التجارب الافتراضية

في ضوء الاجراءات الاحترازية التي تتخذها الجامعة لمواجهة تداعيات فيروس Covid-19 وتفعيل دور التعليم الهجين لتعليم الطلاب وتوجيه سيادتكم بتفعيل دور المعامل الافتراضيه ، تم حصر كل احتياجات الأقسام والبرامج من التجارب افتراضية سواء ما هو متاح مجانا أو يحتاج الى رخص شراء وفيما يلى حصر بهذه التجارب

أولا: التجارب ذات رخص الشراء

1- الفصل الدراسى الأول 2020-2021

➢ برنامج الهندسة الطبية

بناء علي طلب برنامج الهندسة الطبية بتوفيرعدد من التجارب الافتراضية لمقرر تدريب 1 في الهندسة الطبية ، تم التعاقد علي شراء رخص تجارب لعدد 150 طالب لحوالي 140 تجربة من شركة (Labster) وذلك في الفتره من 17 أكتوبر2020 حتي 17 ابريل 2021 وذلك بتكلفة حوالى 10 الاف دولار.

2- الفصل الدراسى الثانى 2020-2021

➢ قسم الرياضيات والفيزياء الهندسية

بناء علي طلب قسم الرياضيات والفيزياء الهندسية بتوفيرعدد من التجارب الافتراضية لمقرر الفيزياء وهى:

- **Magnetic Field of a Circular Loop Current**
- **Optics Lab**
- **Measurement of ohmic resistances using Ammeter and Voltmeter**
- **Kirchhoff's loop rule**

تم التعاقد مع شركة (Praxilab) على توفير رخص استخدام لعدد 3000 طالب لطلاب الفرقة الاعدادية وطلاب مستوى 000 بالبرامج لاستخدام هذه التجارب بتكلفة حوالى 164000 جنيه موزعة على أقسام وبرامج الكلية كالآتى:

م	البرنامج	المقرر	الكود	عدد الرخص
1	اعدادى عام	فيزياء 2	BAS 1022	4250
2	هندسة الميكاترونكس MTE		BAS032	200
			PHYS012	33
3	الهندسة الطبية BME		BAS032	98
			MTH012	17
4	هندسة الاتصالات والحاسبات CCE		PHYS013	12
			BAS032	96
5	هندسة البناء والتشييد BCE		BAS032	49
6	هندسة الطاقة الجديدة والمستدامة RSE		BAS032	6
			اجمالى	3015

ثانيا: التجارب المجانية (open sources)

المقرر	Experiment	Link	قسم الرياضيات والفيزياء الهندسية
الكيمياء	Acid Base Titration	http://vlab.amrita.edu/?sub=2&brch=193&sim=352&cnt=1	
	alorimetry -Heat of Neutralization	http://vlab.amrita.edu/?sub=2&brch=190&sim=1546&cnt=1	
	alorimetry -Water equivalent Calorimetry	http://vlab.amrita.edu/?sub=2&brch=190&sim=1352&cnt=1	
	Detection of Functional Groups	http://vlab.amrita.edu/?sub=2&brch=191&sim=345&cnt=1	
	Detection of	http://vlab.amrita.edu/?sub=2&brch=191&sim=344&cnt=1	

	Elements: Lassaigne's Test		
	Separation of Compounds Using Column Chromatography	**http://vlab.amrita.edu/?sub=2&brch=191&sim=341&cnt=1**	
	Estimation of Aspirin	**http://vlab.amrita.edu/?sub=2&brch=191&sim=849&cnt=1**	
	Estimation Of Glucose	**http://vlab.amrita.edu/?sub=2&brch=191&sim=692&cnt=1**	
	Purification by Fractional distillation/ crystallisation	**http://vlab.amrita.edu/?sub=2&brch=191&sim=340&cnt=1**	
	Purification by Steam distillation/ crystallisation	**http://vlab.amrita.edu/?sub=2&brch=191&sim=1547&cnt=1**	
	Organic Preparations - Allylation of Isatin	**http://vlab.amrita.edu/?sub=2&brch=191&sim=607&cnt=1**	

قسم الرياضيات والفيزياء الهندسية	Experiment	Link
	Michelson's Interferometer	http://vlab.amrita.edu/?sub=1&brch=189&sim=1106&cnt=1
	Newton's Rings	http://vlab.amrita.edu/?sub=1&brch=189&sim=1520&cnt=1
	Refractive Index of the material of a prism	http://vlab.amrita.edu/?sub=1&brch=281&sim=1513&cnt=1
	Brewsters Angle determination	http://vlab.amrita.edu/?sub=1&brch=189&sim=333&cnt=1
	Hooke's Law	https://phet.colorado.edu/en/simulation/hookes-law
	Wave Interference double slit	https://phet.colorado.edu/en/simulation/wave-interference
	Wave on a String	https://phet.colorado.edu/en/simulation/wave-on-a-string
	Static Electricity	https://phet.colorado.edu/en/simulation/balloons-and-static-electricity
	Ohm's Law	https://phet.colorado.edu/en/simulation/ohms-law

	Capacitor : Basics	https://phet.colorado.edu/en/simulation/capacitor-lab-basics
	Masses and Springs: Basics	https://phet.colorado.edu/en/simulation/masses-and-springs-basics
	Pendulum Lab	https://phet.colorado.edu/en/simulation/pendulum-lab
	Coulomb's Law	https://phet.colorado.edu/en/simulation/coulombs-law
	Coefficient of Viscosity, Using Stokes's Method	www.praxilabs.com Free simulation only
	Speed of Sound Using Closed Columns	
	Speed of Sound Using Open Columns	
	Boyle's Law of Gases	

	lab	Link
قسم هندسة الاتصالات	Analog communications	https://www.etti.unibw.de/labalive/#experiments
	Digital communications	https://www.etti.unibw.de/labalive/#experiments
	Computer Networks Lab	http://vlabs.iitb.ac.in/vlabs-dev/labs_local/computer-networks/labs/explist.php
	Computer Systems Organization lab	https://cse11-iiith.vlabs.ac.in/
	Mobile Communications lab	http://vlabs.iitkgp.ernet.in/fcmc/
	Advanced Network Technologies lab	http://vlabs.iitkgp.ernet.in/ant/
	Analog Signals Network and Measurement	http://vlabs.iitkgp.ernet.in/asnm/
	Digital Logic Design lab	http://cse15-iiith.vlabs.ac.in/

	Queuing Networks Modelling lab	http://qnm-iitd.vlabs.ac.in/
	Hybrid Electronics lab	http://he-coep.vlabs.ac.in/
	RF microwave characterization lab	http://www.iitk.ac.in/mimt_lab/vlab/index.php
	Transducer and Instrumentation lab	http://202.3.77.143/virtuallab/
	Electronic design using DSP, FPGA, CPLD and Micro controllers labs	http://59.181.142.81/
	Digital Electronic Circuits lab	http://vlabs.iitkgp.ernet.in/dec/
	Digital Signal Processing lab	http://vlabs.iitkgp.ernet.in/dsp/
	Digital VLSI Design lab	http://vlsi-iitg.vlabs.ac.in/
	Signals and Systems Laboratory lab	http://ssl-iitg.vlabs.ac.in/
	Virtual Electric Circuits lab	http://vlab.amrita.edu/?sub=1&brch=75

	Single Board Heater System lab	http://vlabs.iitb.ac.in/sbhs/
	Disciplines and Domains labs	http://vlabs.iitb.ac.in/vlab/labsps.html
	Logic Design and Computer Organization Virtual Lab	http://vlabs.iitkgp.ernet.in/coa/
	Artificial Neural Networks	http://cse22-iiith.vlabs.ac.in/
	Very Large Scale Integration Lab	http://cse14-iiith.vlabs.ac.in/
	Computer Systems Organization lab	https://cse11iiith.vlabs.ac.in/List%20of%20experiments.html?domain=Computer%20Science

	Experiment	Link
قسم الهندسة الكهربية	familiarization with laboratory equipment	http://www.vlab.co.in/broad-area-electrical-engineering http://vlabs.iitb.ac.in/vlabs-dev/vlab_bootcamp/bootcamp/Sadhya/experimentlist.html
	To study the load characterstics of DC shunt generator	
	To study the speed control of DC motor by field resistance control	
	To study the speed control of D.C. shunt motor by armature control method	
	To perform speed control of DC motor by using Ward-Leonard Method	
	To obtain the equivalent circuit parameters from OC and SC tests, and to estimate efficiency & regulation at various loads	
	To study the magnetisation characteristics of DC shunt generator	
	induction motor control using rotor resistance	http://vlabs.iitb.ac.in/vlabs-dev/vlab_bootcamp/

	Load Test On Separately Excited DC Motor	
	Speed Control of Separately Excited DC Motor	
	No Load Test on Three Phase Induction Motor	
	Blocked Rotor Test on Three Phase Induction Motor	
	Open Circuit Test on Three Phase Alternator	
	Short Circuit Test on Three Phase Alternator	
	Load Test on Three Phase Alternator	
	star delta starter	http://vem-iitg.vlabs.ac.in/
	locked rotor test	
	no load test	
	dc test for stator resistance	
	rotating magnetic field behavior in three coils	
	magnetic field behavior in single coil	
	auto transformer starter	
	Study Of Impulse Voltage Generator	http://vlabs.iitkgp.ernet.in/vhv/ http://vlabs.iitkgp.ac.in/vhvlab/index.jsp
	Parametric Analysis Of Impulse Voltage Waveform	
	Study Of Impulse Current Generator	
	Parametric Analysis Of Impulse Current Waveform	
	Critical Flashover of a Sphere Gap using IVG	
	Study of Rectangular Pulse Current Generator	
	Functioning of Voltage Doubler	
	3-Stage Cockroft Walton Voltage Multiplier	
	Study hardware and software used in PLC	http://plc-coep.vlabs.ac.in/List%20of%20experiments.html?domain=Electrical%20Engineering
	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 Arithmatic Instructions	
	Substation Automation (Theory)	http://sa-nitk.vlabs.ac.in/
	Distributed Control System (DCS)	

	Study hardware and software platforms for DCS	http://ial-coep.vlabs.ac.in/List%20of%20experiments.html?domain=Electrical%20Engineering
	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	
	study the Synchronization of alternator with infinite bus bar.	http://vp-dei.vlabs.ac.in/Dreamweaver/list.html
	To determine the direct axis reactance (Xd) and quadrature axis reactance (Xq) of synchronous machine.	
	To determine positive sequence, negative sequence and zero sequence reactances of an alternator.	
	To measure the dielectric Strength of transformer oil.	
	To Study the effect of different shape of electrodes on dielectric (air) breakdown.	
	To Study the gas actuated Buchholz relay for oil filled transformer.	
	To Study the over-current relay and the effect of PSM and TSM.	
	To determine the sub-transient (xd″), transient (xd′) and steady state reactance (xd) of a synchronous machine.	
	To Study the Ferranti Effect of a transmission line/cable.	
	Circuits simulator	https://demonstrations.wolfram.com/topic.html?topic=Circuit+Design&limit=20

Link	Experiment	Sr.

http://209.211.220.205/vlabiitece/labs.php	**Control System Lab** First Order System (1) Transfer Function of a Feedback System (2) Root Locus (3) Nyquist Plot (4) Bode Plot (5) Construction of a Given Plant (6) PID Controller (7)	
https://www.irt.rwth-aachen.de/cms/IRT/Studium/Downloads/~jtfd/Virtual-Control-Lab/?lidx=1	**Virtual Control Lab** Damped Single-Mass Oscillator (1) Frequency Response of the Damped Single-Mass Oscillator (2) Damped Single-Mass Oscillator with Linear Actuator for Position Control (3) Controller Setting using the Bode Diagram (4) Inverse Pendulum (5) Bode Diagram versus Nyquist Plot (6) Convolution Integral (7)	
http://ctms.engin.umich.edu/CTMS/index.php?example=Introduction&section=SystemModeling	**Control Tutorials** System Modeling (1) Cruise Control (2) DC Motor Speed (3) DC Motor Position (4) Suspension (5) Inverted Pendulum (6) Aircraft Pitch (7) Ball & Beam (8)	
http://ied-nitk.vlabs.ac.in/	**Industrial Electric Drives and Application of PLC** PLC On-Delay Timer Instruction (1) PLC Off-Delay Timer Instruction (2) PLC Retentive Timer on Instruction (3) PLC COUNT-UP INSTRUCTION (4) PLC COUNT-DOWN INSTRUCTION (5) Garage Shutter Opening and Closing Using PLC (6) Container Filling Process Using PLC (7) Simultaneous output interlock using PLC (8) Maximum Simultaneous Operations Limiter using PLC (9) Motor forward and reverse direction control using PLC (10)	

http://vlabs.iitb.ac.in/vlabs-dev/labs/machine_learning/labs/index.php	**Machine Learning Lab** (1) Implementation of AND/OR/NOT Gate using Single Layer Perceptron (2) Implementation of XOR Gate Using Multi-Layer Perceptron/ Error Back Propagation (3) Implementation of XOR Gate Using Radial Basis Function Network (4) Understanding the concepts of Perceptron Learning Rule (5) Understanding the concepts of Hebbiann Learning Rule (6) Understanding the concepts of Correlation Learning Rule (7) Understanding the working of Kohonen's Self Organising Maps (8) Understanding the functioning of Fuzzification process (9) Implementation of different method os Defuzzification process (10) Case study explaining function of Fuzzy Inference System (11) Case study explaining function of Optical Character Recognition	
http://cse22-iiith.vlabs.ac.in/Experiments.html?domain=Computer%20Science	**Artificial Neural Networks** (1) Parallel and distributed processing - I: Interactive activation and competition models (2) Parallel and distributed processing - II: Constraint satisfaction neural network models (3) Perceptron learning (4) Multilayer feedforward neural networks (5) Hopfield model for pattern storage task (6) Hopfield model with stochastic update (7) Competitive learning neural networks for pattern clustering (8) Solution to travelling salesman problem using self organizing maps (9) Solution to optimization problems using Hopfield models (10) Weighted matching problem: Deterministic, stochastic and mean-field annealing of an Hopfield model	

https://ds1-iiith.vlabs.ac.in/data-structures-1/List%20of%20experiments.html	**Data Structures** Sorting (1) Bubble Sort .i Merge Sort .ii Heap Sort .iii Quick Sort .iv Graphs (2) Depth First Search .i Breadth First Search .ii Trees (3) Tree Traversal .i Binary Search Trees .ii Stacks and Queues (4) Stacks and Queues .i Infix to Postfix .ii Searching (5) Unsorted Arrays .i Hashtables .ii Linked Lists (6) Linked lists .i Polynomial Arithmetic using linked lists .i	
vlabs.iitkgp.ernet.in/coa/	**Logic Design and Computer Organization Virtual Lab** Ripple Carry Adder (1) Carry-Look-Ahead Adder (2) Wallace Tree Adder (3) Synthesis of Flip Flops (4) Registers and Counters (5) Combinational Multipliers (6) Booth's Multiplier (7) Arithmetic Logic Unit (8) Memory Design (9) Associative cache Design (10) Direct Mapped cache Design (11) CPU Design (12) Karnaugh Map (13) Quine - Mc Clusky Algorithm (14)	
https://www.android.com/	Android Software	
https://code.visualstudio.com/	Visual Studio Code Software	
https://netbeans.org/	NetBeans Software	
https://www.python.org/	Python Software	
http://www.codeblocks.org/	Code Blocks Software	
https://ladderlogicworld.com/ladder-logic-simulator/	Ladder Logic Simulator Software	
https://www.apachefriends.org/index.html	XAMPP Software	

https://www.arduino.cc/	Arduino Software
https://www.android.com/	Android Software
http://www.jcreator.org/download.htm	JCreator Software
https://code.visualstudio.com/	Visual Studio Code Software
https://netbeans.org/	NetBeans Software
https://www.python.org/	Python Software
http://www.codeblocks.org/	Code Blocks Software
https://ladderlogicworld.com/ladder-logic-simulator/	Ladder Logic Simulator Software
https://www.apachefriends.org/index.html	XAMPP Software

	Experiment	Link
قسم هندسة الأشغال العامة	Determination of TS,TDS and TSS in water	http://ee1-nitk.vlabs.ac.in/environmental-engineering-1/exp/ http://ee2-nitk.vlabs.ac.in/environmental-engineering-2/exp/
	Determination of Alkalinity in water	
	Determination of Hardness in water	
	Determination of Chloride in water	
	Determination of Total Iron in water	
	Determination of pH	
	Determination of Biological Oxygen Demand	
	Determination of Chemical Oxygen Demand	
	Alum Coagulation	
	Determination of Sulphate in water	
	Determination of Flouride in water	
	Determination of Dissolved Oxygen in water	
	Determination of Turbidity in water	
	Crushing Value of Aggregate	http://ts-nitk.vlabs.ac.in/transportation-engineering/List%20of%20experiments.html
	Impact Test on Aggregate	
	Los Angeles Abrasion Test on Aggregate	
	Ductility Test on Bitumen	
	Softening Point Test on Bitumen	
	Penetration Test on Bitumen	
	Specific Gravity Test on Bitumen	
	California Bearing Ratio Test on Soil	

قسم هندسة الري والهيدروليكا	Experiment	Link
	1-Fluid Mechanics labs:	
	Bernoulli's Experiment Venturi Meter Experiment Orifices Experiment Mouthpieces Experiment Weirs Experiment Channels Experiment Reynold's Experiment Jets Experiment	https://eerc03-iiith.vlabs.ac.in/exp1/Introduction.html?domain=Civil%20%20%20%20%20%20%20%20%20Engineering&lab=Hydraulics%20and%20Fluid%20%20%20%20%20%20%20%20%20%20%20%20Mechanics%20Lab
	Calibration of V-Notch	http://fm-nitk.vlabs.ac.in/exp1/index.html
	Calibration of Rectangular Notch	http://fm-nitk.vlabs.ac.in/exp2/index.html
	Friction in Pipes	http://fm-nitk.vlabs.ac.in/exp4/index.html
	2-Hydraulic Machinary labs:	
	Performance Characteristics of Centrifugal Pump	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/centrifugal-pump/
	Performance Characteristics of Kaplan Turbine	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/kaplan-turbine/
	Performance Characteristics of Pelton Turbine	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/pelton-turbine/
	Performance Characteristics of Francis Turbine	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/francis-turbine/
	3-Marine Engineering labs:	
	Wave Attenuation in Pile Based Breakwater	http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/Marine_Structures_Lab/experiments/wave-attenuation-in-pile-based-breakwater-nitk/
	Wave Attenuation in Vegetation Based Breakwater	http://vlabs.iitb.ac.in/vlabs-dev/labs/nitk_labs/Marine_Structures_Lab/experiments/wave-attenuation-in-vegetation-based-breakwater-nitk/
	4-Virtual Hdrology labs:	
	Water Balance	http://www.hydrovlab.utpl.edu.ec/en/SIMULATION/tabid/116/language/en-US/Default.aspx
	Evapotranspiration	http://www.hydrovlab.utpl.edu.ec/SIMULATION/EVAPOTRANSPIRATION/tabid/122/language/en-US/Default.aspx

	Sediment transport	http://www.hydrovlab.utpl.edu.ec/SIMULATION/pSedimentTransport/tabid/125/language/en-US/Default.aspx
	Hydraulics of wells	http://www.hydrovlab.utpl.edu.ec/SIMULATION/Hydraulicsofwells/tabid/135/language/en-US/Default.aspx
	Infiltration	http://www.hydrovlab.utpl.edu.ec/en/SIMULATION/Infiltration/tabid/140/language/en-US/Default.aspx
	Rainfall - Runoff	http://www.hydrovlab.utpl.edu.ec/SIMULATION/RainfallRunoff/tabid/138/language/en-US/Default.aspx
	Stochastic Analysis	http://www.hydrovlab.utpl.edu.ec/SIMULATION/pStochasticAnalysis/tabid/142/language/en-US/Default.aspx

قسم هندسة الإنتاج والتصميم الميكانيكي	Course	Experiment	Link
	Measurements	Callipers	https://flashyscience.com/experiments/open/callipers
	Measurements	Micrometer	https://flashyscience.com/experiments/open/micrometer
	Measurements	Protractors	https://www.stefanelli.eng.br/en/virtual-goniometer-five-minutes-degree/
	Measurements	Sine bar calculator	https://littlemachineshop.com/mobile/sine_bar.php
	Fine Measurements	gear tooth thickness measurement by Gear Tooth Vernier Caliper	https://www.youtube.com/watch?v=eUD_heqzmZY https://www.youtube.com/watch?v=eaoP1fdUVyY
	Fine Measurements	Double flank gear rolling test	https://www.youtube.com/watch?v=VNAjwWQccJw https://www.ques10.com/p/23138/explain-construction-working-advantages-and-disa-3/

			https://www.youtube.com/watch?v=T4VAJhBZ3ds
	Fine Measurements	Constant chord method	http://what-when-how.com/metrology/measurement-of-individual-elements-metrology/
	Design and Production Engineering Laboratory	Destructive Experimental Tests	http://sm-nitk.vlabs.ac.in/index.html#
	Strength of Materials	Direct Shear Test on Mild Steel Rod	http://sm-nitk.vlabs.ac.in/exp7/index.html
	Strength of Materials	Direct Shear Test on Mild Steel Plate	http://sm-nitk.vlabs.ac.in/exp9/index.html
	Strength of Materials	Bending Test on Mild Steel	http://sm-nitk.vlabs.ac.in/exp11/index.html
	Strength of Materials	Tensile Test on Mild Steel	http://sm-nitk.vlabs.ac.in/exp13/index.html
	Strength of Materials	Tensile Test on Cast Iron	http://sm-nitk.vlabs.ac.in/exp14/index.html
	Strength of Materials	Compression Test on Mild Steel	http://sm-nitk.vlabs.ac.in/exp15/index.html
	Strength of Materials	Compression Test on Cast Iron	http://sm-nitk.vlabs.ac.in/exp16/index.html
	Strength of Materials	Torsion Test on Mild Steel	http://sm-nitk.vlabs.ac.in/exp19/index.html

	Lab	Link

	Energy losses in pipe flow	http://mfts-iitg.vlabs.ac.in/PipeFlow.html
	Flow through Venturi meter	http://mfts-iitg.vlabs.ac.in/VenturiMeter.html
	Incompressible flow through a Nozzle and a Diffuser	http://mfts-iitg.vlabs.ac.in/Nozzle.html
	multiphase flow	http://vlabs.iitkgp.ernet.in/mf/
	Bernoulli's Experiment	http://eerc03-iiith.vlabs.ac.in/exp1/Introduction.html?domain=Civil%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Engineering&lab=Hydraulics%20and%20Fluid%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Mechanics%20Lab
	Venturi Meter	http://eerc03-iiith.vlabs.ac.in/exp5/Introduction.html?domain=Civil%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Engineering&lab=Hydraulics%20and%20Fluid%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Mechanics%20Lab
	Orifices	http://eerc03-iiith.vlabs.ac.in/exp6/Introduction.html?domain=Civil%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Engineering&lab=Hydraulics%20and%20Fluid%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Mechanics%20Lab
	Weirs	http://eerc03-iiith.vlabs.ac.in/exp8/Introduction.html?domain=Civil%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Engineering&lab=Hydraulics%20and%20Fluid%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Mechanics%20Lab
	Channels	http://eerc03-iiith.vlabs.ac.in/exp9/Introduction.html?domain=Civil%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Engineering&lab=Hydraulics%20and%20Fluid%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Mechanics%20Lab
	Reynolds Experiment	http://eerc03-iiith.vlabs.ac.in/exp10/Introduction.html?domain=Civil%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20%20Engineering&lab=H

		ydraulics%20and%20Fluid%20%20%20%20%20%20%20%20%20%20%20%20%20%20Mechanics%20Lab
	Manometers	http://www.kentchemistry.com/moviesfiles/Units/GasLaws/manometerflash.htm
	ball in a viscous fluid	https://faraday.physics.utoronto.ca/GeneralInterest/Harrison/Flash/FluidDynamics/ViscousMotion/ViscousMotion.html
	Falling Ball	https://faraday.physics.utoronto.ca/GeneralInterest/Harrison/Flash/FluidDynamics/BallCNTower/BallCNTower.html
	Conduction analysis of Single Material Slab	http://mfts-iitg.vlabs.ac.in/SingleSlab.html
	Conduction Analysis of a Single Material Cylinder	http://mfts-iitg.vlabs.ac.in/SingleCylinder.html
	Conduction Analysis of a Double Material Cylinder	http://mfts-iitg.vlabs.ac.in/DoubleCylinder.html
	To determine the overall heat transfer coefficient (U) in the parallel flow heat exchanger	http://mfts-iitg.vlabs.ac.in/Heat.html
	To determine the overall heat transfer coefficient (U) in the counter flow heat exchanger.	http://mfts-iitg.vlabs.ac.in/HeatCounter.html
	Radiation Heat transfer	http://vlab.amrita.edu/?sub=1&brch=194&sim=802&cnt=1
	Porous media II	http://vmt-iitg.vlabs.ac.in/Flow_through_porous_media(theory).html
	Porous media I	http://vmt-iitg.vlabs.ac.in/Flow_through_porous_media_I(theory).html
	Rotary dryer	http://vmt-iitg.vlabs.ac.in/Rotary_dryer(theory).html
	Gases Introduction	https://phet.colorado.edu/en/simulation/gases-intro

	Gas Properties	https://phet.colorado.edu/en/simulation/gas-properties
	Phase change	http://htv-au.vlabs.ac.in/heat-thermodynamics/Study_of_Phase_Change/#
	States of matter	https://phet.colorado.edu/en/simulation/states-of-matter-basics
	Nuclear fusion	https://phet.colorado.edu/en/simulation/legacy/nuclear-fission
	Separation and throttling Calorimeter	http://vmt-iitg.vlabs.ac.in/Separating_and_Throttling_Calorimeter(theory).html
	Fluid Mechanics	http://fm-nitk.vlabs.ac.in/
	Centrifugal Pump performance	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/centrifugal-pump/index.html
	Hydraulic Ram	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/hydraulic-ram/
	Kaplan Turbine	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/kaplan-turbine/
	Reciprocating Pump	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/reciprocating-pump/
	Pelton Turbine	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/pelton-turbine/
	Pipe Bursting	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/pipe-bursting/
	Francis Turbine	http://fmc-nitk.vlabs.ac.in/fluid-machinery-lab/exp/francis-turbine/
	Water cooling tower	http://vmt-iitg.vlabs.ac.in/Water_cooling_tower(theory).html
	ANSYS FLUENT Tutorial	https://confluence.cornell.edu/display/SIMULATION/FLUENT%20Learning%20Modules
	OpenFoam Tutorial	https://wiki.openfoam.com/Tutorials

برنامج	Experiment	Link
	Mobile and Biped	https://cyberbotics.com/doc/guide/turtlebot3-burger

	Robots (PDE-402)	https://cyberbotics.com/doc/guide/robotis-op3 https://cyberbotics.com/doc/guide/mantis https://cyberbotics.com/doc/guide/salamander https://cyberbotics.com/doc/guide/aibo-ers7 https://cyberbotics.com/doc/guide/atlas https://cyberbotics.com/doc/guide/bioloid https://cyberbotics.com/doc/guide/hemisson https://cyberbotics.com/doc/guide/shrimp https://cyberbotics.com/doc/guide/youbot
	digital design 1 Level 200	https://sourceforge.net/projects/circuit/

برنامج الهندسة الطبية	Experiment	Link
	Microbiology and Immunology course (BME392)	https://vlab.amrita.edu/?sub=3&brch=73&sim=212&cnt=1 https://vlab.amrita.edu/?sub=3&brch=73&sim=208&cnt=1 https://vlab.amrita.edu/?sub=3&brch=73&sim=1105&cnt=1
	Medical and Pharmaceutical procedures course (MPE492)	https://vlab.amrita.edu/?sub=3&brch=73&sim=1628&cnt=1 https://vlab.amrita.edu/?sub=3&brch=69&sim=196&cnt=1 https://vlab.amrita.edu/?sub=3&brch=69&sim=192&cnt=1