

Website:

www.vlab.co.in


VIRTUAL LABS
An MHRD Group of India initiative

An Initiative of Ministry of Human Resource Development (MHRD)
Under the National Mission on Education through ICT

[Home](#)



PARTICIPATING INSTITUTES


IIT DELHI

IIT BOMBAY

IIT KANPUR

IIT KHARAGPUR

IIT MADRAS

Objectives of the Virtual Labs:

- To provide remote-access to Labs in various disciplines of Science and Engineering. These Virtual Labs would cater to students at the undergraduate level, post graduate level as well as to research scholars.
- To enthuse students to conduct experiments by arousing their curiosity. This would help them in learning basic and advanced concepts through remote experimentation.
- To provide a complete Learning Management System around the Virtual Labs where the students can avail the various tools for learning, including additional web-resources, video-lectures, animated demonstrations and self evaluation.
- To share costly equipment and resources, which are otherwise available to limited number of users due to constraints on time and geographical distances.

Announcements

1. [Click here for the Lab Feedback Form.](#)
2. [Virtual Labs on YouTube.](#)
3. [Click here for NCs Registration.](#)
4. [Click here for NCs Login.](#)
5. [Click here for VLab](#)

One common website to access all Virtual Labs

Participating Institutes



IIT Delhi



IIT Bombay



IIT Kanpur



IIT Kharagpur



IIT Madras



IIT Roorkee



IIT Guwahati



IIIT Hyderabad



Amrita University



Dayalbagh University



NITK Surathkal



COE Pune



568325/2020/ACADEMIC SECTION - 2

Virtual Labs Experiments with URL for ECE branch as per the C_18
Team Leader : Dr.Ch.Vidya Sagar

Networking analysis and analog communication lab practice

S.No	Name of experiment
1	IC 741 inverting amplifier
2	Summing amplifier
3	Familiarize with ic741
4	IC 741 non inverting amplifier
5	Ic 741 voltage follower
6	Difference amplifier
7	Astable multivibrator, Op Amp differentiator, op Amp integrator
8	Thevins theorem
9	Nortons theorem
10	Super position theorem
11	Maximum power transfer theorem

Digital electronics lab

S.No	Name of lab
1	Digital electronics lab
2	Digital electronics lab
3	Digital electronics lab
4	Digital electronics lab
5	Digital electronics lab
6	Digital electronics lab
7	Digital electronics lab
8	Digital electronics lab
9	Digital electronics lab
10	Digital electronics lab
11	Digital electronics lab
12	Digital electronics lab
13	Digital electronics lab

S.No	Name of lab
1	MATLAB Practice Lab
2	MATLAB Practice Lab
3	MATLAB Practice Lab
4	MATLAB Practice Lab
5	MATLAB Practice Lab/ Basic Electronics lab/ Semiconductor Devices lab /Circuit Design and simulation lab
6	MATLAB Practice Lab
7	MATLAB Practice Lab
8	Analog Communication lab/

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9	Digital Communication lab/ Circuit design and simulation lab
10	Circuit design and simulation lab
11	Circuit design lab/DCCN lab
12	Network Analysis lab/Measurements lab

URL link
http://www.circuitgallery.com/2012/04/op-amp-741-inverting-amplifier-circuit.html
https://www.youtube.com/watch?v=jsKSfaFQ4d4
https://www.elprocus.com/ic-741-op-amp-tutorial-and-characteristics/
https://www.youtube.com/watch?v=uyOfonR_rEw
http://www.learningaboutelectronics.com/Articles/Voltage-follower
http://vlabs.iitb.ac.in/vlabs-dev/vlab_bootcamp/bootcamp/electronerds/labs/exp1/simulation.html
http://vlabs.iitb.ac.in/vlabs-dev/vlab_bootcamp/bootcamp/electronerds/labs/index.html
http://vlabs.iitkgp.ernet.in/asnm/
http://vlabs.iitkgp.ernet.in/asnm/
http://vlabs.iitkgp.ernet.in/asnm/
http://vlabs.iitkgp.ernet.in/asnm/

URL link
http://www.brcmcet.edu.in/downloads/files/n522061f647956.pdf
http://vlabs.iitkgp.ernet.in/dec/
https://www.youtube.com/watch?v=gagjRo46lFQ
https://www.youtube.com/watch?v=cdMJvFT-Afc
https://www.youtube.com/watch?v=mZ9VWA4cTbE
http://www.rpsinstitutions.org/downloads/DE%20MANNUAL.pdf
https://www.iitg.ac.in/cseweb/vlab/Digital-System-Lab/experiments.php
https://www.gopalancolleges.com/gcem/course-material/ece/manuals/sem-III/15ECL38_%20digital-
https://www.researchgate.net/publication/319876885_Digital_Electronics_Lab_Manual_Regulation_2013_Anna
http://bhagwantuniversity.ac.in/wp-content/uploads/2016/01/de-lab.pdf
https://ssit.edu.in/dept/assignment/declabmanual.pdf
https://www.slideshare.net/nagad86/de-lab-manual

URL link
http://faculty.washington.edu/tadg/BEE235S10/Lab/LabNew1.pdf
https://www.engr.colostate.edu/ECE411/pmy/lab01/comp1.pdf
https://www.mccormick.northwestern.edu/documents/students/undergraduate/introduction-to-matlab.pdf
https://in.mathworks.com/help/matlab/
http://vlab.co.in/broad-area-electronics-and-communications
https://in.mathworks.com/academia/tah-portal/college-of-engineering-pune-40525337.html
http://coecs.ou.edu/Joseph.P.Havlicek/ece2713/handouts/MatlabVirtualLabFA15.pdf
https://www.etti.unibw.de/labalive/#welcome

https://phet.colorado.edu/en/simulation/circuit-construction-kit-dc-virtual-lab
http://vlabs.iitkgp.ernet.in/ant/
http://vlabs.iitkgp.ernet.in/asnm/#

Virtual Labs Experiments with URL for EIE b

S.No	Name of the Laboratory
1	Programmable Logic Controller Lab
2	Sensors and Transducers Lab
	Sensors Modeling & Simulation Lab
3	Process Control
4	Biomedical Instrumentation Lab
5	Analytical Instrumentation Lab
6	Basic Electronics Lab
7	Digital Electronics Lab
8	Linear Integrated Circuits Lab
9	Micro Controllers lab

branch as per the C_18

virtual lab URL
http://plc-coep.vlabs.ac.in/
http://ial-coep.vlabs.ac.in/
http://202.3.77.143/virtuallab/login.php
http://sl-coep.vlabs.ac.in/
http://uorepc-nitk.vlabs.ac.in/
http://bmosp-coep.vlabs.ac.in/#
http://mas-iiith.vlabs.ac.in/
http://mfs-iiith.vlabs.ac.in/
http://basicelectronics.iitkgp.ernet.in/
http://vlabs.iitkgp.ernet.in/be/
http://vlabs.iitkgp.ernet.in/dec/
http://vlab.amrita.edu/?sub=3&brch=225
http://vlabs.iitb.ac.in/vlabsdev/vlab_bootcamp/bootcamp/electronerds/labs/index.html
http://vlabs.iitb.ac.in/vlabs-dev/labs/8051-Microcontroller-Lab/labs/index.php

Virtual lab is an Initiative of Ministry of Human Resource Development under the National Mission on Education through ICT. Every Polytechnic / Education Institution can individually apply for and become a Nodal Centre through the Registration process called **“Expression of Interest”(EOI)** for setting-up Nodal Center of Virtual Labs.

Electrical Machines Lab(IIT ROORKEE)

List of experiments

1. [Speed Control of DC motor by varying armature and field resistance](#)
2. [Speed control of DC motor by using Ward– Leonard Method of speed control](#)
3. [Load Characteristics of DC shunt generator](#)
4. [Magnetisation Characteristics of DC shunt generator](#)
5. [Determination of the efficiency of a dc motor by loss summation method\(Swinburne's test\)](#)
6. [Speed control of slipring Induction Motor](#)
7. [Determination of Transformer equivalent circuit from Open Circuit and Short Circuit Test](#)

1. <http://em-iitr.vlabs.ac.in/exp1/index.php>
2. <http://em-iitr.vlabs.ac.in/exp2/index.php>
3. <http://em-iitr.vlabs.ac.in/exp3/index.php>
4. <http://em-iitr.vlabs.ac.in/exp4/index.php>
5. <http://em-iitr.vlabs.ac.in/exp5/index.php>
6. <http://em-iitr.vlabs.ac.in/exp6/index.php>
7. <http://em-iitr.vlabs.ac.in/exp7/index.php>

Electrical Machines Lab(COEP)

List of experiments

1. Load Test On Separately Excited DC Motor
2. Speed Control of Separately Excited DC Motor
3. No Load Test on Three Phase Induction Motor
4. Blocked Rotor Test on Three Phase Induction Motor
5. Open Circuit Test on Three Phase Alternator
6. Short Circuit Test on Three Phase Alternator
7. Load Test on Three Phase Alternator
8. V and Inverted V curves of Synchronous Motor

1. <http://em-coep.vlabs.ac.in/Exp1/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Electrical%20Machines!>
2. <http://em-coep.vlabs.ac.in/Exp2/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Electrical%20Machines!>
3. <http://em-coep.vlabs.ac.in/Exp3/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Electrical%20Machines!>
4. <http://em-coep.vlabs.ac.in/Exp4/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Electrical%20Machines!>
5. <http://em-coep.vlabs.ac.in/Exp5/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Electrical%20Machines!>
6. <http://em-coep.vlabs.ac.in/Exp6/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Electrical%20Machines!>
7. <http://em-coep.vlabs.ac.in/Exp7/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Electrical%20Machines!>
8. <http://em-coep.vlabs.ac.in/Exp8/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Electrical%20Machines!>

Electrical Machines Lab(IITG)

List of experiments

1. Magnetic Field Behaviour in single coil
2. Rotating Magnetic Field Behaviour in two coils
3. Rotating Magnetic Field Behaviour in three coils
4. The DC Test for Stator Resistance
5. No-Load Test
6. Blocked-Rotor Test
7. Stator Resistance Starter
8. Auto Transformer Starting
9. Star-Delta Starting

1. http://vem-iitg.vlabs.ac.in/Magnetic_Field_Behaviour_in_single_coil.html
2. <http://vem-iitg.vlabs.ac.in/Rotating%20Magnetic%20Field%20Behaviour%20in%20two%20coils.html>
3. <http://vem-iitg.vlabs.ac.in/Rotating%20Magnetic%20Field%20Behaviour%20in%20three%20coils.html>
4. http://vem-iitg.vlabs.ac.in/Introduction_DC.html
5. http://vem-iitg.vlabs.ac.in/Introduction_Noload.html
6. http://vem-iitg.vlabs.ac.in/Introduction_blockr.html
7. [http://vem-iitg.vlabs.ac.in/Stator%20Resistance%20Starter\(intro\).html](http://vem-iitg.vlabs.ac.in/Stator%20Resistance%20Starter(intro).html)
8. [http://vem-iitg.vlabs.ac.in/Auto%20Transformer%20Starting\(intro\).html](http://vem-iitg.vlabs.ac.in/Auto%20Transformer%20Starting(intro).html)
9. [http://vem-iitg.vlabs.ac.in/Star%20Delta%20Starting\(intro\).html](http://vem-iitg.vlabs.ac.in/Star%20Delta%20Starting(intro).html)

PLC LAB

List of experiments

- Study hardware and software used in PLC
- Implementation Logic Gates
- Implementation Of DOL Starter
- Implementation Of On-Delay Timer
- Implementation Of Off-Delay Timer
- Implementation Of Up-Down Counter
- Implementation Of PLC Arithmetic Instructions
- Implementation Of PID Controller

1. <http://plc-coep.vlabs.ac.in/exp1/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!>
2. <http://plc-coep.vlabs.ac.in/exp2/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!>
3. <http://plc-coep.vlabs.ac.in/exp3/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!>
4. <http://plc-coep.vlabs.ac.in/exp4/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!>
5. <http://plc-coep.vlabs.ac.in/exp5/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!>
6. <http://plc-coep.vlabs.ac.in/exp6/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!>
7. <http://plc-coep.vlabs.ac.in/exp7/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!>
8. <http://plc-coep.vlabs.ac.in/exp8/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Programmable%20Logic%20Controller%20Lab!>

Industrial Automation

List of experiments

- Study hardware and software platforms for DCS
- Simulate analog and digital function blocks
- Study, understand and perform experiments on timers and counters
- Logic implementation for traffic Control Application
- Logic implementation for Bottle Filling Application
- Tune PID controller for heat exchanger using DCS
- FBD for autoclavable laboratory fermenter
- Develop graphical user interface for the fermenter plant

1. <http://ial-coep.vlabs.ac.in/Expt1/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Industrial%20Automation%20Laboratory!>

2. <http://ial-coep.vlabs.ac.in/Expt2/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Industrial%20Automation%20Laboratory!>
3. <http://ial-coep.vlabs.ac.in/Expt3/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Industrial%20Automation%20Laboratory!>
4. <http://ial-coep.vlabs.ac.in/Expt4/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Industrial%20Automation%20Laboratory!>
5. <http://ial-coep.vlabs.ac.in/Expt5/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Industrial%20Automation%20Laboratory!>
6. <http://ial-coep.vlabs.ac.in/Expt6/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Industrial%20Automation%20Laboratory!>
7. <http://ial-coep.vlabs.ac.in/Expt7/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Industrial%20Automation%20Laboratory!>
8. <http://ial-coep.vlabs.ac.in/Expt8/Theory.html?domain=Electrical%20Engineering&lab=Welcome%20to%20Industrial%20Automation%20Laboratory!>

Industrial Electric Drives and Application of PLC

List of experiments

- [Experiment 1: PLC On-Delay Timer Instruction](#)
- [Experiment 2: PLC Off-Delay Timer Instruction](#)
- [Experiment 3: PLC Retentive Timer On Instruction](#)

<http://ied-nitk.vlabs.ac.in/ptinst/index.html>

<http://ied-nitk.vlabs.ac.in/plcinst/index.html>

<http://ied-nitk.vlabs.ac.in/appplc/index.html>

Virtual Power Lab

List of experiments

1. [To study the Synchronization of alternator with infinite bus bar.](#)
 2. [To determine the direct axis reactance \(\$X_d\$ \) and quadrature axis reactance \(\$X_q\$ \) of synchronous machine.](#)
 3. [To determine positive sequence, negative sequence and zero sequence reactances of an alternator.](#)
 4. [To measure the dielectric Strength of transformer oil.](#)
 5. [To Study the effect of different shape of electrodes on dielectric \(air\) breakdown.](#)
 6. [To Study the gas actuated Buchholz relay for oil filled transformer.](#)
 7. [To Study the over-current relay and the effect of PSM and TSM.](#)
 8. [To determine the sub-transient \(\$x_d''\$ \), transient \(\$x_d'\$ \) and steady state reactance \(\$x_d\$ \) of a synchronous machine.](#)
 9. [To Study the Ferranti Effect of a transmission line/cable.](#)
1. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp1.html>
 2. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp2.html>
 3. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp3.html>
 4. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp4.html>
 5. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp5.html>

6. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp6.html>
7. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp7.html>
8. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp8.html>
9. <http://vp-dei.vlabs.ac.in/Dreamweaver/exp9.html>

Basic Electronics

List of experiments

1. [Familiarisation with Resistor](#)
2. [Familiarisation with Capacitor](#)
3. [Familiarisation with Inductor](#)
4. [Ohm's Law](#)
5. [VI Characteristics of a Diode](#)
6. [Half Wave Rectification](#)
7. [Full Wave Rectification](#)
8. [Capacitive Rectification](#)
9. [Voltage Multipliers](#)
10. [Zener Diode–Voltage Regulator](#)
11. [BJT Common Emitter Characteristics](#)
12. [BJT Common Base Characteristics](#)
13. [Studies on BJT CE Amplifier](#)
14. [RC Frequency Response](#)
15. [RC Differentiator and Integrator](#)

1. <http://vlabs.iitkgp.ernet.in/be/exp1/index.html>
2. <http://vlabs.iitkgp.ernet.in/be/exp2/index.html>
3. <http://vlabs.iitkgp.ernet.in/be/exp3/index.html>
4. <http://vlabs.iitkgp.ernet.in/be/exp4/index.html>
5. <http://vlabs.iitkgp.ernet.in/be/exp5/index.html>
6. <http://vlabs.iitkgp.ernet.in/be/exp6/index.html>
7. <http://vlabs.iitkgp.ernet.in/be/exp7/index.html>
8. <http://vlabs.iitkgp.ernet.in/be/exp8/index.html>
9. <http://vlabs.iitkgp.ernet.in/be/exp9/index.html>
10. <http://vlabs.iitkgp.ernet.in/be/exp10/index.html>
11. <http://vlabs.iitkgp.ernet.in/be/exp11/index.html>
12. <http://vlabs.iitkgp.ernet.in/be/exp12/index.html>
13. <http://vlabs.iitkgp.ernet.in/be/exp13/index.html>
14. <http://vlabs.iitkgp.ernet.in/be/exp14/index.html>
15. <http://vlabs.iitkgp.ernet.in/be/exp15/index.html>

Power Electronics
(Simulation Models (ePED Lab))

List of experiments

- [Indirect Field Oriented Control of Squirrel-Cage Induction Motor](#)
- [Direct Torque Control of Induction Machine](#)
- [Direct Torque Control with Space Vector Modulator](#)
- [DC Motor Supplied with Transistor Converter](#)
- [Flux and Speed Estimation of Induction Machine](#)
- [Compensated Frequency Converter AC/DC/AC](#)
- [Drive System with Permanent Magnet Synchronous Motor](#)
- [Tuning of Controllers in Drive System with DC Motor](#)
- [Servo Drive](#)

Power Electronics on MATLAB Simulink

List of experiments

IGBT Characteristics

<https://ch.mathworks.com/help/physmod/sps/examples/igbt-characteristics.html>

Using MATLAB Simulink all EEE and Science laboratory experiments can be practiced with existing models and also by developing the circuit. In addition, MATLAB is an user friendly and self learning platform.

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S.No	Experiment Title	AVAILABILITY STATUS IN V LABS	Key components
1	Introduction to CAD		- Open / close AutoCAD program - Understands AutoCAD Graphic User Interface(GUI) and various toolbars
2	Selecting commands & Working withdrawing		- Use prompt history window and scripts - Practice the setting up a drawing - Practice the Entity
3	a) Viewing drawing		- Use Scroll bar, pan command, and rotating view to move around within drawing - Control visual elements like Fill, Text, Blips and - Line weight
	b) Working with coordinates		- Use Two dimensional coordinates and Three dimensional coordinates - Use right-hand rule - Use filters in two and three dimensions - Define user coordinate system
4	Creating simple and complex entities		- Draw the simple shapes like lines, circles, arcs and complex shapes like polygons, planes etc., - Practice adding of hatch pattern
5	Getting Drawing information		- Measure the intervals and distance between Entities. - Divide the entities in to segments - Calculate the areas defined by points, of closed entities, and Combined entities
6	Use the Text tool to create various types of text fonts and its styles		- Calculate the areas defined by points, of closed entities, and Combined entities - Use filters in two and three dimensions - Draw the simple shapes like lines, circles, arcs and complex shapes like polygons, planes etc., - Practice the adding of hatch pattern
7	Dimensioning drawing		- Practice the Controlling of dimension properties like arrow types, size, dim line adjustment, dim offset, text size , primary and secondary units and format - Practice the Controlling of dimension units, and dimension tolerance
8	Isometric Views		Use Iso snap command to create Isometric views
9	2D Drawings		Use proper 2D commands to create 2D drawings

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Unit No	Experiment Title	AVAILABILITY STATUS IN V- LABS	Key components
1	Basic Operations of Chain Surveying		a) Practice unfolding and folding of a chain. b) Ranging and chaining of lines on level ground and recording in field book to measure the distance between two stations. c) Chaining a line involving indirect ranging. d) Setting and measuring the offsets-Perpendicular and Oblique offsets
2	Chain Triangulation and areas		a) Measurement of land areas -cross staff survey b) Chain triangulation around the building covering a small area with other details taking offsets and recording.
3	Introduction to Compass Surveying		a) Setting up the compass - observations of bearings b) Calculation of included angles from the observed bearings
4	Traversing using compass		a) Traversing with prismatic compass and chain - Open Traverse. b) Traversing with prismatic compass and chain- Closed traverse. c) Plotting the closed traverse from field data & adjust for closing error-Bowditch rule. d) Determination of area bounded by the given points by the method of Radiation e) Determination of the distance between two accessible points involving single setting of the instrument.

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S.No	Experiment Title	AVAILABILITY STATUS IN V LABS	Key components
			- Open / close AutoCAD program - Understands AutoCAD Graphic User Interface(GUI) and various toolbars
1	Introduction to CAD		- Use prompt history window and scripts - Practice the setting up a drawing - Practice the Entity
2	Selecting commands & Working withdrawing		- Use Scroll bar, pan command, and rotating view to move around within drawing - Control visual elements like Fill, Text, Blips and - Line weight
	a) Viewing drawing		- Use Two dimensional coordinates and Three dimensional coordinates - Use right-hand rule - Use filters in two and three dimensions - Define user coordinate system
3	b) Working with coordinates		- Draw the simple shapes like lines, circles, arcs and complex shapes like polygons, planes etc., - Practice adding of hatch pattern
4	Creating simple and complex entities		- Measure the intervals and distance between Entities. - Divide the entities in to segments - Calculate the areas defined by points, of closed entities, and Combined entities
5	Getting Drawing information		- Calculate the areas defined by points, of closed entities, and Combined entities - Use filters in two and three dimensions - Draw the simple shapes like lines, circles, arcs and complex shapes like polygons, planes etc., - Practice the adding of hatch pattern
6	Use the Text tool to create various types of text fonts and its styles		- Practice the Controlling of dimension properties like arrow types, size, dim line adjustment, dim offset, text size , primary and secondary units and format - Practice the Controlling of dimension units, and dimension tolerance
8	Dimensioning drawing		Use Iso snap command to create Isometric views
9	2D Drawings		Use proper 2D commands to create 2D drawings

DETAILS OF URLS AVAILABLE IN VLABS PORTAL			
DIPLOMA IN MECHANICAL ENGINEERING			
S.NO	Lab	List Of Experiments	VIRTUAL LAB PORTAL URL
1	WORKSHOP PRACTICE	1. FITTING AND FOUNDRY	NOT AVAILABLE
		2. CARPENTRY	
		3. SHEET METAL	
2	FUELS LAB	1. FLASH AND FIRE POINT TEST	NOT AVAILABLE
		2. VISCOSITY MEASUREMENT TEST	
		3. CALORIFIC VALUE TEST	
		4. CARBON RESIDUE TEST	
		5. CALIBRATION OF PRESSURE GAUGE	
3	MANUFACTURING AND FABRICATION LAB - I	1. FOUNDRY	NOT AVAILABLE
		2. TURNING	
		3. WELDING	
4	CAD LAB PRACTICE	ALL THE EXPERIMENTS CAN BE DONE BY USING AUTO CAD SOFTWARE	NOT AVAILABLE
5	MATERIAL TESTING LAB	1 TENSILE TEST	sm-nitk.vlabs.ac.in/#
		2. COMPRESSION TEST	
		3. IMPACT TEST	
		4. HARDNESS TEST	
		5. TORSION TEST ON M.S BAR	
		6. STUDY OF MICRO STRUCTURE OF METAL AND ALLOY	NOT AVAILABLE
6	THERMAL ENGG. LAB	1. ECONOMIC SPEED TEST	NOT AVAILABLE
		2. COOLING CURVES	
		3. MORSE TEST	
		4. PERFORMANCE CURVES	
		5. HEAT BALANCE SHEET	
		6. MORCET BOILER	

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7	REFRIGERATION AND AIR CONDITIONING LAB	1. COP OF VCR TEST RIG	NOT AVAILABLE
		2. COP OF DOMESTIC REF. TEST RIG	
		3. COP OF WATER COOLING TEST RIG	
		4. COP OF AC SYSTEM	
		5. LEAK DETECTION OF REF. EQUIPMENT	
		6. VACCUMIZATION AND CHARGING OF COMPRESSOR	
8	MANUFACTURING AND FABRICATION LAB - II	1. TURNING ON LATHE	NOT AVAILABLE
		2. WELDING	
		3. FOUNDRY	
9	CAD 3D/CAM LAB	ALL THE EXPERIMENTS CAN BE DONE BY USING AUTO CAD SOFTWARE PARTIALLY, PRO-E, UNIGRAPHICS AND CATIA	NOT AVAILABLE
10	HYDRAULICS LAB	1. VENTURIMETER	fm-nitk.vlabs.ac.in/#
		2. PIPE FRICTION	
		3. PELTON WHEEL	NOT AVAILABLE
		4. KAPLAN TURBINE	
		5. FRANCIS TURBINE	
		6. RECIPROCATING PUMP	
		7. CENTRIFUGAL PUMP	
11	PNEUMATICS LAB	1. DIRECT CONTROL OF SINGLE ACTING AND DOUBLE ACTING CYLINDER	NOT AVAILABLE
		2. SPEED CONTROL OF SINGLE ACTING AND DOUBLE ACTING CYLINDER	
		3. CONTROL OF DOUBLE ACTING CYLINDER WITH "OR" LOGIC	
		4. CONTROL OF DOUBLE ACTING CYLINDER WITH "AND" LOGIC	