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| **Digital links of Electrical Engineering Labs.** |  |
| **Name of Lab : Electrical Machine Lab - I** |  |  |  |
| S.No. | Name of Experiment | Virtual Lab Link |  |
| 1 | Speed control of dc shunt motor (i) Armature control method (ii) Field control method | <http://em-iitr.vlabs.ac.in/exp1/index.php> |   |  |
| 2 | To perform open circuit and short circuit test for determining: (i) equivalent circuit (ii) the regulation and (iii) efficiency of a transformer from the data obtained from open circuit and short circuit test at full load | <http://em-iitr.vlabs.ac.in/exp7/index.php> | <http://vlabs.iitkgp.ernet.in/asnm/exp19/index.html> |  |
| **Name of Lab :ELECTRONICS -II** |   |   |   |
| 1 | To generate square-wave using an astable multivibrator and to observe the wave form on a CRO and verify the result using p-spice software | <http://he-coep.vlabs.ac.in/Experiment8/Theory.html?domain=ElectronicsandCommunications&lab=Hybrid%20Electronics%20Lab> |   |   |
| 2 | To study the pin configuration and working of IC 555 and its use as monostable and astable multivibrator | <http://he-coep.vlabs.ac.in/Experiment8/Theory.html?domain=ElectronicsandCommunications&lab=Hybrid%20Electronics%20Lab> |   |   |
| **Name of Alternate Lab :FOEE Lab** |  |  |  |  |
| 1 | Determination of voltage-current relationship in a dc circuit under specific physical conditions and to draw conclusions (to verify ohm’s law) | <http://vlabs.iitkgp.ernet.in/be/exp4/index.html> |   |   |
| 2 | Verification of Kirchhoff’s current and voltage laws applied to DC circuits | <http://vlab.amrita.edu/?sub=1&brch=75&sim=217&cnt=1> |   |   |
| 3 | To construct an RL and RC circuit and to measure  a) their impedance  b) phase angle between voltage and current c) construct impedance triangle | <http://vlab.amrita.edu/?sub=1&brch=75&sim=332&cnt=1> |   |   |
| 4 | Measurement of power and power factor of a single phase RLC circuit. To calculate kVA and kVAR | <http://vlab.amrita.edu/?sub=1&brch=75&sim=330&cnt=1> |  |  |
| **Name of Alternate Lab :ELECTRONICS -I** |  |  |  |  |
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| 1 |  a) Identification and testing of electronic components such as resistor, inductor,capacitor, diode, transistor and different types of switches used in Electronic circuits | <http://vlabs.iitkgp.ernet.in/be/exp1/index.html> | <http://vlabs.iitkgp.ernet.in/be/exp2/index.html> |  |
|   | b) Measurement of resistances using multimeter and their comparison with colour code values |   |   |  |
| 2 | To plot V-I characteristics of a Semiconductor diode and to calculate its static and dynamic resistance | <http://vlabs.iitkgp.ernet.in/be/exp5/index.html> |   |  |
| 3 |  Observation of input and output wave shapes of a half-wave rectifier and verification of relationship between dc output and ac input voltage | <http://vlabs.iitkgp.ernet.in/be/exp6/index.html> |   |  |
| 4 |  Observation of input and output wave shapes of a full wave rectifier and verification of relationship between dc output and ac input voltage | <http://vlabs.iitkgp.ernet.in/be/exp7/index.html> |   |  |
| 5 | 6. Observation of input and output wave shapes of a full wave rectifier with (i) shunt capacitor) (ii) series inductor (iii) π filter circuits | <http://vlabs.iitkgp.ernet.in/be/exp8/index.html> |   |  |
| 6 | Plotting input and output characteristics of a transistor in CB configuration | <http://vlabs.iitkgp.ernet.in/be/exp12/index.html> |   |  |
| 7 |  Plotting input and output characteristics of a transistor in CE configuration | <http://vlabs.iitkgp.ernet.in/be/exp11/index.html> |   |  |
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| **Name of Lab :DE LAB** |  |  |  |
| 1 | Demonstration of various components/sub-components of a PLC, Learning functions of different modules of a PLC system | <http://ied-nitk.vlabs.ac.in/INTRODUCTION%20TO%20PROGRAMMABLE%20LOGIC%20CONTROLLER%20AND%20INTRODUCTION%20TO%20DIGITAL%20IO%20INTERFACE%20TO%20PLC/index.html> | http://plc-coep.vlabs.ac.in/exp1/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab! |  |
| 2 |  Demonstration to step 5 programming language, ladder diagram concepts, instruction list syntax | <http://ied-nitk.vlabs.ac.in/INTRODUCTION%20TO%20LADDER%20LOGIC/index.html> |   |  |
| 3 |  Basic logic operations, AND, OR, NOT functions | <http://plc-coep.vlabs.ac.in/exp2/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!> |   |  |
| 4 | Use of PLC for an application( teacher may decide) | <http://ied-nitk.vlabs.ac.in/appplc/index.html> | <http://plc-coep.vlabs.ac.in/exp3/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!> |  |
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| **Name of Lab :DE LAB** |  |  |  |
| 1 | Construction of Half Adder using gates | <http://he-coep.vlabs.ac.in/Experiment1/Theory.html?domain=ElectronicsandCommunications&lab=Hybrid%20Electronics%20Lab> |  |  |
| 2 | Construction of Full Adder using gates | <http://he-coep.vlabs.ac.in/Experiment1/Theory.html?domain=ElectronicsandCommunications&lab=Hybrid%20Electronics%20Lab> |  |  |
| 3 | Construction and testing of any counter | <http://he-coep.vlabs.ac.in/Experiment3/Theory.html?domain=ElectronicsandCommunications&lab=Hybrid%20Electronics%20Lab> |  |  |
| 4 | Verification of operation of a 8-bit D/A Converter | <http://he-coep.vlabs.ac.in/Experiment6/Theory.html?domain=ElectronicsandCommunications&lab=Hybrid%20Electronics%20Lab> |  |  |
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| **Name of Lab :Instrumentation Lab** |  |  |
| 1 |       To measure the level of a liquid using a transducer | <http://sl-coep.vlabs.ac.in/Capacitance/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Sensor%20Lab!> |  |  |
| 2 |                 To measure temperature using a thermo-couple | <http://sl-coep.vlabs.ac.in/Thermocouple/thermocouple.html> |  |  |
| 3 |                 To measure linear displacement using LVDT | <http://sl-coep.vlabs.ac.in/LinearVariableDifferntialTransformer/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Sensor%20Lab!> |  |  |
| 4 |               To study the use of electrical strain gauge | <http://sl-coep.vlabs.ac.in/StrainGuage/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Sensor%20Lab!> |  |  |
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| **Name of Alternate Lab : Power System Lab** |
| 1 | Testing of the dielectric strength of transformer oil and air | <http://vp-dei.vlabs.ac.in/Dreamweaver/exp4.html> |   |  |
| **Name of Alternate Lab : Electrical Measuring Instruments and Instrumentation**  |
| 1 | Measurement of power and power factor of a three-phase balanced load by two wattmeter method | <http://vlabs.iitkgp.ernet.in/asnm/exp7/index.html> |  |  |