Basic Electronics

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| NAME OF MINI PROJECT | PATH |
| **AUTOMATIC STREET LIGHT** | **G:\Celabcode\embedded-projects\pcb\_designs\mini\_projects** |
| **CLAP SWITCH** | **G:\Celabcode\embedded-projects\pcb\_designs\mini\_projects** |
| **OBJECT COUNTER** | **G:\Celabcode\embedded-projects\pcb\_designs\mini\_projects** |

1. Introduction to 15 Electronic Components

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| LED | Diode | Transistor | DC Motor |
| Resistor | Capacitor | Transformer | Switch |
| Connectors | PCB | IC’s/ IC Base | Variable Resistor |
| LDR | Condenser Mic | Speaker/Buzzer | 7 Segment Display |
| Relay |  |  |  |

1. Using Bread Board
2. Make mini projects on Bread Board (Any 2)

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| Clap Switch | Automatic Street Light |
| Object Counter | Melody Generator using UM66 |

1. Introduction to Soldering
2. Make mini projects on PCB with Soldering (Any 2)

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| Clap Switch | Automatic Street Light |
| Object Counter | Melody Generator using UM66 |

PCB Designing

1. Working on Eagle Win
2. Creating PCB Layout
3. Make mini projects on Eagle Win (Any 2)

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| Clap Switch | Automatic Street Light |
| Object Counter | Melody Generator using UM66 |

1. 5 Items used in PCB Etching Process
2. Make Mini project or module with PCB Etching (Any 2)

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| --- | --- |
| Clap Switch | Automatic Street Light |
| Object Counter | Melody Generator using UM66 |
| Motor Driver | Relay Driver |

8051 Programming:

1. Pin Diagram and ports of 8051
2. AVR Programmer for 8051 program uploading
3. Introduction to Keil Software
4. Interfacing modules with 8051 (Any 5)

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| Motor Driver | IR Module |
| DTMF Module | Keypad |
| LCD Module | 7 Segment Display |
| Relay Driver | PIR Motion Sensor |

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| **5 LAB DESIGN MODULES** |

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| NAME OF MODULES | PATH |
| **DTMF** | **G:\Celabcode\embedded-projects\pcb\_designs\modules** |
| **MOTOR DRIVER** | **G:\Celabcode\embedded-projects\pcb\_designs\modules** |
| **LDR MODULES** | **G:\Celabcode\embedded-projects\pcb\_designs\modules** |
| **DUAL CHANNEL RELAY DRIVER** | **G:\Celabcode\embedded-projects\pcb\_designs\modules** |
| **KEYPAD MODULE** | **G:\Celabcode\embedded-projects\pcb\_designs\modules** |

1. Making projects using 8051 (Any 2)

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| Bi Directional Visitor Counter | Electronic Lock |
| PWM Motor Speed Control | RS232 based data transfer from pc to 8051 |

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| **2 projects based on 8051.** |

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| **NAME OF THE PROJECT** | **PATH** |
| **BIDIRECTIONAL VISITOR COUNTER** | **G:\Celabcode\embedded-projects\project\_codes\8051\Projects** |
| **DIGITAL ALARM CLOCK** | **G:\Celabcode\embedded-projects\project\_codes\8051\Projects** |

Arduino Uno Programming

1. Pin Diagram and ports of ATMega328/Arduino
2. Using Arduino IDE for uploading programs to Arduino
3. Interfacing modules with Arduino (Any 8)

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| Motor Driver | IR Module |
| DTMF Module | Keypad |
| LCD Module | 7 Segment Display |
| Relay Driver | PIR Motion Sensor |

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| **5 Modules interfacing with Arduino Uno**. |

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| NAME OF MODULES INTERFACE WITH ARDUINO | PATH |
| **LCD** | **G:\Celabcode\embedded-projects\project\_codes\arduino\Interfacing** |
| **KEYPAD** | **G:\Celabcode\embedded-projects\project\_codes\arduino\Interfacing** |
| **RF MODULE** | **G:\Celabcode\embedded-projects\project\_codes\arduino\Interfacing** |
| **HUMIDITY SENSOR** | **G:\Celabcode\embedded-projects\project\_codes\arduino\Interfacing** |
| **ULTRASONIC DISTANCE METER** | **G:\Celabcode\embedded-projects\project\_codes\arduino\Interfacing** |

1. Making projects using Arduino (Any 2)

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| **2 projects based on Arduino.** |

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| **NAME OF THE PROJECT** | **PATH** |
| **DTMF ROBOT** | **G:\Celabcode\embedded-projects\project\_codes\arduino\Projects** |
| **TEMPERATURE SENSOR USING LM 35** | **G:\Celabcode\embedded-projects\project\_codes\arduino\Projects** |

Robotics:

1. Introduction to 10 Components used to make a simple robot
2. Making different Chassis basics
3. Using 3 basic Modules required for Robotics
4. Make 3 Robots using Arduino board

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| **2 Demo Project to Display** |

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| **REMOTE CONTROLE MOTOR ON OFF** |
| **WIRELESS POWER TRANSMISSION** |