# ANNUAL REPORT

## FACULTY OF TECHNOLOGY
## ACADEMIC YEAR: 2023 - 2024

**Uttar Banga Krishi Viswavidyalaya**
**Pundibari, Cooch Behar**
**West Bengal-736165**

## FOREWORD

*It gives me immense pleasure to publish the Annual Report of the Faculty of Technology for the year 2023-2024. The Faculty of Technology started its glorious journey in 2005 at the main campus of Uttar Banga Krishi Viswavidyalaya, West Bengal. Presently we offer 4 (Four) years Bachelor's Degree programme in Agricultural Engineering with annual intake capacity of 35 (Thirty-five) students in the first year and 6 (six) students in the second year through lateral entry. From the academic year 2016-17 the faculty has implemented the recommendations of ICAR Fifth Dean's Committee recommendations. Since inception, the Faculty of Technology continues to be approved by All India Council of Technical Education (AICTE). The students of the faculty have been producing excellent performances in both academic and professional careers. A good number of our students have qualified in All-India level entrance examinations like Graduate Aptitude Test in Engineering (GATE), Indian Council of Agricultural Research - Junior Research Fellowship (ICAR-JRF), Common Admission Test (CAT). Our dedicated teachers have been quite instrumental in developing technical skills and imparting technical knowledge to the students. The cooperation and coordination of all the teaching and non-teaching staff of the faculty have fostered an ideal environment for teaching, learning and skill development. The University administration is also extending all sorts of support for the development of the faculty. It gives me utmost pleasure to inform that recently the North Bengal Development Department has committed financial support for the extension of the academic building of Faculty of Technology. I take this opportunity to convey my sincere gratitude and thanks to all those who have extended their support for the development of Faculty of Technology. I extend my best wishes to all my beloved students of the faculty for a glorious and successful career.*

(***ASHIS KUMAR DAS, PhD***)
**Dean (Actg.)**

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# 1. OVERVIEW

## 1.0 Background

Agricultural education in North Bengal began in 1979 with the establishment of the North Bengal Campus of Bidhan Chandra Krishi Viswavidyalaya (BCKV), West Bengal. To promote the development of agriculture in the region, Uttar Banga Krishi Viswavidyalaya (UBKV) was founded on 1st February 2001 at Cooch Behar, West Bengal. Since its inception, the university has been dedicated to the advancement of agricultural education, pioneering research, and extension services in the eight northern districts of West Bengal. In 2005, the Faculty of Technology was established as the third faculty of UBKV with the approval of the All-India Council for Technical Education (AICTE), New Delhi, and the Director of Technical Education, Government of West Bengal. The faculty offers a four-year B.Tech. degree programme in Agricultural Engineering, designed to enhance the use of modern technology for improving the productivity of agricultural and horticultural crops. Emphasis is laid on the efficient utilization and conservation of natural resources to ensure sustainable agricultural development. The curriculum of the B.Tech. programme integrates engineering principles with agricultural sciences, addressing the technological needs of modern agriculture. Admissions to the undergraduate programme are based on candidates' performance in the West Bengal Joint Entrance Examination (WBJEE) conducted annually by the West Bengal Joint Entrance Examinations Board.

The syllabus is framed in accordance with the latest advancements in the field and the guidelines of the Indian Council of Agricultural Research (ICAR), and it is duly approved by AICTE. The U.G. course of Agricultural Engineering comprises of various disciplines like Agricultural Science, Basic Science and Humanities, Computer Science and Engineering, Civil Engineering, Mechanical Engineering, Electrical Engineering, Social Sciences, Farm Power and Machinery, Soil and Water Conservation Engineering, and Processing and Food Engineering. The faculty has the provision of five academic departments namely, (i) Department of Basic Science & Humanities, (ii) Department of Basic Engineering, (iii) Department of Farm Machinery and Power, (iv) Department of Process and Food Engineering, and (v) Department of Soil and Water Conservation Engineering.

## 1.1 Functions

### 1.1.1 Our vision

i. To contribute to the northern region of West Bengal through excellence in education research and application in the fields of agricultural engineering and technology.
ii. To serve as a valuable resource for technologies involved in agriculture and to become a source of pride through valuable contributions to the people and the society.
iii. To create a strong and intelligent UBKV family with full of enthusiastic technocrats.

### 1.1.2 Our Mission

i. To mold ourselves into a learning community where we work, listen and respect each other.
ii. To create an environment, where faculties, researchers and students can work synergistically across disciplinary boundaries.
iii. To undertake several collaborative interdisciplinary research projects, which can provide long term benefits in the areas of academics, rural agriculture and several technological aspects of agriculture such as: Agricultural water management, small scale food processing, and Farm mechanization?
iv. To develop a sustainable system with strong interactive connections among the faculty, researchers, students and farmers, by providing need based technological outputs to the agricultural society.
v. The faculty aims to serve as a technological hub for engineering applications in the fields of agriculture through academics, research and extension.

# 2. COURSE CURRICULUM

## 2.0 Course details

The course structure including disciplines like Farm Machinery & Power, Soil & Water Conservation Engineering, Food Processing, Civil, Mechanical, Electrical, Computer Science, Agribusiness, etc.—is designed following ICAR guidelines and AICTE approval. Semester-wise syllabus for B. Tech. in Agricultural Engineering for implementation from Academic Year 2023-2024 are presented in Table 2.1.

Table 2.1: Syllabus as per the guidelines of the 5th Dean's Committee

| Semester I | | | |
|---|---|---|---|
| **S. No.** | **Title of the Course** | **Course No.** | **Credit Hour** |
| 1. | Engineering Mathematics-I | MTH 101 | 3(2+1) |
| 2. | Engineering Physics | PHY 101 | 3(2+1) |
| 3. | Engineering Chemistry | CHM 101 | 3(2+1) |
| 4. | Principles of Soil Science | AG 101 | 3(2+1) |
| 5. | Surveying and Levelling | CE 101 | 3(1+2) |
| 6. | Environmental Science and Disaster Management | HOR 101 | 3(2+1) |
| 7. | Engineering Drawing | ME 101 | 2(0+2) |
| 8. | Electrical Machines and Power Utilization | EE 101 | 3(2+1) |
| | | **Total Credit Hours** | **23(13+10)** |

| Semester II | | | |
|---|---|---|---|
| **S. No.** | **Title of the Course** | **Course No.** | **Credit Hour** |
| 1. | Engineering Mathematics-II | MTH 151 | 3(2+1) |
| 2. | Fluid Mechanics and Open Channel Hydraulics | CE 151 | 3(2+1) |
| 3. | Principles of Horticultural Crops and Plant Protection | HOR 151 | 2(1+1) |
| 4. | Entrepreneurship Development and Business Management | AG 151 | 3(2+1) |
| 5. | Principles of Agronomy | AG 152 | 3(2+1) |
| 6. | Engineering Mechanics | CE 152 | 3(2+1) |

| | | | |
|---|---|---|---|
| 7. | Workshop Technology and Practices | ME 151 | 3(1+2) |
| 8. | Communication Skills and Personality Development | ENG 151 | 2(1+1) |
| | | **Total Credit Hours** | **22(13+9)** |

| **Semester III** | | | |
|---|---|---|---|
| **S. No.** | **Title of the Course** | **Course No.** | **Credit Hour** |
| 1. | Soil and Water Conservation Engineering | SWC 201 | 2(1+1) |
| 2. | Watershed Hydrology | SWC 202 | 3(2+1) |
| 3. | Tractor and Automotive Engines | FMP 201 | 3(2+1) |
| 4. | Fundamentals of Renewable Energy Sources | FMP 202 | 3(2+1) |
| 5. | Web Designing and Internet Applications | CSE 201 | 2(1+1) |
| 6. | Engineering Mathematics-III | MTH 201 | 3(2+1) |
| 7. | Soil Mechanics | CE 201 | 2(1+1) |
| 8. | Strength of Materials | CE 202 | 2(1+1) |
| 9. | Machine Design | ME 201 | 2(2+0) |
| | | **Total Credit Hours** | **22(14+8)** |

| **Semester IV** | | | |
|---|---|---|---|
| **S. No.** | **Title of the Course** | **Course No.** | **Credit Hour** |
| 1. | Building Construction and Cost Estimation | CE 251 | 2(2+0) |
| 2. | Theory of Machines | ME 251 | 2(2+0) |
| 3. | Heat and Mass Transfer | ME 252 | 2(2+0) |
| 4. | Agricultural Structures and Environmental Control | PFE 251 | 3(2+1) |
| 5. | Farm Machinery and Equipment-I | FMP 251 | 3(2+1) |
| 6. | Renewable Power Sources | FMP 252 | 3(2+1) |
| 7. | Irrigation Engineering | SWC 251 | 3(2+1) |
| 8. | Sprinkler and Micro Irrigation Systems | SWC 252 | 2(1+1) |
| | | **Total Credit Hours** | **20(15+5)** |

**Skill Development Training-I Summer break June-July after 4$^{th}$ Semester (Student READY) ***

| Semester V | | | |
|---|---|---|---|
| **S. No.** | **Title of the Course** | **Course No.** | **Credit Hour** |
| 1. | Tractor Systems and Controls | FMP 301 | 3(2+1) |
| 2. | Farm Machinery and Equipment-II | FMP 302 | 3(2+1) |
| 3. | Tractor and Farm Machinery Operation and Maintenance | FMP 303 | 2(0+2) |
| 4. | Engineering Properties of Agricultural Produce | PFE 301 | 2(1+1) |
| 5. | Post-Harvest Engineering of Cereals, Pulses and Oil Seeds | PFE 302 | 3(2+1) |
| 6. | Dairy and Food Engineering | PFE 303 | 3(2+1) |
| 7. | Groundwater, Wells and Pumps | SWC 301 | 3(2+1) |
| 8. | Watershed Planning and Management | SWC 302 | 2(1+1) |
| 9. | Auto CAD Applications | ME 301 | 2(0+2) |
| 10. | *Skill Development Training-I (Student READY) Registration and Evaluation only | TRN 301 | 5(0+5) |
| **Total Credit Hours** | | | **28(12+16)** |

| Semester VI | | | |
|---|---|---|---|
| **S. No.** | **Title of the Course** | **Course No.** | **Credit Hour** |
| 1. | Design of Structures | CE 351 | 2(1+1) |
| 2. | Computer Programming and Data Structures | CSE 351 | 3(1+2) |
| 3. | Thermodynamics, Refrigeration and Air Conditioning | ME 351 | 3(2+1) |
| 4. | Post-Harvest Engineering of Horticultural Crops | PFE 351 | 2(1+1) |
| 5. | Drainage Engineering | SWC 351 | 2(1+1) |
| 6. | Water Harvesting and Soil Conservation Structures | SWC 352 | 3(2+1) |
| 7. | Bio-energy Systems: Design and Applications | FMP 351 | 3(2+1) |
| 8. | Applied Electronics and Instrumentation | EE 351 | 3(2+1) |
| | **Total Credit Hours** | | **21(12+9)** |

**Skill Development Training-II in Summer break June-July after 6th Semester (Student READY)**

**VII Semester**

**Student READY (Rural and Entrepreneurship Awareness Development Yojana)**

| | |
|---|---|
| | Semester VII | | |
| **S. No.** | **Title of the Course** | **Course No.** | **Credit Hour** |
| 1. | Artificial Intelligence (Elective course) | CSE 401 | 3(3+0) |
| 2. | Photovoltaic Technology and Systems (Elective course) | EE 401 | 3(2+1) |
| 3. | Remote Sensing and GIS Applications (Elective course) | SWC 404 | 3(2+1) |
| 4. | Skill Development Training-II (Student READY) Registration and Evaluation only | TRN 401 | 5(0+5) |
| 5. | Project Planning and Report Writing (Student READY) | PRJ 449 | 10(0+10) |
| | **Total Credit Hours** | | **24(7+17)** |

[#]**Educational tour during winter/January break**

| **VIII Semester**<br>**Student READY (Rural and Entrepreneurship Awareness Development Yojana)** | | | |
|---|---|---|---|
| **Semester VIII** | | | |
| **S. No.** | **Title of the Course** | **Course No.** | **Credit Hour** |
| 1. | 10- weeks Industrial Attachment /Internship (Student READY) | TRN 451 | 10(0+10) |
| 2. | 10- weeks Experiential Learning On campus (Student READY) | TRN 452 | 10(0+10) |
| 3. | [#]Educational Tour (Registration only) | EDT 451 | 2 (0+2) |
| **Total Credit Hours** | | | **22(0+22)** |

**Grand Total = (23+22+22+20+28+21+24+22) = 182 Credit Hours**

# 3. STUDENT ACTIVITIES AND NEWS

## 3.0 Students' Achievements

The students of Faculty of Technology have consistently demonstrated excellence in diverse fields, showcasing their talent, determination, and holistic development. Throughout the academic year 2023–2024, our students have made remarkable contributions and achieved significant milestones in academics, cultural activities, and social engagements.

Many students successfully appeared in various competitive examinations, securing commendable ranks and positions. Their achievements highlight the university's strong academic foundation and its commitment to nurturing competent professionals in the field of agricultural sciences and allied disciplines.

## 3.1 Performance in Graduate Aptitude Test in Engineering (GATE) Examination

The analysis indicates that, year after year, the Faculty of Technology achieves the most promising results in terms of GATE qualifications. Fig. 3.1 illustrates the number of students who qualified in the GATE examination. The Fig. 3.1 is also depicted that the number of students qualified in the last two years are notable.

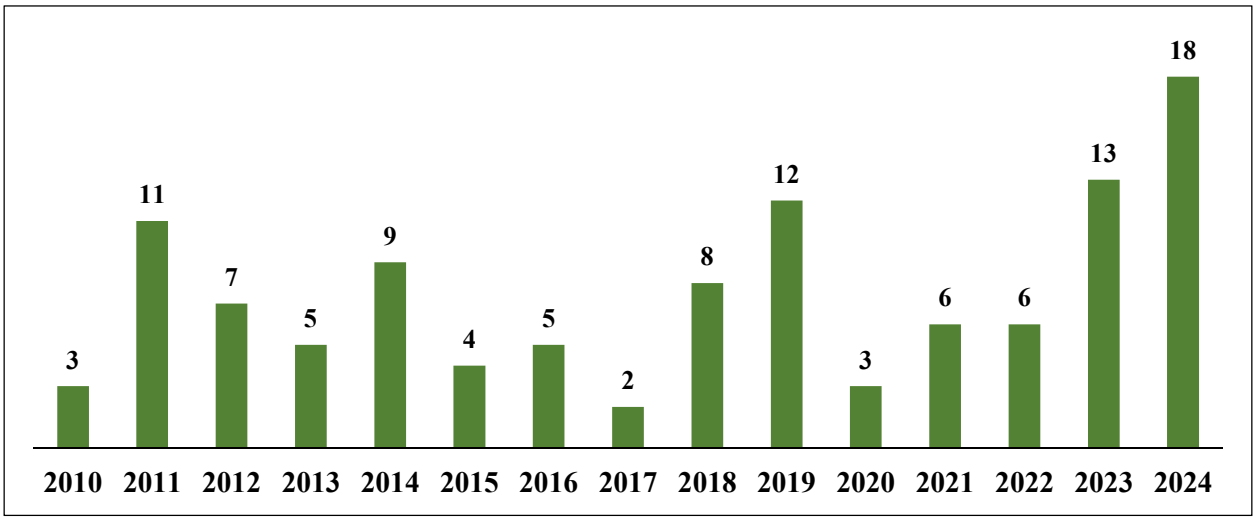


Fig. 3.1 The number students qualified in the GATE-2024 Examination

It is interesting to note that the performance of this year (GATE 2024) students is much better than all other previous years. The brief details of the GATE examination in year 2024 are given in Table 3.1. It can be seen that the performance of third year (pre-final year) students is also praiseworthy.

Table 3.1 GATE ranks of the students in 2024

| Sl. No. | Name of the Students | Registration no. of UBKV | All India GATE Rank | Position of the student |
|---|---|---|---|---|
| 1. | Bibaswan Bhattacharya | AE-2020-07-B | 21 | Final year |
| 2. | Arnab Sarkar | AE-2020-04-B | 24 | Final year |
| 3. | Subhamoy Singha | AE-2020-24-B | 34 | Final year |
| 4. | Anindita Roy | AE-2020-02-B | 48 | Final year |
| 5. | Kuntal Pal | AE-2021-14-B | 69 | Pre-final year |
| 6. | Dipak Modak | AE-2020-09-B | 81 | Final year |
| 7. | Soumyojit Panda | AE-2020-21-B | 92 | Final year |
| 8. | Kinjal Srivastava | AE-2020-12-B | 125 | Final year |
| 9. | Falguni Adhikary | AE-2021-10-B | 163 | Pre-final year |
| 10. | Paritosh Giri | AE-2021-18-B | 167 | Pre-final year |
| 11. | Snigdha Das | AE-2021-22-B | 171 | Pre-final year |
| 12. | Satyendranath Kar | AE-2021-20-B | 182 | Pre-final year |
| 13. | Hajikul Islam | AE-2021-11-B | 225 | Pre-final year |
| 14. | Souvik Das Bairagya | AE-2020-22-B | 279 | Final year |
| 15. | Rahul Mandal | AE-2021-L-31-B | 286 | Pre-final year |
| 16. | Ritam Kar | AE-2020-16-B | 293 | Final year |
| 17. | Anukul Das | AE-2020-03-B | 404 | Final year |
| 18. | Tanmoy Barman | AE-2020-28-B | 466 | Final year |

### 3.2 Performance in Indian Council of Agricultural Research -Junior Research Fellowship (ICAR JRF)-2024 and Common Admission Test (CAT)

The students of Faculty of Technology have showcased remarkable dedication and commitment towards academic excellence during the academic year 2023–2024. A significant number of students appeared for prestigious competitive examinations such as the Indian Council of Agricultural Research (ICAR) Junior Research Fellowship (JRF) and the Common Admission Test (CAT), demonstrating their aspiration to pursue higher studies and professional growth which is tabulated in Table 3.2

Table 3.2 Results of ICAR-JRF and CAT.

| Sl. No. | Name of student | Registration No. | Name of examination | Rank/Percentile* |
|---|---|---|---|---|
| 1. | Tuheena Thakur | AE-2020-29-B | ICAR JRF-2024 | 398 |
| 2. | Rajarshi Chakraborty | AE-2020-15-B | ICAR JRF-2024 | 183 |
| 3. | Niloy Das | AE-2020-13-B | ICAR JRF-2024 | 423 |
| 4. | Ritam Kar | AE-2020-16-B | CAT-2023 | 76.73* |

### 3.3 Student Placement

The Placement Cell of Uttar Banga Krishi Viswavidyalaya (UBKV) plays a pivotal role in facilitating job opportunities for the students of the Faculty of Technology through a well-organized and transparent process. The cell acts as a bridge between students and potential employers, ensuring that students are guided and supported at every stage of their career journey. The placement process involves identifying and reaching out to potential companies, maintaining effective communication, and organizing recruitment drives on campus. Students are encouraged to apply to organizations based on their specialization and career interests, while the placement cell manages the entire application and selection process to ensure fairness and transparency.

During the academic year 2023–2024, several reputed organizations participated in the recruitment drives, offering opportunities to final-year students. Table 3.3 furnishes the list of final-year students from the Faculty of Technology who have been successfully selected for job placements. The university remains committed to enhancing the employability skills of students through dedicated training programs, workshops, and industry collaborations, ensuring that they are well-prepared to meet the demands of the professional world.

Table 3.3 List of students selected for job in 2024.

| Sl. No. | Name of student | Registration No. | Name of Company/NGO/Bank |
|---|---|---|---|
| 1. | Arya Adhikary | AE-2020-5-B | PRADAN, New Delhi, India |
| 2. | Dipankar Sarkar | AE-2020-10-B | Prasari, Rajarhat, West Bengal |
| 3. | Kinjal Srivastava | AE-2020-12-B | IDBI Bank Ltd. |
| 4. | Subhadip Shaw | AE-2020-23-B | Prasari, Rajarhat, West Bengal |
| 5. | Subhamoy Singha | AE-2020-24-B | IDBI Bank Ltd. |
| 6. | Tanmoy Barman | AE-2020-28-B | IDBI Bank Ltd. |

### 3.4 Cultural/Sports activities

Beyond academics, our students have actively participated in cultural, sports, literary, and social programs, both within and outside the campus. Their involvement in inter-college festivals, debates, seminars, workshops, and community outreach initiatives reflects their versatile talents and leadership qualities. These platforms not only enhance their confidence but also foster teamwork, creativity, and social responsibility. The details are given in Table 3.4

Table 3.4 The details of student's participation in various programmes

| Sl. No. | Name | Programme | Level of Participation | Details of Programme | Venue |
|---|---|---|---|---|---|
| 1. | Priti Das AE-2023-15-B | Javelin throw | University Annual Sports | 2nd Position January, 2024 | UBKV |
| 2. | Tapas Sen AE-2023-27-B | Photography Contest | Intra-University | 1st Position 2024, February | UBKV |
| | | Debate Competition | Intra-University | Participated 2024, March | UBKV |

| | | | | | |
|---|---|---|---|---|---|
| 3. | Srijani Basu<br>AE-2023-25-B | Bollywood Night | Intra-University | Participated, March, 2024 | Social, UBKV |
| 4 | Sahanur Alam<br>AE-2023-22-B | UPL | Intra-University | Man of the match, 2024 | UBKV |
| 5 | Soumyadip Das<br>AE-2022-24-B | Essay competition, NSS cell, UBKV | Intra-University | 3rd position,<br>2024 | Swami Vivekananda Auditorium, UBKV |
| | | Quiz competition | Intra-University | Participated, 2024 | Swami Vivekananda Auditorium, UBKV |
| 7 | Subrajyoti Das<br>AE-2022-26-B | Indoor games,<br>Carrom single and double | Intra-University | 1st position,<br>15th August, 2023 | PCM HALL,<br>UBKV |

The university takes immense pride in the accomplishments of its students and remains dedicated to providing continuous support, mentorship, and opportunities to help them excel in every sphere of life.

### 3.5 Scholarships, stipends and fellowships

Several scholarships, stipends, and fellowships are available at Uttar Banga Krishi Viswavidyalaya to support deserving students. Generally, at least 60% of the total enrolled students in each term are awarded the *University Merit Scholarship* based on their academic performance.

For availing benefits such as the University Free Studentship, West Bengal Full Free-ship, and West Bengal Half Free-ship, students are required to submit a valid annual family income certificate.

A minimum Grade Point Average (GPA) of 6.5 is mandatory to be eligible for any scholarship offered under the Faculty of Technology. The details of the available scholarships, along with their eligibility criteria, are presented in Table 3.2.

Table 3.5 Details of Scholarships given to the students for year 2024

| Year | Name of the Scholarship | Number of Students Benefitted |
|---|---|---|
| 2024 | University Free Studentship | 00 |
| | West Bengal Full Free ship | 01 |
| | West Bengal Half Free ship | 00 |
| | University Merit Scholarship | 18 |
| | University Sr. Merit Scholarship | 02 |
| | Oasis | 01 |
| | Student Credit Card Scheme | 01 |
| | MCM-M | 00 |
| | Student Credit Card Scheme-Loan and Oasis | 01 |
| | SVMCM-M | 12 |

### 3.6 Undergraduate projects

As part of the curriculum, project planning and the preparation of a project report are mandatory requirements for the award of the B.Tech. degree. These projects enable students to integrate theoretical knowledge with practical applications, thereby enhancing their technical skills and problem-solving abilities.

The B.Tech. projects in Agricultural Engineering are designed to apply engineering principles to address real-world challenges in agriculture and food production. Project topics typically cover a wide spectrum, including: Design and development of innovative farm machinery and equipment; Optimization of irrigation systems and efficient water management techniques; Advancements in food processing technologies; Implementation of sustainable agricultural practices and many more. These projects often involve hands-on fabrication, experimentation, testing, and research, fostering creativity and innovation among students.

The detailed list of project reports, including their titles, project guides, and names of the students, is presented in Table 3.5.

Table 3.6 Details of projects completed in 2024

| Sl. No. | Project Guide | Name of the Student | Project Title |
|---|---|---|---|
| 1. | Subinay Saha Roy, PhD | Abu Bakkar Siddik<br>Sabir Hossain<br>Sujoy Chandra Majumder<br>Soma Barman<br>Sk Najim | A Review on Furrow Irrigation |
| 2. | Himadri Shekhar Konar, PhD | Anindita Roy<br>Arnab Sarkar | A Study of Microwave Drying of Banana Slices |
| | | Bibaswan Bhattacharya<br>Tanmoy Barman | Standardization of Processing Parameters for Soybean Seed flour Preparation |
| 3. | Om Prakah Chaturvedi, PhD | Subhamoy Singha<br>Arya Adhikary<br>Prasanta Shit<br>Niloy Das | Feasibility Study of Bio-char Production from Different Biomass |
| 4. | Er. Kingshuk Roy | Anukul Das<br>Kinjal Srivastava<br>Souvik Das Bairagya<br>Subhadip Shaw<br>Rahul Mandal | Performance Evaluation of Tractor Mounted Zero-Till Pneumatic Planter for Maize (ZEAMAYS) Seeds. |
| 5. | Bratati Chowdhury, PhD | Sangita Kundu<br>Sayantan Sarkar<br>Soumojit Panda<br>Swanadeep Khasnabis<br>Tuheena Thakur | Study the Effect of Differential Sowing on Seed Yield Attributes in Rapeseed- Mustard and Chickpea. |
| 6. | Er. Ritam Sarkar | Dipankar Sarkar<br>Rajarshi Chakraborty<br>Vaskar Kundu | Pesticide Recommendation using Convolutional neural Networks |
| | | Dipak Modak<br>Ritam Kar | Prediction of Mustard Harvest Readiness using Machine Learning. |

### 3.7 In Plant Trainings

The Faculty of Technology organizes two compulsory in-plant training programs of one-month duration each for B.Tech. students. These trainings are conducted at the end of the 4$^{th}$ Semester

and 6th Semester, with the objective of providing students practical exposure to modern and advanced agricultural machinery, equipment, and technologies.

For the academic year 2023–2024, as per the B.Tech. (Agricultural Engineering) curriculum:

- In-Plant Training–I was undertaken by the 4th Semester students at the Northern Region Farm Machinery Training and Testing Institute (NRFMTTI), Hisar-125001, Haryana.
- In-Plant Training–II was completed by the 6th Semester students at various reputed institutes and industries, including:

    1. Indian Council of Agricultural Research-National Institute of Natural Fibre Engineering and Technology (ICAR-NINFET), 12, Regent Park, Kolkata-700040, West Bengal, India.
    2. Indian Council of Agricultural Research-Indian Institute of Soil and Water Conservation, Research Centre (ICAR-IISWC), Sunabeda-763002, Koraput, Odisha
    3. Britania Industries Ltd., Kolkata Branch, 15 Taratola Road, Kolkata-700088

These training programs were successfully conducted before the commencement of the next academic session (2024–2025) and helped students gain hands-on experience, improve their technical competencies, and enhance their understanding of industry practices.

The detailed lists of successfully trained students are presented in Table 3.7 and Table 3.8, respectively.

Table 3.7 Details of In-Plant Training during the academic year 2023-24 for 4th Semester

| Sl. No. | Registration No. | Student's Name | Semester | Training allotted to | Duration |
|---|---|---|---|---|---|
| 01. | AE-2021-02-B | Achinta Mandi | 4th | Northern Region Farm Machinery Training and Testing Institute, tractor Nagar, Sirsa Road, Hisar (Haryana)-125001 | 01.05.2023 to 26.05.2023 |
| 02. | AE-2021-03-B | Animesh Bagli | | | |
| 03. | AE-2021-04-B | Bipasha Roy | | | |
| 04. | AE-2021-06-B | Debapriya Mandal | | | |
| 05. | AE-2021-07-B | Dhrubajyoti Barman | | | |
| 06. | AE-2021-08-B | Dhrubajyoti Dey | | | |
| 07. | AE-2021-09-B | Esha Parvin | | | |
| 08. | AE-2021-10-B | Falguni Adhikary | | | |
| 09. | AE-2021-11-B | Hajikul Islam | | | |
| 10. | AE-2021-12-B | Hemal Hembram | | | |
| 11. | AE-2021-13-B | Jahid Hasan | | | |
| 12. | AE-2021-14-B | Kuntal Pal | | | |
| 13. | AE-2021-15-B | Mana Roy | | | |

| | | | | | |
|---|---|---|---|---|---|
| 14. | AE-2021-16-B | Mohima Mondal | | | |
| 15. | AE-2021-17-B | Padmabati Kumar | | | |
| 16. | AE-2021-18-B | Paritosh Giri | | | |
| 17. | AE-2021-19-B | Sanway Jana | | | |
| 18. | AE- 2021-20-B | Satyendranath kar | | | |
| 19. | AE-2021-21-B | Sayani Biswas | | | |
| 20. | AE-2021-22-B | Snigdha Das | | | |
| 21. | AE-2021-23-B | Soumi Biswas | | | |
| 22. | AE-2021-25-B | Sourav Sahoo | | | |
| 23. | AE-2021-26-B | Souvik De | | | |
| 24. | AE-2021-27-B | Subhankar Barman | | | |
| 25. | AE-2021-28-B | Sudip Barman | | | |
| 26. | AE-2021-29-B | Ummi Moslemina Parvin | | | |
| 27. | AE-2021-30-B | Utsha Roy | | | |
| 28. | AE-2022-L-31-B | Dipak Basak | | | |
| 29. | AE-2022-L-32-B | Mainak Adhikary | | | |
| 30 | AE-2021-24-B | Souptik Mani | | | |

Table 3.8 Details of In-Plant Training during the academic year 2023-24 for 6th semester

| Sl. No. | Registration No. | Student's Name | Semester | Training allotted to | Duration |
|---|---|---|---|---|---|
| 01. | AE-2020-03-B | Anukul Das | 6th | ICAR-NINFET, 12, Regent Park, Kolkata-700040, West Bengal, India. | 01.05.2023 to 01.06.2023 |
| 02. | AE-2020-05-B | Arya Adhikary | | | |
| 03. | AE-2020-07-B | Bibaswan Bhattacharya | | | |
| 04. | AE-2020-09-B | Dipak Modak | | | |
| 05. | AE-2020-13-B | Niloy Das | | | |
| 06. | AE-2020-14-B | Prasanta Shit | | | |
| 07. | AE-2020-15-B | Rajarshi Chakraborty | | | |
| 08. | AE-2020-20-B | Sayantan Sarkar | | | |
| 09. | AE-2020-25-B | Sujoy Chandra Majumder | | | |
| 10. | AE-2020-30-B | Vaskar Kundu | | | |
| 11. | AE-2021-L-31-B | Rahul Mandal | | | |
| 12. | AE-2020-01-B | Abu Bakkar Siddik | | ICAR-IISWC, Research Centre, Sunabeda-763002, Dist-Koraput (Odisha) | 01.05.2023 to 31.05.2023 |
| 13. | AE-2020-02-B | Anindita Roy | | | |
| 14. | AE-2020-04-B | Arnab Sarkar | | | |
| 15. | AE-2020-10-B | Dipankar Sarkar | | | |
| 16. | AE-2020-12-B | Kinjal Srivastava | | | |
| 17. | AE-2020-17-B | Sabir Hossain | | | |
| 18. | AE-2020-18-B | Sangita Kundu | | | |
| 19. | AE-2020-22-B | Souvik Das Bairagya | | | |
| 20. | AE-2020-23-B | Subhadip Shaw | | | |
| 21. | AE-2020-24-B | Subhamoy Singha | | | |

| | | | | | |
|---|---|---|---|---|---|
| 22. | AE-2020-27-B | Swapnadeep Khasnabis | | | |
| 23. | AE-2020-28-B | Tanmoy Barman | | | |
| 24. | AE-2020-29-B | Tuheena Thakur | | | |
| 25. | AE-2021-L-34-B | Soma Barman | | | |
| 26. | AE-2021-L-35-B | Sk Najim | | | |
| 27. | AE-2020-16-B | Ritam Kar | | Britania Industries Ltd., Kolkata Branch, 15 Taratola Road, Kolkata-700088 | 04.05.2023 to 03.06.2023 |
| 28. | AE-2020-21-B | Soumojit Panda | | | |

# 4. RESEARCH AND EXTENSION ACTIVITY

## 4.0 Research projects

The Faculty of Technology at Uttar Banga Krishi Viswavidyalaya is actively engaged in a wide range of research projects aimed at promoting innovation, technological advancement, and sustainable agricultural practices. These projects focus on solving real-world problems and contributing to the development of modern solutions in agriculture, food processing, irrigation systems, farm mechanization, and environmental management.

The following section presents a brief overview of several ongoing research projects undertaken by the faculty members and research scholars of the Faculty of Technology. The details of the project titles, funding agencies, principal investigators, co-investigators, and duration are furnished below.

## 4.1 Project I

**Name:** Smart curricula delivery through virtual classrooms as Communication Linked Interface for Cultivating Knowledge and online courses (**Status- Completed)**

***Nodal Officer for the project (Principal Investigator):*** Prof. Prodyut Kumar Paul, Ph. D.

**Faculties associated with this project**

Prof. K Pradhan, PhD; S Mondal, PhD, S. Ojha, PhD; Prof. N. Bhowmick, PhD; A. Khan, PhD; **Ashis Kumar Das, PhD; Om Prakash Chaturvedi, PhD;** S. Kundu, PhD; S. K. Das, PhD; Er. S. S. Roy

**Total Duration**: 6 (Six) years (2019-2024)

**Objectives**

i. Leverage the Intellectual excellence beyond boundaries of a classroom/ conference room through creating facilities of Virtual Classroom/Smart Classroom.

ii. To strengthen computer labs in each college for better access to curricula content delivered through smart classrooms to overcome the time and space constraints

iii. Capacity building of Faculty to improve their domain knowledge through National and International training

**Brief Concept**

The proposed intervention envisaged to maintain/promote academic excellence amongst students through the utilization of expertise available remotely. The knowledge integration of digital content, recorded lectures shall enrich students with cutting edge learning. The proposed hypothetical network is presented graphically.

In brief, the proposal shall enable the University to further raise its bar of Academic Excellence through the Quality Improvement Program.

**4.2 Project II**

**Name:** STI-HUB as a platform for socio-economic development of targeted schedule caste (SC) communities of Terai and Dooars Region of West Bengal. (**Status- Completed)**

***Name of Principal Investigator:*** Prof. Ashok Choudhury, PhD

Prof. Prabhat Kumar Pal, PhD; Prof. Prodyut Kumar Paul, PhD; Prof. Bidhan Roy, PhD; Prof. Nilesh Bhowmick, PhD; Nandita Sahana, PhD; Shovik Deb, PhD; Arpita Mandal Khan, PhD; Gobinda Mula, PhD; Surojit Khalko, PhD; Somnath Mandal, PhD; Anjali Sharma, PhD; **Himadri Shekhar Konar, PhD**

**Total Duration** (months): 36 months or 3 (Three) years (13.01.2021 to 12.01.2024)

**Budget required (in Rs): 3,83,84,720/-**

**Objectives**

- Need assessment of the community to understand their livelihood system, indigenous resources and knowledge capacity and aspiration
- Base line survey for assessment of natural resource endowment

- Introduction of high valued crops based on natural resource analysis, suitability to local market and farmers preference
- Production, packaging and value addition of niche crops
- Identification of non-farm enterprises based on natural resource and skill availability for further development
- Skill and entrepreneurship development

### 4.2 Project III

**Name:** Establishment of Farm Mechanization Workshop, Testing and Training Centre. (**Status-Ongoing)**

***Nodal Officer for the project:*** Prof. Ashok Choudhury, PhD.

**Name of Co-Investigator (s):** Prof. Ashok Choudhury, PhD.

**Om Prakash Chaturvedi, PhD; Er. Kingshuk Roy**, **Ashis Kumar das, PhD;** Prof. Biplab Mitra, PhD; Prof. Prateek Madhab Bhattacharjee, PhD; Mrigendra Ghosh, PhD

**Total Duration**: 5 (Five) years (2020-2025)

**Budget required (in Rs): 356.76 Lakhs**

**Objectives**

1. To create an appropriate infrastructure for training, demonstration and awareness center on different aspects of farm mechanization.
2. To introduce awareness of modern farm mechanization system and to support in establishment of Farm Mechanization hub and Agri-entrepreneurs
3. To stop hiring external operators of Farm machines and produce resources within the state employing rural youths.
4. To enhance productivity of major crops by timely sowing and harvesting by reducing dependency of availability of labor.
5. Generating awareness in large scale about modern farm mechanization
6. To established a farm machinery testing unit

7. To assist Bureau of Indian Standards in formulation of standards for testing of agricultural machines

**Brief Concept**

The intended approach was to deliver skilled and trained human resource in large number in different level (operation, use, repair, maintenance, promotion, agri-preneure and Mechanization hub) in multiplier effect reducing the down time of machinery and ultimately giving less risked, cost effective and highly productive agriculture and farm income. This center will also serve to test various farm machineries as per the BIS codes.

### 4.3 Project IV

**Name:** Empowering Scheduled Caste (sc) community farmers/rural youth of Coochbehar district, West Bengal through adoption ofgrafting technology in vegetable cultivation for employment generation and livelihood upliftment**.** (**Status- Ongoing)**

***Nodal Officer for the project:*** Prof. Ashok Choudhury, PhD.

***Name of Principal Investigator:*** Prof. Ranjit Chatterjee, PhD.

***Name of Co-Investigator (s)***

Arindam Das, PhD; **Bratati Chowdhury, PhD;** Nipa Biswas, PhD; Surojit Khalko, PhD; Prahlad Sarkar, PhD

**Total Duration** (months): 36 months or 3 (Three) years (2024-2026)

**Budget required (in Rs):** Rs. 21.725 lakh

**Objectives**

- To develop skill of SC community farmers, local youth and women on production of grafted seedling of brinjal and tomato through capacity building programme.
- To promote large cultivation of grafted brinjal and tomato in the district and to minimize the use of harmful pesticides in brinjal and tomato for managing soil

borne disease and nematode.

- To uplift overall rural livelihood, entrepreneurship development and women empowerment through remunerative grafted vegetable seedling production and cultivation in rural areas.

# 5. DETAILS ABOUT FACULTY

## 5.0 Details of Faculty

The Faculty of Technology at Uttar Banga Krishi Viswavidyalaya comprises a team of highly qualified, experienced, and dedicated teachers who contribute significantly to the academic, research, and extension activities of the university. The faculty members play a vital role in imparting quality education, guiding research, and mentoring students to excel in their respective fields. During the academic year 2023–2024, the faculty members have made notable contributions in various academic and professional domains, including: Publications: Several research papers, review articles, and technical notes have been published in reputed national and international journals, reflecting the faculty's active involvement in cutting-edge research. The faculty has successfully organized various seminars, symposia, conferences, workshops, training programs, and internships, providing a platform for knowledge exchange, skill enhancement, and collaborative learning. Through active participation in research projects, consultancy work, and academic collaborations, the faculty members continuously strive to upgrade their expertise while fostering student growth.

## 5.1 Faculty(s)

The details of the teachers available in the Faculty of Technology for the academic year 2023–2024 who have conducted classes are provided in Table 5.1**.** This table includes information such as the name of the faculty members, designation, specialization, and other relevant details**.**

Table 5.1 Details of Faculty member with designation and specialization.

| Sl. No. | Name | Designation | Specialization | Contact address |
|---|---|---|---|---|
| 1. | Ashis Kumar Das, Ph D | Dean (Acting) & Associate Professor | Electrical Engineering | Faculty of Technology, UBKV, P.O. Pundibari, Dist-Cooch Behar, Pin-736165, West Bengal |

| | | | | |
|---|---|---|---|---|
| 2. | Rupak Sarkar, Ph D | Professor | Soil and Water Conservation Engineering | RRS Terai Zone, UBKV |
| 3. | Subinay Saha Roy, Ph D | Associate Professor | Civil Engineering | Faculty of Technology, UBKV, P.O. Pundibari, Dist-Cooch Behar, Pin-736165, West Bengal |
| 4 | Himadri Shekher Konar, Ph D | Assistant Professor | Processing and Food Engineering | -DO- |
| 5. | Om Prakash Chaturvedi, Ph D | Assistant Professor | Farm Machinery and Power | -DO- |
| 6. | Er. Kingshuk Roy | Assistant Professor | Farm Machinery and Power | -DO- |
| 7. | Bratati Chowdhury, Ph D | Assistant Professor | Soil and Water Conservation | -DO- |
| 8. | Er. Ritam Sarkar | Assistant Professor | Computer Science and Engineering | -DO- |
| 9. | Ashutosh Dutta, Ph D | Guest Lecturer | Engineering Chemistry | -DO- |
| 10. | Mr. Subhrajyoti Roy | Guest Lecturer | English | -DO- |
| 11. | Mr. Abhishek Paul | Guest Lecturer | Engineering Physics | -DO- |
| 12. | Mr. Pratap Basak | Guest Lecturer | Engineering Mathematics | -DO- |
| 13. | Mr. Subhendu Bhattacharjee | Guest Lecturer | Mechanical Engineering | -DO- |

## 5.2 Publications

Key highlights of the faculty's publication achievements include:

- ✓ Research Papers: Published in peer-reviewed national and international journals of high impact.
- ✓ Conference Proceedings: Presented papers at various seminars, symposia, and conferences, fostering collaboration and knowledge exchange.

A detailed list of publications, including titles, authors, journal names, volumes, and years of publication, are given in Section 5.2.1; 5.2.2 and 5.2.3

### 5.2.1 Research articles

Kumar P, **Ashis Kumar Das**, Halder S **(2023).** Statistical heart rate variability analysis for healthy person: Influence of gender and body posture, *Journal of Electrocardiology*, 79, 81-88, ISSN 0022-0736. https://doi.org/10.1016/j.jelectrocard.2023.03.011.

Kumar, P, Ranjan, V, **Ashis Kumar Das. (2023)** Statistical Heart Rate Variability of Capacitive Electrocardiogram Signal Using UnoViS Database. *SN Computer Science*, 4(5), 583. https://doi.org/10.1007/s42979-023-02021-7

**Ashis Kumar Das**, Kumar P, Halder S, Metia, S (**2023**)**.** A Statistical Approach for Investigation and Comparison of Fatigue and Drowsiness based on Complexity Parameters of EOGs, *International Journal of Image, Graphics and Signal Processing (IJIGSP)*, 15 (5), 39-59. https://doi.org/10.5815/ijigsp.2023.05.04

Bisht DS, **Bratati Chowdhury**; Rawat, SS, Pottakkal, JG **(2024).** Performance Ranking of Global Precipitation Estimates over Data Scarce Western Himalayan Region of India. *Theoretical and Applied Climatology*, 155 (8), 7515–7537. https://doi.org/10.1007/s00704-024-05069-4

Maity P, Roy D, **Bratati Chowdhury**, Chakraborty B, Anand N, Roy B, Choudhury A, Biswas N., Karmakar K. **(2024),** Biopriming with EPS-producing bacteria of sub-Himalayan-soil origin recovers the cold-induced vigor loss in seedlings. *Indian Journal of Microbiology*, https://doi.org/10.1007/s12088-024-01342-2.

**Arindam Mandal**, Sarkar S, Chakravarty A, Mukhopadhyay A **(2024).** Flame stabilization and formation of flame street in a H2/Air non-premixed micro-combustor with a bluff body. *International Journal of Hydrogen Energy***;** 58: 1149-1159. https://doi.org/10.1016/j.ijhydene.2024.01.333

**Ritam Sarkar**, Saha PK, Mondal S, Mondal A. **(2024).** MAGE: Microgrids with advanced grid efficiency through battery-aware EV management. *Sustainable Cities and Society*, 107, 105399. https://doi.org/10.1016/j.scs.2024.105399

### 5.2.2 Conference paper

**Ashis Kumar Das**, Kumar P, Halder, S **(2023).** Complexity Analysis of Ocular Signal for Detection of Human Fatigue Using Small Datasets, Procedia Computer Science**,** Volume 218, Pages 858-866, ISSN 1877-0509. https://doi.org/10.1016/j.procs.2023.01.066.

**Arindam Mandal**, Sarkar S, Mukhopadhyay A. Combustion Behaviour Investigation in Co-flow and Cross-flow Hydrogen-Air Microcombustors: A comparative study". 2nd International Conference on Mechanical Engineering, INCOM2024. 05-06 January, 2024. Organized by Jadavpur University.

Das A, Chatterjee R, **Bratati Chowdhury** and Biswas N (2024). Advancement in grafting: Exploring molecular interactions and epigenetic mechanisms for enhanced crop resilience. 7th International Symposium on Minor Fruits, Medicinal & Aromatic Plants. *organized by* Department of Horticulture & Postharvest Technology Institute of Agriculture (Palli Siksha Bhavana), Visva-Bharati Sriniketan, West Bengal, India on November, 22-23, page no 14.

Biswas N, Chatterjee N, Das A, and **Bratati Chowdhury (2024).** Status, scope and limitations of using Turkey berry (*Solanum torvum*) as rootstock for grafted brinjal (*Solanum melongena* L.) production. 7th International Symposium on Minor Fruits, Medicinal & Aromatic Plants *organized by* Department of Horticulture & Postharvest Technology Institute of Agriculture (Palli Siksha Bhavana), Visva-Bharati Sriniketan, West Bengal, India on November, 22-23, page no 15.

### 5.2.3 Published Monograph / booklet / leaflet / bulletin etc.

Table 5.2 Published Booklet/Leaflet/Bulletin

| Sl. No. | Author(s) | Name of the publication | Total page no. | Sponsored by |
|---|---|---|---|---|
| 1. | Chatterjee R, Das A, **Bratati Chowdhury** and Biswas N | Grafted seedling production method of Tomato and Brinjal (টমেটো এবং বেগুনের গ্রাফটিং বা কলমের ছাড়া তৈরির পদ্ধতি) | 4 | ICAR SC-SP Project |
| 2. | Chatterjee R, Das A, **Bratati Chowdhury** and Biswas N | Improved cultivation methods for grafting or grafting seedlings of brinjal and tomato (বেগুন এবং টমেটোর গ্রাফটিং বা কলমের চারার উন্নত চাষ পদ্ধতি) | 4 | ICAR SC-SP Project |
| **3.** | Chatterjee R, Das A, **Bratati Chowdhury**, Biswas N, Khalko S, and Sarkar P | The overall production, quality of brinjal and tomato increases by using twin-stem seedlings and also prevents bacterial wilt and rootworm attacks (**বেগুন ও টমেটো চাষে জোড়কলমের** | 25 | ICAR SC-SP Project |

| | | | | |
|---|---|---|---|---|
| | | চারা (Grafted Seedling) ব্যবহারের মাধ্যমে ফসলের উৎপাদন, গুণগত মান বৃদ্ধি এবং ব্যাকটেরিয়াজনিত ধসা রোগ ও শেকড়ের কৃমির আক্রমনের প্রতিরোধ) | | |

### 5.3 Act as Reviewer of Journals

The faculty members actively contribute to the academic and research community by serving as reviewers for reputed national and international journals. Their role as reviewers reflects their expertise, recognition, and credibility in the field of agricultural engineering, food technology, irrigation systems, and allied disciplines.

By critically evaluating manuscripts, providing constructive feedback, and ensuring the quality and integrity of scholarly publications, the faculty members help maintain high academic standards and promote research excellence. Their involvement as reviewers also enhances the visibility and reputation of the university in the global research community.

A detailed list of faculty members who have served as reviewers, along with the names of the journals, are presented in Table 5.3.

Table 5.3: Reviewer of Journals

| Name of Faculty | Name of Journal | Name of Publisher |
|---|---|---|
| Subinay Saha Roy, PhD | Geotechnical and Geological Engineering | Springer Nature |
| | Advances in Civil Engineering | Hindawi Limited. |
| | International Journal of Geomechanics (04 Nos.) | American Society of Civil Engineers (ASCE) |
| | Indian Geotechnical Journal (Two Nos.) | Springer Nature |
| Bratati Chowdhury, PhD | International Journal of Climatology | John Wiley & Sons, Ltd. |
| | Pure and Applied Geophysics | Springer Nature |

### 5.4 Organizing Seminar/Symposium/Conference/Workshop/Training/Internship

The Faculty of Technology is committed to providing students and faculty with opportunities for knowledge enhancement, skill development, and professional growth. During the academic year 2023–2024, the faculty members actively organized various seminars, symposia, conferences,

workshops, training programs, and internship initiatives aimed at fostering academic excellence and industry exposure.

These events served as platforms for knowledge exchange between researchers, academicians, industry experts, and students. They not only enriched the learning environment but also encouraged innovation, collaboration, and capacity building.

*Key highlights include:*

- ✓ Seminars & Symposia: Organized interactive sessions on emerging trends and technologies in agricultural engineering and allied fields.
- ✓ Workshops: Conducted hands-on training sessions to enhance practical knowledge and technical skills of students.
- ✓ Training Programs: Designed short-term training modules to bridge the gap between academic learning and industry requirements.
- ✓ Internship Opportunities: Coordinated internship programs with leading research institutes, industries, and organizations to provide students with real-world exposure and industry readiness.

A comprehensive list of the seminars, symposia, workshops, training programs, and internships organized during the academic session is provided in Table 5.4.

Table 5.4: Organized Seminar/Symposium/Conference/Workshop/Training/Internship

| Name of Faculty | Name of the event | Organized/ Sponsored by | Venue | Duration & Date | Responsibility |
|---|---|---|---|---|---|
| Om Prakash Chaturvedi, PhD | "Farm Mechanization" under Scheduled Caste Sub Plan (SC-SP - 2023-24) | UBKV | Faculty of Technology, UBKV | One Month<br>27th February - 26th March, 2024 | Act as a Coordinator |
| Bratati Chowdhury, PhD | Scope and opportunities in Government Job | CDC, UBKV | UBKV Main Campus, Pundibari, Coochbehar | One day<br>15th July, 2023 | Act as a Coordinator |
| | Employability Skill Training (Mahindra Pride Classroom) for final year UG and PG students (Girls only) | CDC, UBKV | UBKV Main Campus, Pundibari, Coochbehar | Six days<br>09th to 14th October, 2023 | Act as a Coordinator |

## 5.5 Act as Resource person in Training/Meeting/Workshop/Interaction

The faculty members of the Faculty of Technology, have actively contributed to the wider academic and research community by serving as resource persons in various trainings, workshops, meetings, interactive sessions, and lecture programs organized by reputed external institutes and organizations.

A detailed list of faculty members serving as resource persons, along with the event details, is provided in Table 5.5.

Table 5.5: The list of resource persons along with program details

| Name of Faculty | Name of the event and organizer | Title of the Training Program | Venue | Date |
|---|---|---|---|---|
| Himadri Shekhar Konar, PhD | UBKV, under ICAR SC-SP, 2023-24 | Scope of entrepreneurship development through goat, poultry and pig farming in sub-Himalayan terai zone. | UBKV | 18th march, 2024 |
| Er. Kingshuk Roy | KVK, Jalpaiguri | Scope and Importance of Farm Mechanization | FMWTTC | 29th Nov, 2023 |
| Bratati Chowdhury, PhD | Farm Mechanization under SC-SP Plan 2023-2024 | Practical Exposure on the Irrigation System and Pumps | F/Tech, UBKV | 13th March, 2024 |
| | "Hi-tech Agriculture and internet of things for the Board of Directors of different FPO's" sponsored by BIRD, NABARD, Kolkata | Efficient Water Management Techniques- understanding water use efficiency, drip irrigation, sprinkler irrigation, rain gun irrigation, raised bed Technology, etc. | Coochbehar KVK | 18th March, 2024 |

## 5.6 Deliberation of lecture at external Institute /Programme

During the academic year 2023–2024, faculty members were invited to deliver expert lectures, conduct technical sessions, and participate in interactive knowledge-sharing programs at both national and regional levels. Their involvement as resource persons reflects their expertise, leadership, and professional recognition in the fields of agricultural engineering. These contributions not only enhance the visibility and reputation of the university but also foster academic collaboration and industry-academia linkages.

A detailed list of faculty members serving as resource persons, along with the event details, host institutions, and lecture topics, is provided in Table 5.6.

Table 5.6: The details of faculty member serving as resource persons

| Name of Faculty | Name of the Program | Title of the lecture delivered | Organizer | Date |
|---|---|---|---|---|
| Bratati Chowdhury, PhD | **Risk Analysis Modelling** for Multi-institutional joint Master's program namely MSc. (Agriculture Analytics) | Modelling of the spatial-temporal variations of the hydroclimatic extremes | College of Agricultural Engineering and Technology, Anand Agricultural University, Gujarat in collaboration with Dhirubhai Ambani Institute of Information technology (DAIIT) Gandhinagar and Indian Institute of Remote Sensing (IIRS) Dehradun | 3 Nov, 2023 |
| | | Extreme distributions parameters using Maximum Likelihood and L-Moments | | 3 Nov, 2023 |
| | | Hydrometric & statistical analysis of hydrologic data | | 17 Nov, 2023 |
| | | Water balance- Surface water, groundwater and their interaction | | 28 Nov, 2023 |

## 5.7 Training/refreshers course attended by Professor

The faculty members of the Faculty of Technology, continuously strive to upgrade their knowledge and skills to keep pace with the latest developments in agricultural engineering, and allied disciplines. During the academic year 2023–2024, several professors and faculty members attended various trainings, refresher courses, orientation programs, and faculty development programs organized by reputed national and international institutes.

*These programs focused on:*

- ✓ Emerging technologies in agricultural engineering and food processing
- ✓ Sustainable agricultural practices and environmental management
- ✓ Advancements in irrigation, farm mechanization, and renewable energy
- ✓ Pedagogical techniques and innovations in teaching-learning methods
- ✓ Research methodologies and data analytics for agricultural sciences

Participation in these programs enables faculty members to enhance their subject expertise, improve teaching and research competencies, and integrate modern techniques into classroom and field-based learning. The details of the trainings and refresher courses attended by professors, along with the event titles, organizing institutions, and duration, are provided in Table 5.7

Table 5.7: The details of the trainings/ refresher courses attended by professors

| Name of the Professor | Name of the Program | Venue | Duration | Funding Agency (ICAR/ Others) |
|---|---|---|---|---|
| Subinay Saha Roy, PhD | Advances in Rock Engineering Organized by: IGS Aurangabad Chapter | Online | Five Days<br>21st Aug. to 25th Aug., 2023 | Self-sponsored |
| Himadri Shekhar Konar, PhD | 3rd Biotic Science Congress, 2023 And International Conference on "Advancement in Plant Health Research - Retrospect & Prospect" | Visva Bharati, Santiniketan, West Bengal | Two days<br>7-8th December, 2023 | Society for Biotic & Environmental Research (SBER), Tripura |
| Bratati Chowdhury, PhD | Winter School on "Advanced forecasting techniques in Agriculture Science Research" | ICAR- Indian Agricultural Statistics Research Institute, New Delhi, India | Twenty-one days<br>24th January to 13th February, 2024 | Sponsored by ICAR-IASRI |

## 5.8 Workshop / Seminar / Conference / Symposia / Scientific meet etc. attended by the Professor

The faculty members actively participated in various workshops, seminars, conferences, symposia, and scientific meets during the academic year 2023–2024**.** Their participation reflects a strong commitment to academic excellence**,** continuous professional development**,** and knowledge exchange within the scientific community.

By attending these academic and scientific events, the professors not only enrich their knowledge base but also contribute to strengthening the research and academic ecosystem of the university.

A detailed list of workshops, seminars, conferences, symposia, and scientific meets attended by professors, along with the event titles, dates, and organizing institutions, is presented in Table 5.8**.**

Table 5.8: The detailed list of workshops, seminars, conferences, symposia, and scientific meets attended by professors

| Name of Faculty | Name of Topic | Venue | Duration | National/ International | Funding Agency (ICAR/ Others) |
|---|---|---|---|---|---|
| Himadri Shekhar Konar, PhD | 3rd Biotic Science Congress, 2023 And International Conference on "Advancement in Plant Health Research - Retrospect & Prospect" | Visva Bharati, Santiniketan | Two days. 7-8th December, 2023 | International | Society for Biotic & Environmental Research (SBER), TRIPURA |
| Bratati Chowdhury, PhD | Changing Precipitation-Flood-Precipitation Coupled Cycle in North East Reg. | Indian Institute of Technology Guwahati, Guwahati, Assam (online) | One day 5th September, 2023 | National | Self-sponsored |
| Er. Arindam Mandal | Combustion Behaviour Investigation in Co-flow and Cross-flow Hydrogen-Air Microcombustors: A comparative study | Jadavpur University, West Bengal | Two days: 05-06 January, 2024 | 2nd International Conference on Mechanical Engineering, INCOM 2024 | Self-sponsored |

## 5.9 Act as External Examiner/Paper Setter/Moderator/Evaluation of Answer Script

Faculty members were invited by reputed universities, academic institutions, and examination boards to act as: Paper Setters – for designing question papers for undergraduate and postgraduate examinations of other institutions.

These roles highlight the expertise, academic credibility, and professional recognition of the faculty members at national and regional levels. Such contributions also strengthen academic collaborations and enhance the reputation of the university.

A detailed list of faculty members, along with the nature of responsibilities, institutions served, and examination details, is provided in Table 5.9

Table 5.9: A detailed list of faculty members, along with the nature of responsibilities

| Name of Teacher | Name of Course | Type of Work done | Type of External Institute |
|---|---|---|---|
| Ashis Kumar Das, PhD | Electrical Machine and Power Utilization, Applied Electronics and Instrumentation | End Term Paper Setter for **B. Tech**. in Agril. Engg. | A State Agricultural University, India |
| Er Kingshuk Roy | Advances in farm machinery and power engineering | End Term paper setter for **B. Tech**. in Agril. Engg. | Private University, India |
| | Computer aided design and manufacturing | End Term paper setter for **B. Tech**. in Agril. Engg. | |
| | Tractor control systems design | End Term paper setter for **B. Tech**. in Agril. Engg. | |
| Bratati Chowdhury, PhD | Groundwater, Wells and Pumps | End Term Paper Setter for **B. Tech**. in Agril. Engg. | A State Agricultural University, India |
| | Soil and Water Conservation Engineering | End Term Paper Setter for **B. Sc. in Agriculture** | |
| | Soil and Water Systems Simulation and Modelling | Comprehensive written Exam for **PhD** in (Agril. Engg.) | |
| | Modelling Soil Erosion Processes and Sedimentation | Comprehensive written Exam, **PhD** (Agril. Engg.), 2023-24 | |

## 5.10 Member of Academic Societies

The faculty members are actively associated with various national and international academic societies, professional bodies, and research organizations. These memberships enable faculty members to stay updated with the latest developments, innovations, and research trends in their respective fields while also contributing to the growth of the broader academic community.

*Through their association with these societies, faculty members:*

- ✓ Collaborate with leading scientists, academicians, and professionals at the national and global levels.
- ✓ Access advanced knowledge, publications, and resources to support cutting-edge teaching and research.
- ✓ Participate in scientific discussions, policy frameworks, and knowledge-sharing platforms.
- ✓ Enhance the reputation of the university by representing it at prestigious academic forums.

The details of the faculty members, along with the academic societies they are associated with, are presented in Table 5.10.

Table 5.10 The details of the faculty members, along with the academic societies

| Faculty | Association |
|---|---|
| Ashis Kumar Das, PhD | *Life Member, Institution of Engineers*. 8 Gokhale Road, West Bengal, Kolkata-700020 |
| | *Life Member, Indian Society for Technical Education (ISTE),* New Delhi, India |
| | *Life Member, Cooch Behar Association for Cultivation of Agricultural Sciences (COBACAS),* Coochbehar, West Bengal. |
| | *Life Member, International Association of Engineers (IAENG),* Hong Kong, China. |
| Subinay Saha Roy, PhD | *Life Member*, *Indian Geotechnical Society*; 206, Manisha Building, 75-76, Nehru Place, New Delhi - 110 019, India |
| | *Life Member, Institution of Engineers*. 8 Gokhale Road, West Bengal, Kolkata-700020 |
| Himadri Shekhar Konar, PhD | *Life Member, Indian Society of Agricultural Engineers,* G-4, National Societies Block (Ground floor), National Agricultural Science Centre Complex, Dev Prakash Shastri Marg, Pusa Campus, New Delhi -110012 |
| | *Life Member, Coochbehar Association for Cultivation of Agricultural Sciences (COBACAS)*, UBKV, Coochbehar, West Bengal-736101 |
| Om Prakash Chaturvedi, PhD | *Life Member, Indian Society of Agricultural Engineers*, G-4, National Societies Block (Ground floor), National Agricultural Science Centre Complex, Dev Prakash Shastri Marg, Pusa Campus, New Delhi -110012 |
| | *Life Member, Coochbehar Association for Cultivation of Agricultural Sciences (COBACAS)*, UBKV, Coochbehar, West Bengal-736101 |
| Bratati Chowdhury, PhD | *Life Member, Indian Society of Agricultural Engineers*, G-4, National Societies Block (Ground floor), National Agricultural Science Centre Complex, Dev Prakash Shastri Marg, Pusa Campus, New Delhi -110012 |
| Er. Arindam Mandal | *Life Member, Coochbehar Association for Cultivation of Agricultural Sciences (COBACAS)*, UBKV, Coochbehar, West Bengal-736101 |

## 5.11 Member of the Advisory Committee (Faculty/Department)

The faculty members actively contribute their expertise and professional insights by serving as members of various advisory committees at national, regional, and university levels. Their involvement reflects the academic credibility, leadership, and recognition of the faculty in shaping policies, research directions, and institutional strategies.

*Through their participation, faculty members:*

- ✓ Provide expert guidance in policy formulation, curriculum development, and academic planning.
- ✓ Contribute to research and innovation frameworks at various institutions and organizations.
- ✓ Strengthen collaborative linkages between the university, research institutes, and industry partners.
- ✓ Enhance the visibility and reputation of the university at broader academic and professional platforms.

A detailed list of faculty members, along with the names of the advisory committees and the respective faculty/department, is provided in Table 5.11.

Table 5.11: The detailed list of faculty members, along with the names of the advisory committees

| Name of Faculty | Name of the student | Degree program | Department/ Faculty | Title of thesis | Chairman / Member of Advisory Committee | Status |
|---|---|---|---|---|---|---|
| Himadri Shekhar Konar, PhD | Akash Biswas | PhD | Agricultural Economics, Faculty of Agriculture, UBKV | An economic study on milk-based value chain system in Terai district of West Bengal | Member | Pursuing |
| | Miss. Sweta Malakar | PhD | Pomology and Post Harvest Technology, Faculty of Horticulture, UBKV | Standardization of Low Glycemic Index Composite Flour for Preparation of Cookies | Member | Pursuing |
| | Miss. Sanasam Angousana | PhD | Pomology and Post Harvest Technology, Faculty of Horticulture, UBKV | Standardization of harvesting time and process optimization of post-harvest treatments and different drying conditions for optimization of quality and storability of paprika (Capsicum annum L) | Member | Pursuing |

| | | | | | | |
|---|---|---|---|---|---|---|
| Bratati Chowdhury, PhD | Upasana Nanda (A-2023-050-M) | MSc | Soil Science and Agricultural Chemistry, Faculty of Agriculture, UBKV | Seed vigor recovery by indigenous soil-dwelling bacteria to overcome cold stress in Spermosphere | Member | Pursuing |
| | Tumma Jahnavi (A-2023-032-M) | MSc | Seed Science and Technology, Faculty of Agriculture, UBKV | Studies on Seed yield potential and quality attributes of Indian Mustard under differential sowing dates in Tarai region, West Bengal | Member | Pursuing |

## 5.12 Members of different Committees / Additional Assignment / Additional responsibility

The faculty members of the Faculty of Technology have actively contributed to the smooth functioning and overall development of the university by serving as members of various statutory and non-statutory committees and undertaking additional assignments and responsibilities during the academic year 2023–2024.

Their involvement in these roles ensures effective administration, academic planning, quality enhancement, and institutional governance. These additional roles and contributions highlight the dedication, leadership, and commitment of the faculty towards achieving the vision and mission of the university. A detailed list of faculty members, along with the committees served and the nature of additional assignments and responsibilities, is presented in Table 5.12.

Table 5.12: The detailed list of faculty members, along with the committees served

| Name of Teacher | Name of Committee / Assignment /Additional Responsibility | Position |
|---|---|---|
| Ashis Kumar Das, PhD | Member of different Academic, Administrative and Student-Centric Committees | Dean (Actg.), F/Tech., UBKV |
| Subinay Saha Roy, PhD | Intellectual Properties and Technology Management (IPTM) Cell (UBKV) | Member |
| Om Prakash Chaturvedi, PhD | Experiential Learning Programme on Engineering Technologies | Managing Director |
| | Departmental Purchase Committee (F.Tech) | Member |
| | Training and Placement Cell committee (UBKV) | Member |
| | Anti-Ragging Committee (UBKV) | Member |
| | Scrap Disposal Committee (UBKV) | Member |
| | Faculty Management Committee (F/Tech.) | Member |

| | | |
|---|---|---|
| | Computer and Network Management Committee (UBKV) | Member |
| Er. Arindam Mandal | On Study Leave | |
| Himadri Sekhar Konar, PhD | Library advisory committee | Member |
| | Training and Placement officer of F/ Tech | TPO |
| | Faculty Management Committee, F/Tech | Member |
| | Training and Placement Cell committee (UBKV) | Member |
| | Departmental Purchase Committee, F/Tech | Member |
| Bratati Chowdhury, PhD | Central Admission Committee (CAC), UBKV for UG admission for B.Sc. (Hons.) Agriculture, B.Sc. (Hons.) Horticulture and B. Tech. Agril. Engineering Courses | Member |
| | Tutorial Program on Career Counselling and personality Development under SC-SP (ICAR) | Organizing Committee Member |
| | National Agricultural Education Day Celebration | Organizing Committee Member |
| | Training and Placement Cell, Faculty of Technology, UBKV | Member |
| | Nodal Officer of Scholarship Portal for Faculty of Technology, UBKV | Member |
| | Departmental Purchase Committee for Faculty of Technology, UBKV. | Member |
| | Annual report Preparation of the for Faculty of Technology, UBKV | Member |
| | Accreditation and compilation of Self Study Report for Faculty of Technology, UBKV | Member |
| | Anti-Ragging Squad, UBKV, | Member |
| | Cultural Advisory Committee, UVKV | Member |
| | Uttaran, Cultural Committee | Member |
| Er. Ritam Sarkar | Central Admission Committee for WBJEE | Member |
| | Central Admission Committee for JELET | Member |
| | Day to day activity and extension of approval process of AICTE | Member |
| | National Service Scheme | Program officer, F/Tech |
| Er. Kingshuk Roy | Act as a PI Admin for WBJEE | PI Admin |
| | Act as a PI Admin for JELET | PI Admin |
| | Act as a Provost of APCR Hostel | Provost |
| | Anti-ragging squad of UBKV | Member |
| | Scrap Disposal Committee | Member |
| | Faculty Management Committee | Member |
| | Preparation of Self Study Report for Faculty of Technology for accreditation by ICAR committee | Member |
| | Examination Committee, UBKV | Member |
| | Preparation and Publication of annual report committee | Member |
| | Faculty Level Training and Placement Cell committee | Coordinator |
| | Central Admission Committee (CAC), Uttar Banga Krishi Viswavidyalaya for UG admission for B.Sc. (Hons.) Agriculture, B.Sc. (Hons.) Horticulture and B.Tech. Agril. Engineering Courses | Member |
| | Farm Machinery Testing and Training Centre, UBKV | Coordinator |

## 5.13 Research project (Externally funded) handled:

| Faculty name | Name of the project | Sponsored by | Year of commencement | Proposed year of completion | Total Amount (Rs.) | Capacity |
|---|---|---|---|---|---|---|
| Himadri Shekhar Konar, PhD | STI Hub as a Platform for socioeconomic Development of target Schedule Caste Communities of Terai and Dooars Regions of West Bengal | Department of Science and Technology, Govt. of India | 2021 | 2024 **(completed)** | Approx. 384 lakhs | Co-PI |
| Dr. Bratati Chowdhury | Studies on impact of long-term conservation agriculture practices on carbon sequestration in acid alluvial soils of West Bengal | Kosher Climate India Pvt. Ltd. | 2023 | 2026 **(ongoing)** | Approx. 22 lakhs | Co-PI |
| | Empowering Scheduled Caste (SC) community farmers/rural youth of Coochbehar district, West Bengal through adoption of grafting technology in vegetable cultivation for employment generation and livelihood upliftment | ICAR SC-SP | 2024 | 2027 **(ongoing)** | Approx. 21.00 lakhs | Co-PI |

## 5.13 Other information (s)

***Er. Ritam Sarkar*** had conducted the following events as an NSS Programming Officer (Member):

1. **"Swachhata Hi Seva" Event**: The Uttar Banga Krishi Viswavidyalaya, actively participated in the **"Swachhata Hi Seva"** campaign on 4th October 2023 as part of the nationwide cleanliness drive initiated by the Government of India. The event aimed to raise awareness about the importance of cleanliness, hygiene, and environmental sustainability, while encouraging students and staff to contribute towards a clean and green campus. During the campaign:
   - ✓ Faculty members, students, and non-teaching staff participated enthusiastically in cleanliness drives conducted within the university premises and surrounding areas.
   - ✓ Awareness activities were organized to emphasize the significance of proper waste management and sustainable practices.

- ✓ Students were encouraged to adopt eco-friendly habits and act as ambassadors of cleanliness in their communities.

The event successfully fostered a sense of social responsibility and reinforced the vision of creating a cleaner, healthier, and sustainable environment.

2. **Blood Donation camp:** The Uttar Banga Krishi Viswavidyalaya, organized a Blood Donation Camp on 15th March 2024 in collaboration with a recognized medical organization/blood bank. The initiative was undertaken to promote social responsibility, community service, and humanitarian values among students, faculty, and staff members. The event witnessed active participation from students, teaching and non-teaching staff, and volunteers, who came forward to donate blood for a noble cause.
3. **Voting Awareness Camp:** The Uttar Banga Krishi Viswavidyalaya organized a Voting Awareness Camp under the theme *"Voice of the Village: Empowering Democracy through Voting Awareness"* to sensitize students and local communities about the importance of active participation in the democratic process at village Khatalbari, P.O.- Pundibari, Block- Cooch Behar II, District- Cooch Behar, West Bengal, Pin- 736165, from 15$^{th}$ March 2024 to 21$^{st}$ March 2024.

   The program aimed to educate and empower rural citizens, encouraging them to exercise their right to vote responsibly and effectively. Students, faculty members, and staff actively participated in the campaign to promote the message of inclusive democracy and responsible citizenship.

# 6. PERSONNEL

## 6.0 Personnel

**Table:** Details of Non-teaching Staffs attached to the Faculty of Technology

| Sl. No. | Name | Designation | Contact Address |
|---|---|---|---|
| **1.** | **Mr. Santanu Dasgupta** | Sr. Stenographer | Faculty of Technology, UBKV, P.O. Pundibari, Dist-Cooch Behar, Pin-736165, West Bengal |
| **2.** | **Mr. Samik Das** | Technical Assistant | -Do- |
| **3.** | **Mr. Samar Sutradhar** | Jr. Storekeeper | -Do- |
| **4.** | **Mr. Jahar Kumar Rahut** | Mechanic | -Do- |
| **5.** | **Mr. Pradip Barman** | Mechanic | -Do- |
| **6.** | **Mr. Swarup Dutta** | Jr. Fitter | -Do- |
| **7.** | **Mr. Jibes Sarkar** | Jr. Laboratory Attendant | -Do- |
| **8.** | **Mr. Chandan Sarkar** | Sr. Peon | -Do- |

# PHOTO GALLERY


**Educational tour for the final year students to ICAR Central Institute for Women in Agriculture, Odisha (2023-24)**


**Farmers' Training Program on Farm Mechanization under Scheduled Caste Sub Plan-2023-24.**


**Certificate and Award Distribution of UBKV Marathon 2024, at UBKV**


**Certificate and Prize Distribution of UBKV Premiere League**

**Arpan Kumar Karjee and Subrajyoti Das, B.Tech students in Agricultural Engineering, secured the top place in the Carrom Doubles Indoor Game at UBKV. Arpan Kumar Karjee and Arka Mondal claimed victory in the 400-meter Sprint at the UBKV Annual Sports. The events are depicted from left to right in the image.**




**NSS Unit III special camp held at village Khatalbari, P.O.- Pundibari, Block- Cooch Behar II, District- Cooch Behar, West Bengal, Pin- 736165, from 15th to 21st March 2024.**

**Tree Plantation drive by UBKV NSS Cell.**




**Arpan Kumar Karjee, a B.Tech student in Agricultural Engineering, delivered a remarkable performance at the UBKV Annual Sports. He secured first place in the Triple Jump and earned second place in both the Long Jump and the 200-meter Sprint. The events are depicted from left to right in the image.**


**A voluntary blood donation camp was organized by the UBKV NSS Cell on March 15th, in collaboration with the Blood Centre, M.J.N. Medical College & Hospital, Cooch Behar**