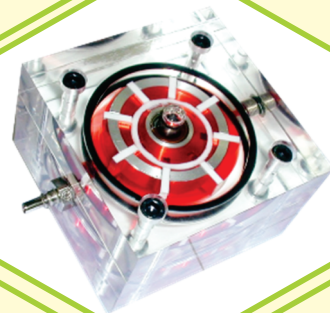
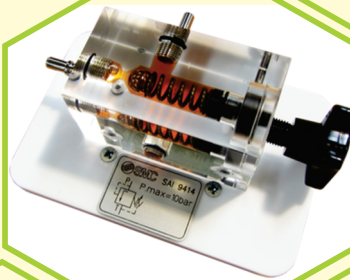
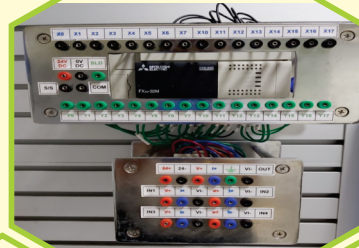




National Agriculture Higher Education Project
Centre of Excellence : Digital Farming Solutions for Enhancing Productivity by
Robots, Drones and AGV's (DFSRDA)
Vaswantrao Naik Marathwada Krishi Vidyapeeth, Parbhani (M.S.) INDIA

Two Week Online Training Programme
on
“ADVANCED HYDRAULICS AND PNEUMATIC TECHNOLOGIES
FOR AGRICULTURE ”

24th May to 04th June 2021



Vaswantrao Naik Marathwada Krishi Vidyapeeth, Parbhani (MS) INDIA

About University

The Marathwada Krishi Vidyapeeth (Presently renamed as Vasanttrao Naik Marathwada Krishi Vidyapeeth) established in 1972 on Land Grant pattern at Parbhani to fulfill the regional aspirations of fields, undertake research and facilitate technology transfer in marathwada region of Maharashtra.

Vasanttrao Naik Marathwada Krishi Vidyapeeth (VNMKV) Parbhani, is one of the prestigious agricultural universities in India. Since its inception, it has gained recognition as an innovative organization in the term of education and research in agriculture. It takes care of research and facilitates agriculture technology transfer in marathwada region of Maharashtra.

About Project

The Centre of excellence for Digital Farming solutions for Enhancing Productivity by Robots, Drones and AGV's (DFSRDA) Under Center for Advanced Agricultural Science and Technology (CAAST) is being implemented in Vasanttrao Naik Marathwada Krishi Vidyapeeth, Parbhani, Maharashtra under world bank Sponsored National Agricultural Higher Education Project (NAHEP) of Indian Council of Agricultural Research (ICAR), New Delhi, Government of India, Since 2019. The main objective of this center is to train PG/PhD students and faculties about advances in science and technology. The project is proposed on 50:50 cost sharing basis between the World Bank and the Government of India, implemented at VNMKV, Parbhani. Overall, the project aims to establish an advanced basic engineering hardware and software setup such as Mechatronics, CAD/CAM/CAE, 3-D Printers and Instrumentation Laboratories for Agribots, Agri-drones and Agri-AGVs., so that a holistic model can be developed to raise the standard of current agricultural education system that provides more jobs and is entrepreneurship oriented and on par with the global agriculture education standards.

As a part of this project, Centre of excellence for Digital Farming solutions for Enhancing Productivity by Robots, Drones and AGV's (DFSRDA), VNMKV, Parbhani is organizing Two Week Online Training Programme on "Advanced Hydraulics and Pneumatics Technologies for Agriculture"

Course Background

Fluid Power is the technology that deals with the generation, control, and transmission of power, using pressurized fluids. Both liquids and gases are considered fluids. Fluid power is the muscle of the industry used to push, pull, regulate, or drive virtually all the machines of modern industry. For example, fluid power steers and brakes automobiles, launches spacecraft, harvests crops, mines coal, drives machine tools, controls airplanes, processes food, drills teeth, and even transport and delivers drugs to the infected areas in the human body efficiently and effectively.

Pneumatic and hydraulic systems are widely used in many areas of industry. Pneumatics involves converting the energy of a compressed air or gas to make something work. Through the use of compressors, control valves, actuators and other control equipment, pneumatic technology is used to power a range of items such as tools, construction equipment and machinery in the mining, automotive, manufacturing and medical industries to name a few. But how do we convert air into a power source?

Hydraulics involves the study of liquids at rest and in motion, particularly under pressure, and applies that knowledge to the design and control of machines. Hydraulics is used in everyday life in construction equipment, airplanes, cars, manufacturing, medical, subsea and many more. Can you imagine if we didn't have fluid power? But how does it work?

This course allows candidates to develop the knowledge and understanding of the operational and maintenance requirements of pneumatic and hydraulic systems and be able to recognize circuit components and interpret drawings for applications in everyday life.

Objectives

1. To understand Basic Pneumatics, Electro Pneumatics and Control systems
2. To understand Hydraulics and Electro hydraulics
3. To understand Positioner and Pneumatic Servo system
4. To study the Basics of PLC
5. To study the application of these tools in automation and other related applications.

Contents

- Properties of air – compressibility, moisture content, need for lubrication, mechanical systems vs air systems
- The role of pressure, volume, temperature
- How does this convert to air power – air compressors
- Understanding pneumatic equipment – air supply system, dryer system, distribution system
- Properties of fluids – volume flow rates, pressure vs head, working loads, Pascal's Law
- How does this convert to fluid power?
- Understanding hydraulic equipment – receiver, pump, control valves, actuator, filter Maintenance and operation of pneumatic and hydraulic systems
- Safety precautions when working with pneumatics and hydraulics
- Pneumatic and hydraulic equipment in the circuit – components, symbols, layout
- Designing and interpreting pneumatic and hydraulic circuits for everyday application

Target Audience

PG, Ph.D. Students, Faculties, Scientists of Vasantrya Naik Marathwada Krishi Vidyapeeth, Parbhani and other Universities, in the area of Agronomy, Horticulture, Extension education, Economics and Agriculture Engineering. etc. Departments are eligible to register and are requested to take advantage of the online training course during this COVID-19 lock down period.

About Selection

- 1) The Whatsapp Group of the selected candidates will be formed at least one day before the start of the E-course and the communications regarding the E-course will be posted in the group.
- 2) Alternatively Candidates can keep accessing the CAAST-VNMKV website (<https://nahep.vnmkv.org.in>) regarding the selection, preferable on the day before the start of the seminar.
- 3) Lead lectures through online platform will be conducted along with online interaction. The link, ID and password for joining the online session will be communicated through Whatsapp group of the selected candidates 30 minutes before the start of the session.

- 4) Certificates will be issued to those participants only who will complete all online session and assignments.

Training Outcomes

Methodology for conduct of Training

Pre and Post Evaluation: Pre and Post certificate course evaluation will be carried out to evaluate the impact of the certificate course

Conduct of the Certificate Course:

Project Report: The candidates are required to complete the case study based project report and submit it online.

Evaluation : There will be evaluation of the candidates at the end of each week, and a final evaluation towards the end of the course. The evaluation will be in the form of MCQs, descriptive questions, and power point presentations, as the case may be.

Feedback : Candidates need to provide the feedback towards the end of certificate course.

Registration

Duration of E-course:

24th May to 04th June, 2021 (Two Weeks)

Registration Fee (Non Refundable):

Course Fee:

Rs. 250/- for VNMKV Students,

Rs. 500/- for VNMKV Faculty,

Rs. 500/- for Students other than VNMKV &

Rs. 1000/- for Faculty other than VNMKV.

International Participant 50 USD

Account Details :

Account Name : Comptroller, Vasantrya Naik Marathwada Krishi Vidyapeeth, Parbhani

Account Number : 38639565001

Bank Branch : State Bank of India, **Branch: MKV, Parbhani (MS) India.**

IFSC Code : SBIN0020317

MICR Code : 431002203

Important Dates:

Interested participants can register on below mentioned link, for the online registration is, <https://qrgo.page.link/abtMk>

or use QR code provided here.



Last date of registration : May 21, 2021

Confirmation of admission to the candidates: May 22, 2021

Course Language: English

**Two Week Online Training Programme
on
“ADVANCED HYDRAULICS AND PNEUMATICS TECHNOLOGIES FOR AGRICULTURE”**

24th May to 04th June, 2021 Time : 11.00 Hrs

Patrons



Dr. A. S. Dhawan
Vice-Chancellor
VNMKV, Parbhani



Dr. R. C. Agrawal
National Director
NAHEP, ICAR, New Delhi

Chief Convenors



Dr. D. N. Gokhale
DI & Dean F/A
VNMKV, Parbhani



Dr. Prabhat Kumar
National Co-ordinator
NAHEP, ICAR, New Delhi

Convenor



Dr. G.U. Shinde
Principal Investigator
NAHEP-CAAST-DFSRDA
VNMKV, Parbhani

Organizing Secretary



Dr. Narendra Khatri
RA, NAHEP,
VNMKV, Parbhani
M. 9460533888

Co-Organizing Secretary

Dr. A.U. Waikar
SRF (CDKS), NAHEP,
VNMKV, Parbhani
M. 9421864320

Dr. S.E. Shinde
JRF (CDKS), NAHEP,
VNMKV, Parbhani

Training Coordinator

Er. V.D. Jadhav
JE (Elec.), NAHEP,
VNMKV, Parbhani

Er. S. A. Kanwate
JE (Comp.), NAHEP,
VNMKV, Parbhani