

A Brief Report On

DST Funded 7-Day Training Program on

“LabVIEW REAL-TIME APPLICATIONS” - January 2023.

Date: 18th – 24th January 2023

Venue: MAHARAJ VIJAYARAM GAJAPATI RAJ (MVGR) College of Engineering (A), Vizianagaram–535005.

The inauguration of DST Funded 7-Day Training Program on “LabVIEW REAL-TIME APPLICATIONS” from 18th to 24th January 2023, organised at MAHARAJ VIJAYARAM GAJAPATI RAJ (MVGR) College of Engineering (A), Vizianagaram–535005 in collaboration with GITAM INSTITUTE OF TECHNOLOGY, GITAM Deemed to be university, Visakhapatnam, Andhra Pradesh- 530045, under STUTI Program-2021 (DST/RND/STUTI/2021/18) took place on 18th January.

INAUGURATION

Chief guest Dr. K. Chandra Bhushana Rao, Professor and Dean, Academic and Planning JNTUGV, Dr. K.V.L. Raju, Principal & Correspondent MVGR, MANSAS, Conveners Dr. M. Sunil Prakash, Prof & HOD, ECE MVGR and Dr. Sarat Kumar Sahu, Prof & HOD, EEE MVGR. Prof. Balla Srinivasa Prasad, STUTI program coordinator, GITAM, Visakhapatnam: Inaugurated the event by addressing the participants and the importance of collaborating with other organisations. Dr. K. Chandra Bhushana Rao discussed about the importance of training program to establish and share the collaboration of organisations with technical and practical education. He briefly explained the research opportunities, educational importance and congratulated the organisers for their initiative Dr. K.V.L. Raju, Principal & Correspondent MVGR, MANSAS spoke about the approach of the STUTI program and importance of conducting the workshops and developments in education standards in ECE and EEE. Participants from ECE and EEE branches of engineering from various states and the management and faculty members of MVGR College of Engineering, Vizianagaram graced the event. Then the program was followed by STUTI program coordinator Dr. Balla Srinivasa Prasad, who briefly addressed the STUTI program.



Figure 1: Inaugural of the DST Funded 7-Day Training Program on “LabVIEW REAL-TIME APPLICATIONS” on 18th January 2023.

SCHEDULE

DAY	MORNING SESSION (10.00AM – 12.00 PM)	AFTERNOON SESSION (1.30 PM - 4.00 PM)
WEDNESDAY 18.01.23	Topic: Introduction to graphical Programming	Hands on experience on SFP instruments (DMM, FGEN, SCOPE, DigIn, DigOut,..) Name of the research equipment: NI my DAQ (DST- FIST Funding)
	Resource Person: Prof. K. Chandra bhushana Rao, Dept. Of ECE, JNTUGV.	Resource Person: Dr. B. Srinivas, Asst. prof., ECE, MVGRCE (A).
THURSDAY 19.01.23	Topic: LabVIEW Programming concepts (Loops, Arrays, Structures, Strings and I/O Files)	Hands on experience on Internet of Things Applications Name of the research equipment: NI my DAQ, NI USB – 6211 and myRIO Starter kit sensors (DST- FIST Funding – SR/ST/College – 291/2015(C))
	Resource Person: Dr. S. M. Vali, Prof./ Dr. M. Satyanarayana, Prof., ECE, MVGRCE (A).	Resource Person: Dr. B. Srinivas, Asst. prof., ECE MVGRCE (A)
FRIDAY 20.01.23	Topic: Interfacing of NI myDAQ, with Multisim and LabVIEW	Hands on experience on IOT Antennas/ Microstrip Antenna fabrication. Name of the research equipment: MITS Eleven Antenna Fabrication Machine (DST- FIST Funded – EEQ/2016/000396)
	Resource Person: Dr. B. Srinivas, Asst. prof., ECE MVGRCE (A)	Resource Person: Dr. M. Sunil Prakash, Prof., HOD/ Dr. G. Anjaneyulu, prof., ECE MVGRCE (A)
SATURDAY 21.01.23	Topic: Data Generation, Data acquisition and Creating Standalone Applications	Hands on experience on Sensors design using COMSOL, Software. Name Of Research Equipment: NanoSniff (OmniCant), (DST-SERB funding ECR/2017/001183)
	Resource Person: Dr. B. Rajesh Kumar, Assoc. Professor, Dept. of EECE, GITAM Deemed to be University, Visakhapatnam.	Resource Person: Dr. B. Rajesh Kumar, Assoc. Professor, Dept. of EECE, GITAM Deemed to be University, Visakhapatnam.
SUNDAY 22.01.23	Topic: Machine Learning, Deep Learning and Computer Vision Applications with NI LabVIEW	Hands on Experience on ML, DL, and CV applications Name of the research Equipment: NI myRIO-1990, MECHATRONICS and EMBEDDED KITS (DST FIST Funding – SR/ST/College-29/2015 (C))
	Resource Person: Dr. G. Srinivas, Assoc. Professor, Dept. of CSE, GITAM Deemed to be University, Visakhapatnam.	Resource Person: Dr. G. Srinivas, Assoc. Professor, Dept. of CSE, GITAM Deemed to be University, Visakhapatnam.
MONDAY 23.01.23	Topic: Research Applications / Solar MPPT Control Of DC-DC Converters.	Hands on experience on Solar MPPT Control Of DC-DC converters Name Of Research Equipment: cRIO – 9022 RT Embedded controller and cRIO – 9118, (DST-FIST Funding- SR/ST/College -291/2015 (C))
	Resource Person: Dr. B. Lavanya Asst. Prof, ECE,/ Dr. Sarat Kumar sahu, Prof. and HOD, EEE, MVGRCE (A), VZM	Resource Person: Dr. V. V. Sastry and Team, Director, Centre for E- Mobility, GVPCE, VSKP.
TUESDAY 24.01.23	Topic: BLDC/IM Drive for EV Application and Battery Management system Design	Hands on experience on BLDC/IM Drive for EV and BMS Design. Name Of Research Equipment: cRIO – 9022 RT Embedded controller and cRIO – 9118, (DST-FIST Funding- SR/ST/College -291/2015 (C))
	Resource Person: Mr. K. S. Ravi Kumar, Assoc. Prof., EEE, MVGRCE (A), VZM	Resource Person: Dr. D. Raveendra, Assoc. Prof, Dept. of EEE, GRIET, Hyd.

Lunch Break
(12.00 pm – 1.30 pm)

Schedule for 7 Days Training Program On “LabVIEW REAL-TIME APPLICATIONS” on 18th January 2023.

DAY-1, 18th JANUARY 2023:

TECHNICAL SESSION:

The first-day session focused on “*NEP-2020- Challenges and Implementation Processes in Higher Education*” by **Dr. K. Chandra Bhushana Rao, Professor and Dean, Academic and Planning JNTUGV**. He lectured that educational policy of India and its key points and opportunities to the future of students and participants.

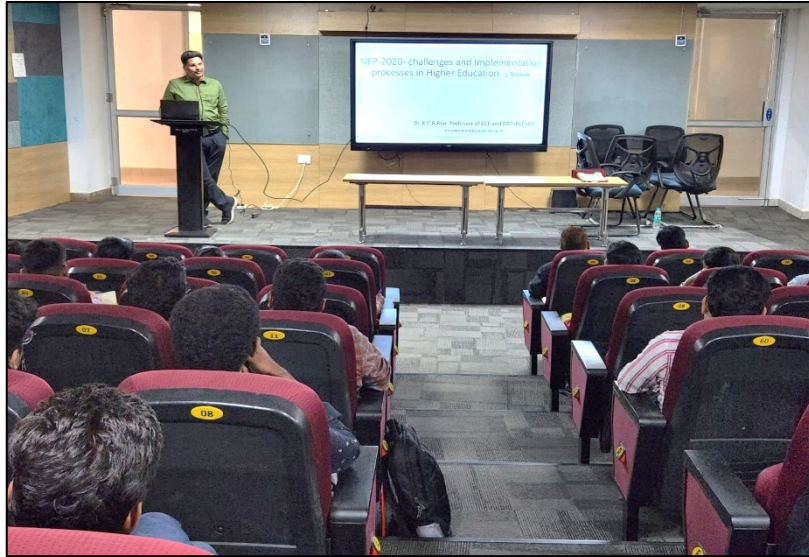


Figure 2: Session by Dr. K. Chandra Bhushana Rao, Professor and Dean, JNTUGV.

HANDS-ON SESSION:

Later in the afternoon, the hands-on session was carried out by **Dr. B. Srinivas, Asst. prof., ECE, MVGRCE (A)** on the “*SFP Instruments*”. The session taught the participants how to handle NI myDAQ equipment.



Figure 3: Training session on NI myDAQ by Dr. B. Srinivas

DAY-2, 19th JANUARY 2023:

TECHNICAL SESSION:

On day 2, the session started with “*LabVIEW Programming concepts (Loops, Arrays, Structures, Strings and I/O Files)*” by **Dr. S. M. Vali, ECE, MVGRCE (A)**, explained the concepts of LabVIEW and its importance. Later the session was taken by **Dr. M. Satyanarayana, Prof., ECE, MVGRCE (A)**, and explained the importance of real time applications of LabVIEW in Antenna Controllers.



Figure 4: Session by Dr. S. M. Vali, ECE, MVGRCE (A)

HANDS-ON SESSION:

In the afternoon session after lunch, by **Dr. B. Srinivas, Asst. prof., ECE MVGRCE (A)**, conducted a hands-on session on **IOT Antennas/ Microstrip Antenna fabrication** using MITS Eleven Antenna Fabrication Machine (DST- FIST Funded – EEQ/2016/000396).

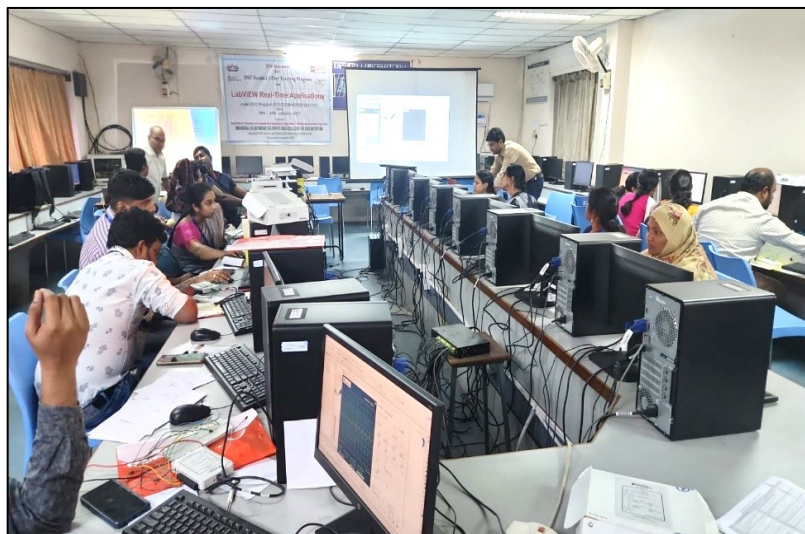


Figure 5: Hands-on session on IOT Antennas/ Microstrip Antenna fabrication

DAY-3, 20th JANUARY 2023:

TECHNICAL SESSION:

On day three, **Dr. B. Srinivas, Asst. prof., ECE MVGRCE (A)**, delivered a session on **“Interfacing of NI myDAQ, with Multisim and LabVIEW”**. He discussed the importance of NI myDAQ, which is a low-cost portable data acquisition (DAQ) device that uses NI LabVIEW-based software instruments.

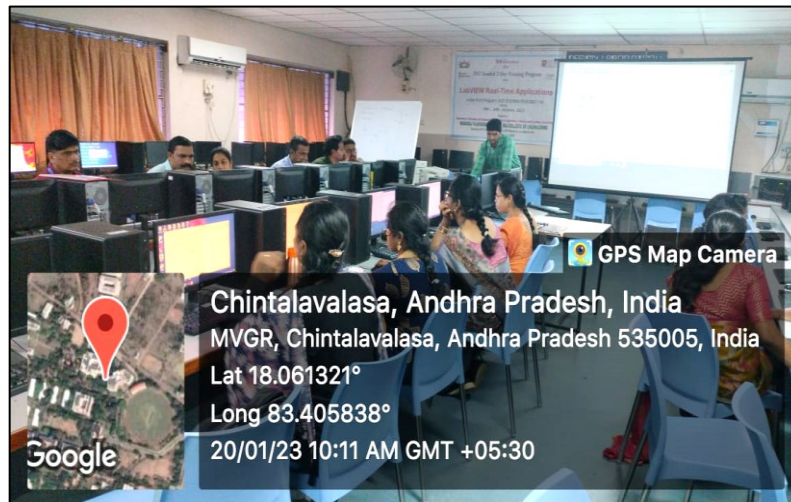


Figure 6: Session delivered by Dr. B. Srinivas, Asst. prof., ECE MVGRCE (A)

HANDS-ON SESSION:

Later in the afternoon, the practical hands-on sessions were conducted on experience on IOT Antennas/ Microstrip Antenna fabrication by **Prof. M. Sunil Prakash, HOD** and **Prof. Dr. G. Anjaneyulu, ECE MVGRCE (A)**. The participants were able to learn and fabricate IOT Antennas/ Microstrip antennas.



Figure 7: Practical session on IOT Antennas/ Microstrip Antenna fabrication.

DAY-4, 21th JANUARY 2023:

TECHNICAL SESSION:

On day four, **Dr. B. Rajesh Kumar, Assoc. Professor, Dept. of EECE, GITAM Deemed to be University, Visakhapatnam**, gave a presentation on ***“Data Generation, Data acquisition and Creating Standalone Applications”***. He explained the importance of how data generation and acquisition work with standard applications.



Figure 8: Session delivered by Dr. B. Rajesh Kumar, Dept. of EECE, GITAM

HANDS-ON SESSION:

In the afternoon session, **Dr. B. Rajesh Kumar, Assoc. Professor, Dept. of EECE, GITAM Deemed to be University, Visakhapatnam**, focused on hands on experience on ***“Sensor’s design using COMSOL, Software”***.



Figure 9: Training session on sensors design using COMSOL, Software

DAY-5, 22nd JANUARY 2023:

TECHNICAL SESSION:

On the Fifth day of class, the session was delivered by a resource person **Dr. S.Neeraja**, Assoc. Professor, Dept. of ECE, GITAM Deemed to be University, Visakhapatnam, on the topic *“Development of Bandwidth Based Handoff Algorithm for 4G/5G Heterogeneous Wireless Networks”*.



Figure 10. Session delivered by Dr. S. Neeraja, Assoc. Professor, Dept. of ECE, GITAM

HANDS-ON SESSION:

Later in the afternoon, **Dr. B. Srinivas**, Asst. prof., ECE MVGRCE (A) demonstrated hands-on Experience with Arduino and its applications. After the training session, the participants were able to understand how to use Arduino board.

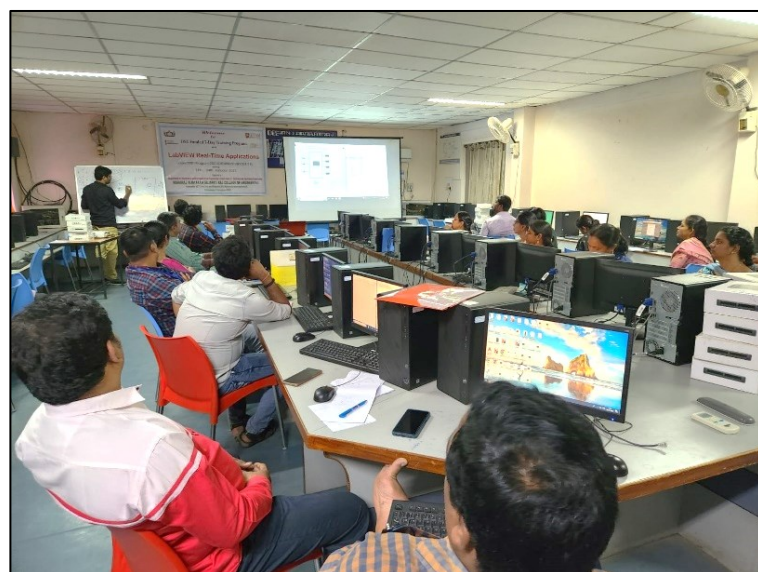


Figure 11: Hands on Experience on Arduino

DAY-6, 23rd JANUARY 2023:

TECHNICAL SESSION:

On day 6, the session was delivered by a resource person **P. Lahari, Assistant Professor, EEE, GVPCE, Visakhapatnam**, on **“LabVIEW FPGA & MYRIO based Control of DC-DC Converters, MPPT Algorithms for PV System”**. The participants were given a technical lecture on the LabVIEW in the morning session.

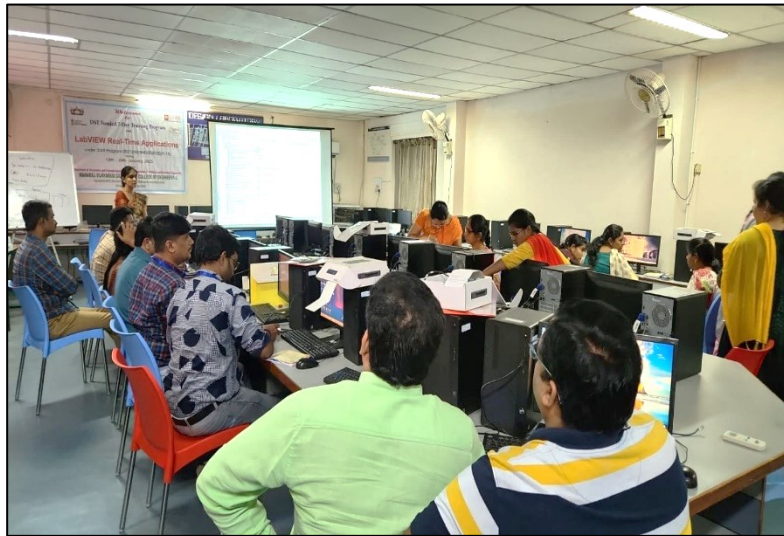


Figure 12: Session was delivered by P. Lahari, Assistant Professor, EEE, GVPCE

HANDS-ON SESSION:

Later in the afternoon, the participants visited all the facilities and were demonstrated the working of equipment like CREO and LabVIEW by the experts.



Figure 13: Hands-on practical session on LabVIEW

DAY-7, 24th JANUARY 2023:

TECHNICAL SESSION:

On day 7, **Dr. O V S R Prasad, Assistant Professor, Department of EEE, GVPCE, Visakhapatnam** delivered a lecture on "*Development of Induction motor Drive using NI LabVIEW RT/FPGA with RIO Hardware & AI/ML Applications with NI LabVIEW*".

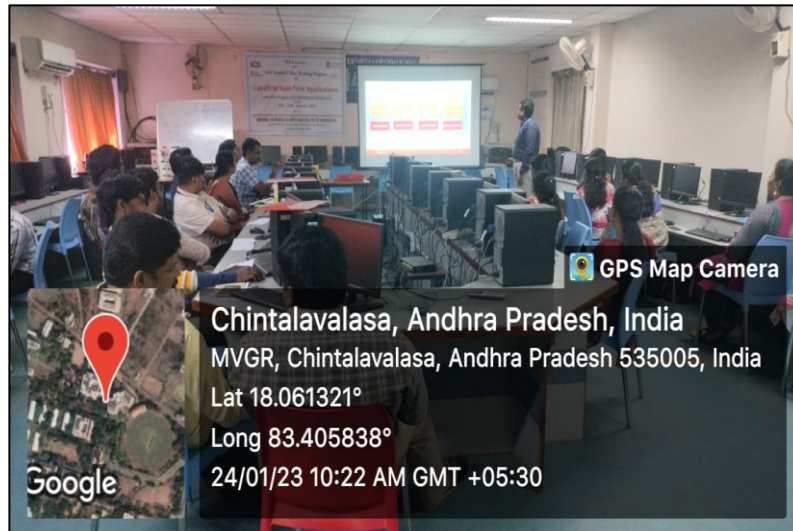


Figure 15: Session delivered by Dr. O V S R Prasad.

HANDS-ON SESSION:

In the afternoon, **Dr. O V S R Prasad, Assistant Professor, Department of EEE, GVPCE, Visakhapatnam,** gave hands on training on the CREO and LabVIEW Applications to the participants. At the end of the day, participants could understand and learn the concepts.

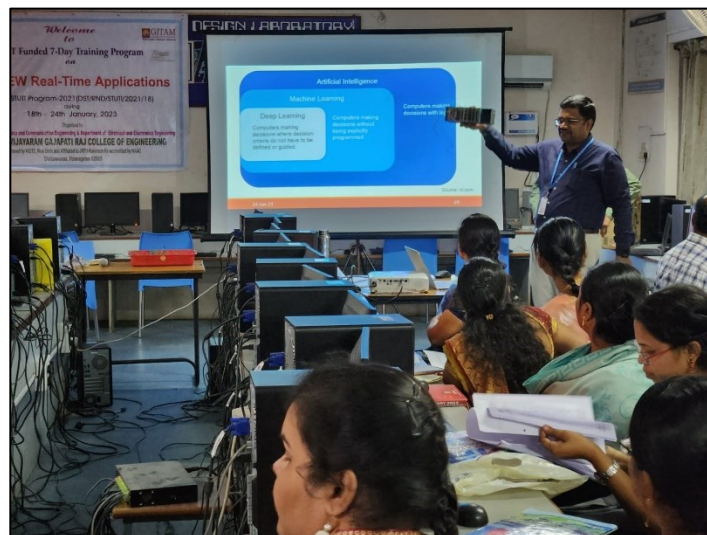


Figure 16: Hands-on live demonstration on LabVIEW and CREO

Distribution of Certificates:



Figure 17: Distribution of certificates to the Participants at MVGR College of Engineering, Vizianagaram, Andhra Pradesh

STUTI program coordinator Dr. Balla Srinivasa Prasad congratulated all the participants on the successful completion of the seven-day training. The training coordinator, Dr. B. Srinivas of MVGR College of Engineering (A), Vizianagaram, thanked each other for completing the training program successfully. Dr. K.V.L. Raju, Principal & Correspondent MVGR, MANSAS and Dr. M. Sunil Prakash, Head of the department, ECE, and Chief guest Dr. Sarat Kumar Sahu, distributed certificates to participants and collected participant feedback forms.

VOTE OF THANKS

At the end of day seven, the STUTI program coordinator Dr. Balla Srinivasa Prasad thanked the training coordinator of MVGRCE (A), Vizianagaram, Dr. B.Srinivas and K.S. Ravi Kumar, Assistant Professor, EEE and also the program panel members of MVGR College of Engineering and also thanked the delegates and resource persons on successful completion of the 7-day program by sharing their knowledge and experiences to all participants. The program concluded with the National Anthem.



Figure 18: Group photo with the participants who attended the 7-day workshop from 18th – 24th JANUARY 2023 at MVGR College of Engineering, Vizianagaram, Andhra Pradesh.