

Virtual Lab Workshop

Under TEQIP-III Program

18th – 22nd April, 2018



Organized by

**Department of Electrical Engineering
National Institute of Technology Meghalaya
Shillong-793003, India**

**In collaboration
with**



**Department of Electrical Engineering
IIT Roorkee, Virtual Lab**

**Typhoon Hardware-in-the-Loop
(HIL)**

Venue

**National Institute of Technology Meghalaya,
Bijini Complex, Laitumkhrah, Shillong, Meghalaya –793003, INDIA**

Objectives:

Virtual lab invites all the B. Tech, M. Tech and Research scholars across the country to perform experiments on the virtual workbench provided by Virtual Machine Lab. This workbench is a grand venture of Indian Government to ensure that students of each and every technical institute of India get an easy and effective access to the costly laboratory instruments through virtualization of the lab equipments in IITs. The Virtual Lab aims to achieve following domains:

- Identify suitable topics where Virtual Labs will provide maximum benefit to a large number of students
- Design comprise of user-friendly graphical front-end, working in synchronization with a backend, possibly consisting of a simulation-engine running on a server or actual measurement data or a remotely-triggered experiment
- Development and realization of Virtual Reality Laboratories and supporting facilities for e-learning
- Effective utilization of intellectual resources
- Platform for sharing of ideas and techniques and pooling of knowledge resources.
- Any-time availability of desired knowledge at appropriate levels of comprehension to all
- Systematically building a huge database of the capabilities of every individual human resource

Therefore, aim of this workshop is to utilize and enhance the advanced facilities available through internet network for our research purposes.

The course will offer a platform to the practicing engineers, academicians and research students working in the relevant areas to come closer through theoretical and practical sessions. Contents of this workshop extended to almost all branches of Science and Engineering subjects including Physical Sciences, Chemical Sciences, Mathematical Sciences, Industrial and Aeronautical Engineering, Chemical Engineering, Mining and Material Science, Biomedical and Biotechnology Engineering, Reliability Engineering, Energy Studies and Social Sciences.

Program Contents:

First Part: Experts will demonstrate “Typhoon Hardware-in-the-Loop (HIL)” real time simulator and “Virtual HIL Device” software that will be very helpful to real time applications for students research purposes.

Second Part: A total of 205 labs are available all over the India and out of which 4 labs (virtual Machine workbench) are maintained by the P.G. Machine Lab of Department of Electrical Engineering at IIT Roorkee namely:

- Electrical Machines (IITR) Lab
- Surveying Lab
- Biomedical Instrumentation Lab
- Medical Signal & Image Processing Lab

Virtual Labs related to other branches Civil, Mechanical, EC, CE and other Science subjects will also be covered in the workshop. The expert will explain the implementing software setup and elaborate hand on experiments through virtual lab system.

Experts from other organization:

1. Mr. Jasbir Singh, Mr. Chetan Dhiman, and Mr. Abhilash Sundriyal from EE Department, IIT Roorkee, Virtual Lab system
2. Mr. Sudipto Poddar, and Mr. Shashank Kumar from Virtual HIL Device laboratory

Program Schedule:

	Morning Session	Lunch Break	Afternoon Session
Day 1 (18/04/2018) Wednesday	10.00 AM-12.00 AM Inauguration Program	12 - 2 PM (at workshop venue)	2.00 PM-5.00 PM (Teak Break at 3.30 AM) Typhoon Hardware-in-the-Loop (HIL) Real Time Simulator and “Virtual HIL Device” Software
Day 2 (19/04/2018) Thursday	10.00 AM-1.00 PM (Teak Break at 11.30 AM) Typhoon Hardware-in-the-Loop (HIL) Real Time Simulator and “Virtual HIL Device” Software (Teak Break at 11.30 AM)	12 - 2 PM	2.00 PM-5.00 PM (Teak Break at 3.30 AM) Typhoon Hardware-in-the-Loop (HIL) Real Time Simulator and “Virtual HIL Device” Software
Day 3 (20/04/2018) Friday	10.00 AM-1.00 PM (Teak Break at 11.30 AM) EE/EC/CS (Virtual Lab system)	12 - 2 PM	2.00 PM-5.00 PM (Teak Break at 3.30 AM) EE/EC/CS (Virtual Lab system)
Day 4 (21/04/2018) Saturday	10.00 AM-1.00 AM (Teak Break at 11.30 AM) Civil/Mechanical (Virtual Lab system)	12 - 2 PM	2.00 PM-5.00 PM (Teak Break at 3.30 AM) Civil/Mechanical (Virtual Lab system)
Day 5 (22/04/2018) Sunday	10.00 AM-1.00 AM (Teak Break at 11.30 AM) All branches (Virtual Lab system)	12 - 2 PM	2.00 PM Program closing and certificate distribution

Note: B. Tech, M. Tech, M. Sc, Ph.D scholars and Faculties from all branches can participate for advanced research purposes.

Patron:

Prof. B. B. Biswal, Director, NIT Meghalaya

Chief Advisor:

Prof. Ayon Bhattacharjee, Department of Physics, NIT Meghalaya
Dean (Research and Consultancy) & TEQIP-III Program Coordinator

Chairman:

Dr. Atanu Banerjee, Assoc. Professor & HOD, EE. Department, NIT Meghalaya

Coordinators:

Dr. Ksh Milan Singh, Asst. Professor, EE. Department, NIT Meghalaya
Dr. Piyus Pratap Singh, Asst. Professor, EE. Department, NIT Meghalaya

Organizing committee:

Dr. Supriyo Das, Asst. Professor, EE. Department, NIT Meghalaya
Dr. Rakesh Roy, Asst. Professor, EE. Department, NIT Meghalaya

National Institute of Technology Meghalaya

Virtual Lab Workshop



18th – 22nd April, 2018

Registration Form

Registration Fee: Rs 200/- (Student) and Rs 500/- (Faculty)

Full Name of the Participant:

Category: Academic / Industry / Ph.D & PG Scholars / UG Student [*Please tick*]

Full Address of Institute:

.....

..... PIN..... Sex (M/F).....

Mobile: E-mail:

Demand Draft No: dated..... Amount in INR

..... drawn on bank

towards course fee drawn in favour "**ORPROG EE NITM**" payable at "Shillong" is enclosed.

Bank account details:

A/C no.: 916010025121983

(Cash payment for registration can be done at room no. 116 Academic Block, EE Department NIT Meghalaya)

Date & Place:

Signature of the Participant

Note: Filled registration form along with DD should be sent to:

Coordinator, Virtual Lab Workshop 2018, Department of Electrical Engineering, NIT Meghalaya, Bijni Complex, Laitumkhrah, Shillong – 793003, India.

Phone: 9402102390, 8787628039

Email: milan.singh@nitm.ac.in or piyushpratap.singh@nitm.ac.in