation, we saw the LEDs are turning ON and OFF again and again in the loop. 2. Two LED blink : First, we write program in Keil to blink two LED one after another . Then we created the HEX file of this 		

	<p>program .Then we designed circuit in proteus and added HEX file into the microcontroller, then we run the simulation . After running the simulation, we saw the both LEDs started blinking one after the other again and again .</p>		
<p>Thu, Date 17/07/25</p>	<ul style="list-style-type: none"> • 8 LEDs blink : First, we write program in Keil to blink an LEDs, then we created the HEX file of this program .Then we designed circuit in proteus and added HEX file into the microcontroller, then we run simulation . After running the simulation, we saw the LEDs started blinking one by one as per the code , in continuous loop . 		
<p>Fri, Date 18/07/25</p>	<ul style="list-style-type: none"> • 7-Segment display counter : First, we write program in Keil to show a number from 0 to 9 on the 7-segment . Then we created the HEX file of this program . After that ,we designed circuit in proteus ,where the 7-segment display was connected to Port 2 of microcontroller . We then uploaded HEX file into the microcontroller and run the simulation . After running the simulation , we saw that the seven segment display showed numbers from 0 to 9 . • Simple for loop program : First, we write program in Keil using FOR LOOP to blink LED1 5 times ,then LED2 5 times , with a short delay in between . Then we created the HEX file of this program .After that ,we designed circuit in proteus . We then uploaded HEX file into the 		

		<p>microcontroller and run the simulation . After running the simulation , we saw that the LED1 is blinking 5 times ,then LED2 blinking 5 times . After that , there was a small delay and the process repeated continuously.</p>		
--	--	---	--	--

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks	Signature of Industrial Mentor
Week 08	Mon, Date 21/07/25	<ul style="list-style-type: none"> • If-if program : We write the program in Keil using if- if to control an LED with a button . Then we created the HEX file of this program .After that ,we designed circuit in proteus .We then uploaded HEX file into the microcontroller and run the simulation . After running the simulation , we observed that the when you press the button, the LED turns ON and when you release the button ,LED turns OFF. • If-else program : We write the program in Keil using if- else to control an LED with a button . Then we created the HEX file of this program .After that ,we designed circuit in proteus .We then uploaded HEX file into the microcontroller and run the simulation . After running the simulation , we saw that the when button is pressed, the LED turns ON otherwise it stays OFF . • While loop program : We write the program in Keil using while loop to control an LED with a button . Then we created the HEX file of this program .After that ,we designed circuit in proteus . We then uploaded HEX file into the 		

		<p>microcontroller and run the simulation . After running the simulation , we saw that the when button is pressed, the LED turns ON otherwise it stays OFF .</p> <ul style="list-style-type: none"> • LED Bulb manufacturing : Today we also learned about LED bulb manufacturing process .We saw what parts are used inside the bulbs and how to fix them. Then, we made LED bulbs using the tools and material provided. We made two LED bulbs - one is 9 watt ordinary white bulb, and the other is 2 watt ordinary green bulb. 		
	Tue, Date 22/07/25	<ul style="list-style-type: none"> • Go to program : Firstly ,We write the program in Keil using Goto to blink an LEDS with a button . Then we created the HEX file of this program .After that ,we designed circuit in proteus . We then uploaded HEX file into the microcontroller and run the simulation . After running the simulation , we saw that the when button is not pressed, the LED1 keeps blinking . When the button is pressed, the program jumps to another part and LED2 starts blinking. • LCD interfacing : Firstly ,We write the program in Keil for LCD interfacing to display messages on LCD. Then we created the HEX file of this program .After that ,we designed circuit in proteus and connected LCD to the microcontroller . We then uploaded HEX file into the microcontroller and run the simulation . After running the 		

	simulation , we saw that the LCD successfully displayed the messages as per the programmed code .		
Wed, Date 23/07/25	<ul style="list-style-type: none"> Motor driver interfacing using 2 switch 1 motor : Firstly ,We write the program in Keil to control a DC motor using two switches connected to microcontroller. Then we created the HEX file of this program . After that ,we designed circuit in proteus. We then uploaded HEX file into the microcontroller and run the simulation . After running the simulation , we saw that : <ul style="list-style-type: none"> - When switch1 is pressed the motor rotated in forward direction - When switch2 is pressed the motor rotated in reverse direction. - When switch1 and switch2 is pressed at the same time, the motor stops rotating. -When switch1 and switch2 is not pressed then also motor stops rotating. Motor driver interfacing using 4 switch 2 motor : Firstly ,We write the program in Keil to control a two DC motor using four switches connected to microcontroller. Then we created the HEX file of this program . After that ,we designed circuit in proteus. We then uploaded HEX file into the microcontroller and run the simulation . After running the simulation , we saw that : <ul style="list-style-type: none"> - When switch1 is pressed the motor1 rotates in forward direction . - When switch2 is pressed the 		

	<p>motor1 rotates in reverse direction.</p> <ul style="list-style-type: none"> - When switch3 is pressed the motor2 rotates in forward direction . - When switch4 is pressed , Motor2 rotates in reverse direction . - When switch1, switch2, switch3 and switch4 are not pressed both motors remain OFF. - When switch1, switch2, switch3 and switch4 are pressed at the same time both motors stops rotating . 		
Thu, Date 24/07/25	<ul style="list-style-type: none"> • Bluetooth interfacing : Firstly, we write a program in Keil to control LED using data received from the virtual terminal in proteus . Then we created the HEX file of this program .After that ,we designed circuit in proteus and connected virtual terminal to the microcontroller using TX and RX pins. We connected the virtual terminals TX pin to the microcontrollers RX pin, and the virtual terminals RX pin to the microcontrollers TX pin. We then uploaded HEX file into the microcontroller and run the simulation . After running the simulation we typed numbers like 1, 2 or 3 in the virtual terminal .when we typed 1,LED1 turned ON . When we typed 2, LED2 turned ON . When we typed 3, LED3 turned ON . • Keypad Interfacing : Firstly, we write a program in Keil to take input from a keypad using a microcontroller. Then we created 		

	<p>the HEX file of this program .After that ,we designed circuit in proteus and connected keypad and LCD to the microcontroller . We then uploaded HEX file into the microcontroller and run the simulation . After running the simulation we pressed numbers like 1, 2, 3 etc. , from the keypad. The microcontroller detected the pressed numbers. It then showed that number on the LCD.</p> <ul style="list-style-type: none"> • GSM Interfacing : we write the GSM interfacing program in Keil, then designed the simulation using microcontroller and connected LCD and virtual terminal to the microcontroller in proteus . and uploaded HEX file in the microcontroller. After that, we run the simulation and observed the output . 		
Fri, Date 25/07/25	<ul style="list-style-type: none"> • Today we started making microcontroller 8051 project : 4x4 LED matrix with 8051 to display various pattern . • Today we Firstly write the program for 4x4 LED matrix to display various pattern in Keil. Then, we created the HEX file of this program .After that ,we designed circuit in proteus using 8051 microcontroller and uploaded hex file into the microcontroller and run the simulation . After running simulation we observed that LEDS are blinked in various pattern as per the programmed code . We also created PCB layout for this . 		

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks	Signature of Industrial Mentor
Week 09	Mon, Date 28/07/25	Holiday		
	Tue, Date 29/07/25	Holiday		
	Wed, Date 30/07/25	<ul style="list-style-type: none"> Today we started to create an customized PCB for 4x4 matrix circuit : We followed the following Process to create a customized PCB: <ol style="list-style-type: none"> Layout printing : First we printed the PCB layout on thermal transfer paper or photo paper using a laser printer . Thermal printing : After printing the PCB layout on photo paper, we cut the copper clad board to the size o the printed layout, Then we placed the printed side of the paper on the top of the copper board and inserted it into the heat and pressure machine. When the machine reached at 335 degree Celsius the buzzer is activated then we flipped the board to heat the other side . After few minutes we removed the from the machine and let it cool down . Etching process : We use water to remove the paper from the board , Then we get black layout design 		

	<p>stayed on the copper surface .we placed the board into plastic container which is filled with ferric chloride solution. We left it in the solution for about 2 hours . This process is used to remove the unwanted copper from the board .once only the circuit design stays on the board, then it removed from the ferric chloride solution.</p>		
Thu, Date 31/07/25	<p>4. Drilling process : After etching , we used drill machine to make small holes at the marked points where the LED and other components would be soldered.</p> <p>5. Cleaning process : IN this process We used thinner and cloth to clean the black ink from the copper surface. This made copper tracks shiny and clear.</p> <p>6. Soldering of components : we soldered the components on PCB as per the PCB layout .</p>		
Fri, Date 01/08/25	<ul style="list-style-type: none"> • Today we learned how to upload programs hex file into 8051 microcontroller using Aryabhatta 8051 stamp board to run the hardware. • We uploaded the 4X4 LED matrix program's HEX file into the 8051 microcontroller and then run the 4x4 LED matrix hardware. After providing a 9V power supply to the hardware ,we observed the output as per the programmed code. 		

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks
Week 10	Mon, Date		
	Tue, Date		
	Wed, Date		
	Thu, Date		
	Fri, Date		
	Sat, Date		

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks
Week 11	Mon, Date		
	Tue, Date		
	Wed, Date		
	Thu, Date		
	Fri, Date		
	Sat, Date		

Week	Day & Date	Discussion Topics/Activity	Details of Work Allotted Till Next Session /Corrections Suggested/Faculty Remarks
Week 12	Mon, Date		
	Tue, Date		
	Wed, Date		
	Thu, Date		
	Fri, Date		
	Sat, Date		