About the Institute:

Visvesvaraya National Institute of Technology (VNIT), formerly Visvesvaraya Regional College of Engineering, Nagpur (VRCE), is a public engineering and research institution in Nagpur, Maharashtra, in central India. It was established in June 1960 by the Government of India and later named in honour of engineer, planner and statesman Sir Mokshagundam Visvesvaraya. VNIT Nagpur is centrally funded and belongs to the National Institutes of Technology (NIT) system. In 2007, the institute was conferred the status of Institute of National Importance by an Act of Parliament of India. VNIT Nagpur has been ranked 30th among engineering colleges in India by the National Institutional Ranking Framework (NIRF) in 2021.

About the Department

The Department of Electronics and Computer Science was created in 1994 from the Department of Electrical Engineering. Later, the Department of Electronics and Communication Engineering has been created in May 2014. It offers under-graduate program in Electronics and Communication Engineering and post-graduate program in Communication Systems Engineering. The department specializes in the areas of Communication Engineering, Image Processing, Embedded System Design, RF and Antenna Design. The B.Tech. program and M.Tech. program offered by the department have been awarded full accreditation by NBA. The department is actively involved in R & D as well as consultancy projects and has collaborations with several industries, academic institutes, and R&D organizations in the country.

TiHAN LAB of IIT Hyderabad:

Technology Innovation Hub on Autonomous Navigation (TiHAN) is a multi-departmental initiative, including researchers from Electrical Engineering, Computer Science & Engineering, Mechanical, and Aerospace Engineering, Civil Engineering, Mathematics, Design, and Entrepreneurship at IIT Hyderabad with collaboration and support from reputed institutions and industry.

TiHAN is recognized as a Scientific and Industrial Research Organization (SIRO) by the Department of Scientific and Industrial Research.

The vision of this hub is to become a global destination for next-generation smart mobility technologies that utilize reliable and efficient autonomous navigation and data acquisition systems in the next five years. The mission of this hub is to accelerate the adoption of autonomous navigation and next-generation smart mobility technologies for use in intelligent transportation and agricultural applications, not only in India but also in a global context.

Primary Objectives of the Hub:

- Research & Technology Development
- Industry Collaborations
- Human resource & Skill development
- Fellowships assistance
- New Academic Programs, Workshops, Symposia, Conferences
- Innovation, Entrepreneurship & Start-up Ecosystem
- International Collaborations – Academia & Industry, Faculty/Student Exchange Programs

Technology Innovation Hub on Autonomous Navigation and Data Acquisition Systems , IIT Hyderabad

Faculty Development Program
on
Modelling and Control implementation on Autonomous Navigation
13th to 17th March 2023

Patron
Dr. Pramod Padole,
Director, VNIT Nagpur

Chairman
Dr. Avinash Keskar
HoD ECE, VNIT Nagpur

Coordinators
Dr. Vipin Kamble & Dr. K.Surender,
Assist. Prof., Department of ECE

Organized by

Visvesvaraya National Institute of Technology Nagpur, Maharashtra, India.
Website: www.vnit.ac.in
Fax: 0712 – 2802200

Objective of the Course

The STTP is aimed to expose participants to current practices and recent trends in the field of quadcopters and their related hardware and software implementations. It is targeted at faculty members, students, researchers, and engineers working in these rapidly evolving areas with an aim to make the audience aware of the recent advancements and state-of-the-art research in this field. The course will be covering various topics in mathematical formulation needed for structure of unmanned aerial vehicles and its component selection, controller and drone data processing systems, etc. This would unfold the interconnections and interdependence amongst them. Course participants will learn various pertaining topics through lectures and hands-on experiments. Also, case studies showing Industrial/research use and assignments will be shared to stimulate the research motivation of participants.

Expected Outcome:

- Participants could able to develop basic and advance drone for major applications on agriculture and fire navigation
- Design of controllers for drone for set point tracking and disturbance rejection.
- Selection of suitable sensors and actuators for different application of drone.
- Hands on session on design and construction of quadcopter design will be conducted based on facts of basics of aviation science.

Topics to be covered:

- Develop dynamic modeling of the quadcopter
- Simulate quadcopter using open source software
- Mathematical modelling drone for major applications on agriculture and fire navigation
- Controller design and implementation for the quadcopter
- Selection and interpret the mechanism of sensors and actuator system needed for quadcopter design
- Design, construction and troubleshooting of quadcopter in form of Balsa wood/ P-U Foam/plywood

Who can apply:

Faculty members of AICTE approved institutions, research scholars, PG/UG students, and participants from Government and Industry.

Upon successful completion of short-term course, the certificate will be given to the participants.

Resource Person:

Industry and academic experts from IITs, NITs and IIIT will be the resource persons of the workshop

Registration Fee:

Industry/Govt./Research organizations: Rs. 2,500/-

Faculty/staff from academic institutions: Rs. 1,500/-

Research scholar/Student: Rs. 500/-

Additional 18% GST as per Govt. of India norms is applicable on the course fee.

Important Dates:

Last date of online registration: 25/02/2023

Intimation of registration acceptance: 05/03/2023

Registration process:

1) Complete the course fee payment: https://pay.vnit.ac.in/event
2) Complete the online registration: https://forms.gle/Nmh1ET7iyoKwSx7L9

OR

General Information

- Only 30 participants are allowed for short term course on first come first serve basis.
- Pre-requisites: NIL
- The workshop will be based on a combination of theoretical and practice-oriented sessions related to quadcopter modelling.

Contact Details

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