



# BOOT CAMP 4.0

on

## Drone Assembly, Navigation & Applications

Jointly conducted by

S.V. NATIONAL INSTITUTE OF TECHNOLOGY, SURAT  
and SARVAJANIK COLLEGE OF ENGINEERING AND  
TECHNOLOGY, SURAT



Date: 20, 21, 26-28 January, 2024

### Summary document for Bootcamp

Capacity building for Human Resource Development in Unmanned Aircraft Systems (Drone and related Technology)

#### OBJECTIVE OF BOOTCAMP:

To conduct Bootcamps with intense hands-on training session for preparing candidates in Industry ready technological aspects in UAS and related areas.

#### GENERAL DETAILS:

- **Bootcamp Title:** DRONE ASSEMBLY, NAVIGATION & APPLICATIONS
- **Participant Eligibility:** Graduates and Postgraduate students
- **Minimum program duration:** 40 hours
- **Batch size:** 30 Nos
- **Industries Involvement:** Active involvement of resources for program outline development / Guest lectures / Demonstration from start-ups/organizations working in the field of UAS.
- **Faculty Involvement:** Mentoring to be undertaken by subject matter experts from UAS related RC / PI / other experts.
- **Training Methodology:** Theory session, hands-on, project, field visit/ demo, etc.
- **Lab exposure:** Provided to participants as per course syllabus.

#### ORGANIZING BODY:

Participating Institutes (Academic/C-DAC/ NIELIT):

- **CI:** Dr. Anand D. Darji
- **Bootcamp Co-ordinator:** Dr. Raghavendra Pal, DECE, SVNIT,

Collaboration Partner details:

- Sarvajnik College of Engineering and Technology, Surat
- Dr. Nehal Shah, DoECE, SCET, Surat.

## Summary Report

Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat and Sarvajanik College of Engg. and Tech. (SCET), Surat have jointly organized Boot Camp 4.0 on “Drone Assembly, Navigation, and Applications” from 20-21, 26-28 January 2024 in offline mode coordinated by Dr. Raghvendra Pal (Asst. Prof., DoECE, SVNIT), Dr. Dipti Rana (Asso. Prof., DoCSE, SVNIT), Dr. Anand Darji (Prof., DoECE, SVNIT), Dr. Suresh Dahiya (Asst. Prof., DoECE) and Dr. Nehal Shah (Asso. Prof., DoECE, SCET) under the project “Capacity Building for Human Resource Development in Unmanned Aircraft Systems (Drone and related Technology)”, a project funded by Ministry of Electronics and Information Technology (MeitY), Government of India (GoI).

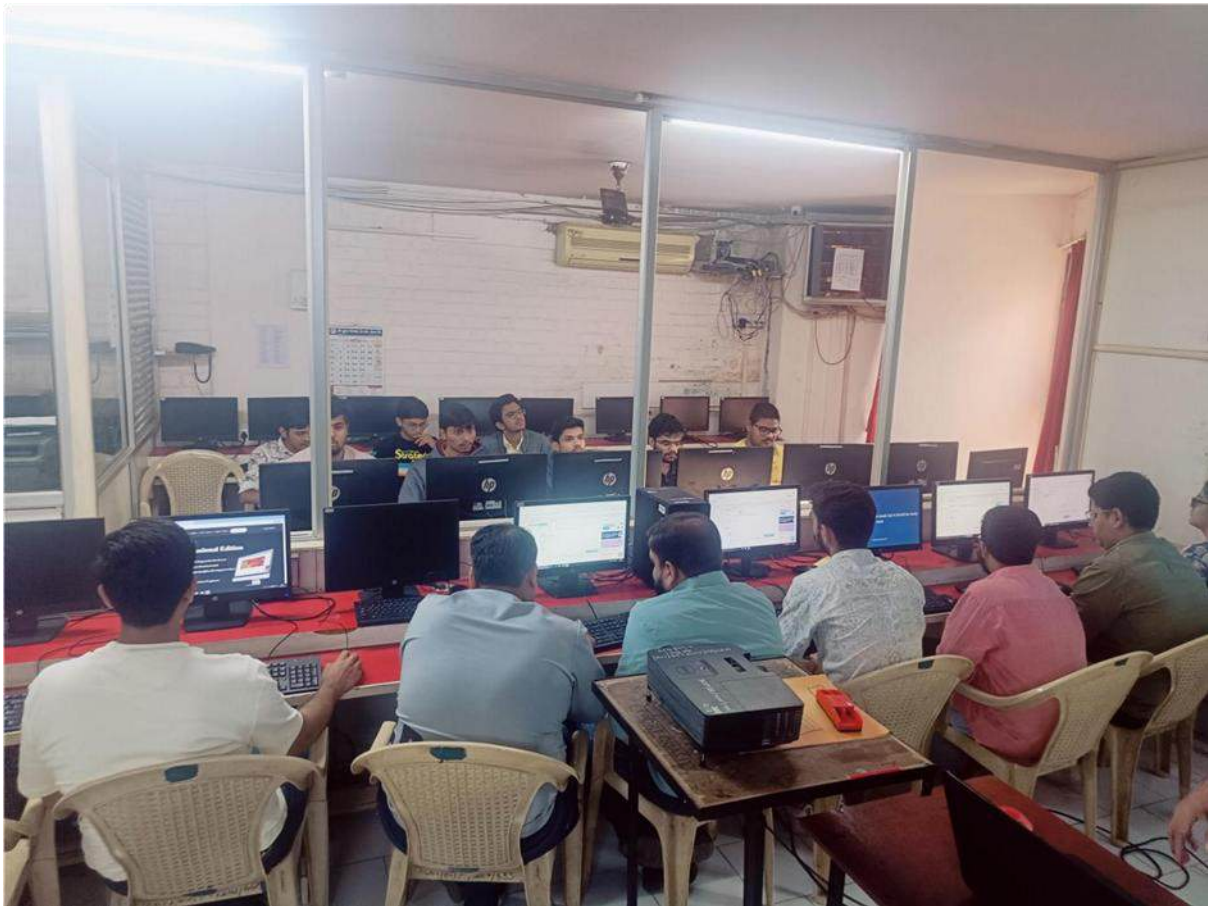
The Boot Camp was aimed to exchange knowledge in the area of Unmanned Aerial Systems – Drone components, their assembly, navigation and various applications with their terminology, algorithms, case studies, and related research issues & challenges. The training programme was inaugurated on 20th January 2024 in presence of Dr. Chirag Paunwala (H.O.D, DoECE, SCET). Taking into account the regular academic schedule of students, the workshop was organized on non-working days. Participants got exposure to an array of expert talks, covering topics namely "Drone Basics, Data Communication and Networking for Drones, Drone light show, basics of circuit design, Arduino simulation based programming, MCU selection for drones, basic of 3d shapes and 3d printer technology, Object detection using Yolo and career options in this domain".

This dynamic event has garnered an exceptional response, with over 40 registrations pouring in from colleges across Gujarat, demonstrating the widespread interest in emerging technologies, even during the weekends.

What sets the Bootcamp apart is not just its diverse array of topics but also the inclusion of industrial professionals eager to contribute their practical insights. This blend of academic enthusiasm and real world expertise ensures a unique learning environment, offering attendees a comprehensive understanding of the discussed subjects. It poised to be a collaborative hub for innovation and knowledge exchange, fostering a community of tech enthusiasts and professionals eager to shape the future of technology. Further, the participants identify stepping stones for their research. Also, the participants appreciated the overall organization of the training programme and showed their interest to attend such programs at SVNIT in the future. The organizing committee is thankful to Meity, Government of India to provide the opportunity to conduct this boot camp 4.0. We are thankful to all the experts for their valuable time and knowledge sharing along with the participants for live and interactive involvement.

## Photograph of the Event







## Media Coverage

# સ્કેટ કોલેજમાં 'બુટકેમ્પ 4.0' યોજાયો, વિદ્યાર્થીઓ ડ્રોન ટેકનોલોજી વિશે શીખ્યા સ્ટૂડન્ટ્સે જાતે ડ્રોન એસેમ્બલ કર્યું, ઉડાડીને ડેમો આપ્યો

સિટી રિપોર્ટર. સુરત

સાર્વજનિક કોલેજ ઓફ એન્જિનિયરિંગ એન્ડ ટેકનોલોજી (SCET) અને સરદાર વલ્લભભાઈ નેશનલ ઇન્સ્ટિટ્યૂટ ઓફ ટેકનોલોજી (SVNIT) ના સંયુક્ત ઉપક્રમે બુટકેમ્પ 4.0 - 'ડ્રોન્સ: એસેમ્બલી, નેવિગેશન અને એપ્લિકેશન્સ'નું આયોજન કરાયું હતું. આ કાર્યક્રમ MeitY (ઇલેક્ટ્રોનિક્સ અને ઇન્ફોર્મેશન ટેકનોલોજી મંત્રાલય)ના એક ખાસ ઇનિશિયેટિવ હેઠળ સ્પોન્સર કરાયું હતું. જે અંતર્ગત ભારતમાં માનવરહિત એરક્રાફ્ટ સિસ્ટમમાં માનવ સંસાધન વિકાસ માટે કેપેસિટી બિલ્ડિંગ કરવામાં આવી રહી છે. જેથી વધુમાં વધુ યુવાનોને અનમેન્ડ ડ્રોન્સની ટેકનોલોજી વિશે ટ્રેનિંગ આપી શકાય. આ કાર્યક્રમ SVNITના ડો. આનંદ દરજી દ્વારા ડિઝાઇન કરાયું હતું.

**લર્નિંગ | નેટવર્કિંગ ફોર ડ્રોન, ડ્રોન લાઇટ શો જેવા ટોપિક્સ જાણ્યા**

5 દિવસીય બુટકેમ્પમાં પાર્ટિસિપન્ટ્સે 'ડ્રોન બેઝિક્સ, ડેટા કમ્યુનિકેશન એન્ડ નેટવર્કિંગ ફોર ડ્રોન્સ, ડ્રોન લાઇટ શો, સર્કિટ ડિઝાઇનની બેઝિક્સ, ઓર્ડિનો સિમ્યુલેશન બેઝડ પ્રોગ્રામિંગ અને ડ્રોન માટે MCU પસંદગી જેવા મૂળભૂત વિષયોને શીખ્યા હતા. સાથે જ પાર્ટિસિપન્ટ્સને ડ્રોનમાં વપરાતા ભાગો માટે 3D શેપ અને 3D પ્રિન્ટર ટેકનોલોજી, ઓબ્જેક્ટ ડિટેક્શન અને આ ફિલ્ડમાં કારિયર બનાવવા વિશે પણ વાત કરવામાં આવી હતી. આ કાર્યક્રમમાં ભાગ લેવા વિવિધ કોલેજોમાંથી 40થી વધુ વિદ્યાર્થીઓ જોડાયા હતા. વિદ્યાર્થીઓએ બુટકેમ્પમાં ડ્રોન બનાવતા પણ શીખ્યું હતું અને ડ્રોન ફ્લાઈંગ પણ કર્યું હતું.

**Divya Bhaskar 03-02-2024**

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સાર્વજનિક કોલેજ ઓફ એન્જિનિયરિંગ એન્ડ ટેકનોલોજી (SCE) અને સરદાર વલ્લભભાઈ નેશનલ ઇન્સ્ટિટ્યૂટ ઓફ ટેકનોલોજી (SVNIT) વચ્ચેના સંયુક્ત ઉપક્રમે જોઈન્ટ બુટકેમ્પ ૪.૦ - 'ડ્રોન્સ: એસેમ્બલી, નેવિગેશન અને એપ્લિકેશન્સ' યોજાયો હતો.



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Date: 20, 21, 26-28 January , 2024



### About Bootcamp Program:

SVNIT, Surat and SCET Surat are jointly organising a Bootcamp Training Program on Capacity Building for Human Resource Development in Unmanned Aircraft Systems (Drone Assembly, Navigation and related Applications) in India, under a project funded by MeitY (Ministry of Electronics and Information Technology).

### Bootcamp Course Content:

- Introduction to drone dynamics: Processors, Pixhawk, Autopilot, and Interfacing of peripherals
- Introduction of DGCA rules
- Introduction of Drone Sensors
- Introduction to GNSS and Pseudolites
- Basics of Inertial and Fused Navigation Systems
- Commercially available GNSS receivers and application
- Drone Applications
- Introduction to Anti-drone techniques, spoofing, and Antispoofing
- Practicals on drone components for navigation and control
- Practicals on interfacing of commercial GNSS receivers
- Practicals on GNSS signal processing
- Data Communication, diversity, and networking
- Drone Assembly and Flying Demonstration

**Duration : 5 days (40 Hrs)**

### Benefits of the Program:

- Theory & Hands-on experience on tools
- Session delivery by renowned/industry experts
- Certification upon successful completion

### Eligibility:

- Studying in 2nd,3rd year or onwards or Graduate in BE/ Btech or Postgraduate in MSc/ MCA/ ME/ Mtech or PhD
- Faculty/ Working Professional/ Staff from Industry/ Govt. organizations (with above education qualification)

### Team Members:

1. Rinkesh Patel (Research Associate) (+918849486604)
2. Aksh Patel (Research Associate) (+919662166835)
3. Isha Agarwal (Activity and Lab Coordinator) (+919586341231)

### Registration Fee:

Includes welcome kit, tea break refreshment, assessment, and certification

- Students **Rs. 500/-**
- Working professionals and faculty members **Rs. 1000/-**

**Date: 20, 21, 26-28 January, 2024**

**Timing: 10:00 AM to 6:00 PM**

Hostel Accommodation may be provided based on prior approval from the organizing authority on a payment basis (not included in the Registration Fee)

**Training Location/ Address: AV Room, Electronics Engineering Department, Sarvajnik College of Engineering and Technology, Surat**

### Contact Details:

**Email:** avionics.uavlab@gmail.com

**Contact number:** 8849486604,9662166835

**Payment Details:** <https://tinyurl.com/fmj9tneb>

### Registration Link:

<https://tinyurl.com/avionicsuavlabbootcamp4>

Or

Scan through QR code reader



**Candidate who register before 17th january will get full refund of registration fees.**

**Limited Seats are Available** (Registration will be done on a first-come, first-served basis)

**For more details visit:** [www.svnit.ac.in](http://www.svnit.ac.in)

### Coordinators:

1. Dr.Raghavendra Pal, raghavendrapal@eced.svnit.ac.in
2. Dr.Nehal N. Shah, nehal.shah@scet.ac.in
3. Dr.Suresh Dahiya, suresh.dahiya@eced.svnit.ac.in
4. Dr.Dipti Rana, dpr@coed.svnit.ac.in



SAE Phoenix Aero