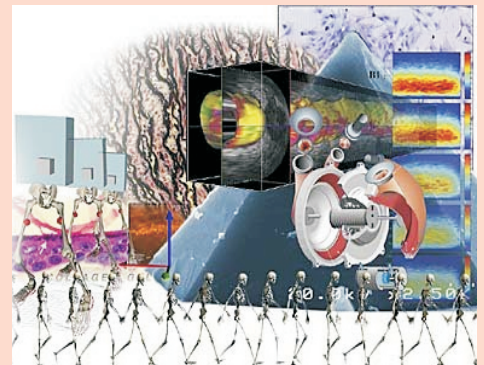


BIOMED NEWS

2023-2024



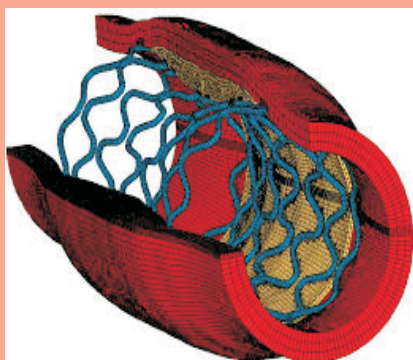
Volume-II

JANUARY TO JUNE -2024



Biomedical Engineering

***JIS COLLEGE OF ENGINEERING, KALYANI
(AN AUTONOMOUS INSTITUTE)***



EDITORS:

DR. KARABI GANGULY

MS. SUMANA BANERJEE

STUDENT COORDINATOR:

DIPTAYAN MUKHERJEE



Vision:

To foster excellence in Biomedical Engineering Education and Research at both undergraduate and postgraduate levels, by producing globally competitive professionals to serve the mankind and society.

Mission:

DM1: To provide graduates with the knowledge and abilities needed for their professional development in biomedical engineering.

DM2: To create a learning environment that promotes excellence, equipping future professionals with the skills and expertise necessary to thrive in the rapidly evolving landscape of medical technology.

DM3: To instill in Biomedical Engineering graduates a sense of professionalism, ethics, values, and a drive for innovation, responsibility, commitment, and leadership.

Programme Educational Objectives (PEOs):

PEO1: Graduates shall pursue advanced studies and have successful careers in diverse fields in Biomedical Engineering.

PEO2: Graduates will be able to recognize, evaluate, and resolve issues by innovative concept and up-to-date information to satisfy societal expectations.

PEO3: Graduates shall excel themselves in field of teaching, research and development with their in-depth knowledge and innovative minds.

PEO4: Graduates will be able to apply practical knowledge and skill for successful entrepreneurship.

PEO5: Graduates shall work as part of teams on interdisciplinary projects with the multifaceted aspects of using modern tools

Program Specific Outcomes (PSOs):

PSO1: Graduates will be able to design and develop indigenous medical devices that addresses the present societal healthcare problems by applying the concepts of Medical science, Engineering and Technology.

PSO2: Graduates shall use software expertise and information and communication technology (ICT) to innovate and resolve problems in the medical field.

PSO3: Graduates will be equipped with the skills and knowledge necessary to conduct research, use innovative medical technologies in a multidisciplinary setting with professionalism and ethics.

INDUSTRYCONNECTWEBINARONREQUIREMENT ENGINEERING FOR BME STUDENTS

Sl. No.	Name of Visitor/ Guest Speaker	Designation/ Occupation	Seminar/ Workshop/ Conference Topic	Total Participant	Date	Outcome
1	Mr. Narendra Singh	Principal Consultant, Medical Device, Capgemini	session on Requirement Engineering: QMS/QSR for pre final year BME students	21	15.03.2024	To prepare students for the corporate world that deals with the healthcare domain, the curriculum instilled in them an initial understanding of software technology in the creation of medical devices.

Narendra Singh
Principal Consultant - Medical Devices

Education & Employment

- BSc degree in Electronics & Telecommunication Engineering from Anna University
- Development of Class II/III Medical Devices
- Principal R&D from Indian Institute of Management, Lucknow
- Senior Design Engineer Engineering from Pune University

Qualifications

- Professional in development of IEC 60601-1:2012 Medical Devices including Safety, EMC, Biocompatibility, and Usability for Medical Devices
- ISO 13485, ISO 14971, 21 CFR Part 820, QSR, 21 CFR part 11, IEC 62368, IEC 60601-1, and IEC 62368
- Experience in user needs elicitation, writing design inputs and product requirements, software requirements elaboration as user interface user views
- Apply software development using AHA TIR 45 guidelines for Medical Devices
- Experience on GMP Applications and GAMP 5 CSF

Professional experience summary

- Product Management of Internet of Medical Things Platform
- Full qualification and operationalization of Digital Health Platform for a leading Pharma company
- IoT of Digital Surgery Platform for Orthopedic Implants and Sutures (Class II)
- IoT of Electrophysiology Monitoring and 3D Mapping System (Class II)
- IoT of Hypertension Cardiac Ablation System (Class II)
- IoT of Endoscopy Visualization and Remote case management system (Class II)
- IoT of SCD / Resuscitation system for chronic pain management (Class II)
- IoT of Connected PneuMorphosis devices & Blood Management system (Class II)
- Requirement Engineering (Design Inputs) for Left Ventricular Assist Device (LVAD) Regenerative Device (II), Blood Cell Storage system (Class II), Drug Infusion Pump, CT Scan and MRI scan machines, Patient Engagement Apps...

Participants

- sanjiban santra (Unverified)
- Shatabhisa Paul (Unverified)
- Sheikh Rashel (Unverified)
- Shreshtha Roy (Unverified)
- sneha das (Unverified)
- Sohana Parvin (Unverified)
- SOUMIK MORE (Unverified)
- Souvaghya Hore (Unverified)

INDUSTRYCONNECTWEBINARONREQUIREMENT ENGINEERING (HIPAA) FOR BME STUDENTS

Sl. No.	Name of Visitor/ Guest Speaker	Designation/ Occupation	Seminar/ Workshop/ Conference Topic	Total Participant	Date	Outcome
1	Mr. Narendra Singh	Principal Consultant, Medical Device, Capgemini	Session on Requirement Engineering: Health Insurance Portability and Accountability Act (HIPAA) Compliance.	21	15.03.2024	To prepare students for the corporate world that deals with the healthcare domain, the curriculum instilled in them an initial understanding of software technology in the creation of medical devices.

Requirement Change Management

Change Request

Change Request is a formal request for a change in the system. It is initiated by the user or the system administrator. The request is then reviewed and approved by the Change Control Board (CCB). Once approved, the change is implemented and the system is updated.

Change Control Board (CCB)

The CCB is a group of people who are responsible for reviewing and approving changes to the system. They are typically composed of representatives from the user, the system administrator, and the development team.

Implementation

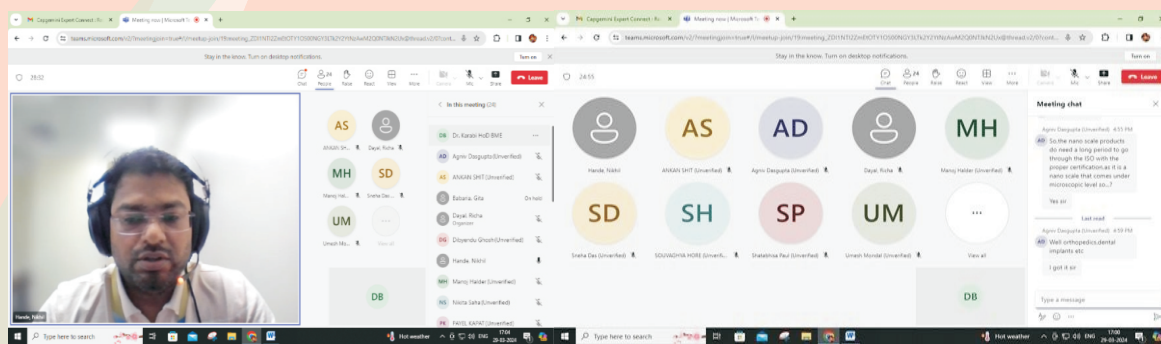
Once the change has been approved by the CCB, it is implemented. This involves making the necessary changes to the system and testing the system to ensure that the changes have been implemented correctly.

Participants

- DR. KARIM GANDEVI
- Agnes (Unverified)
- Ankur Rana (Unverified)
- Ankur Shrivastava (Unverified)
- Dayal Rishi (Unverified)
- Dhruv Ghosh (Unverified)
- Manish Mehta (Unverified)
- NCTI Sankar (Unverified)

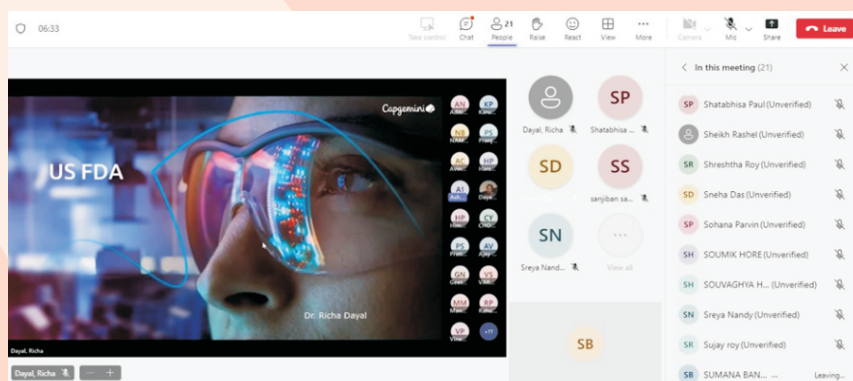
ONE-DAY INDUSTRY CONNECT & CARRIER GUIDANCE SESSION ON REQUIREMENT ENGINEERING IN BIOMEDICAL ENGINEERING

Sl. No.	Name of Visitor / Guest Speaker	Designation/ Occupation	Seminar/ Workshop/ Conference Topic	Total Participant	Date	Outcome
1	Mr. Nikhil Hande,	Manager, Capgemini.	Session on Requirement Engineering: Session 3.	28 (B. Tech. BME 3rd Year)	29.03.2024	Live interaction with participants to address questions and go over various aspects necessary for understanding and applying Requirement Engineering was the program's primary focus. Requirement engineering fundamentals were explained to students through a bidirectional flow of questions and knowledge that resulted from the program.



INDUSTRY CONNECT WEBINAR ON THE REGULATION AND STANDARDS IN MEDICAL DEVICE

Sl. No.	Name of Visitor / Guest Speaker	Designation/ Occupation	Seminar/ Workshop/ Conference Topic	Total Participant	Date	Outcome
1	Dr. Richa Dayal	Subject Exper SPOC-Medical & Healthcare Solution-Capgemini	Webinar: Capgemini Session DAY -1 on Regulation and Standards in Medical Device Orientation Program (as a part of the MOU execution activity)	28 (B. Tech. BME 3rd Year)	05.04.2024	As part of the MOU implementation activities, Capgemini is hosting a Brush Up Session on Regulations and Standards in Medical Devices to give attendees exposure to Clinical Engineering and Management.



ONE-DAY INDUSTRY CONNECT & WEBINAR ON THE MEDICAL DEVICE REGULATION WITH ADVANCED INSIGHTS INTO THE COMPLEX REGULATORY ENVIRONMENT

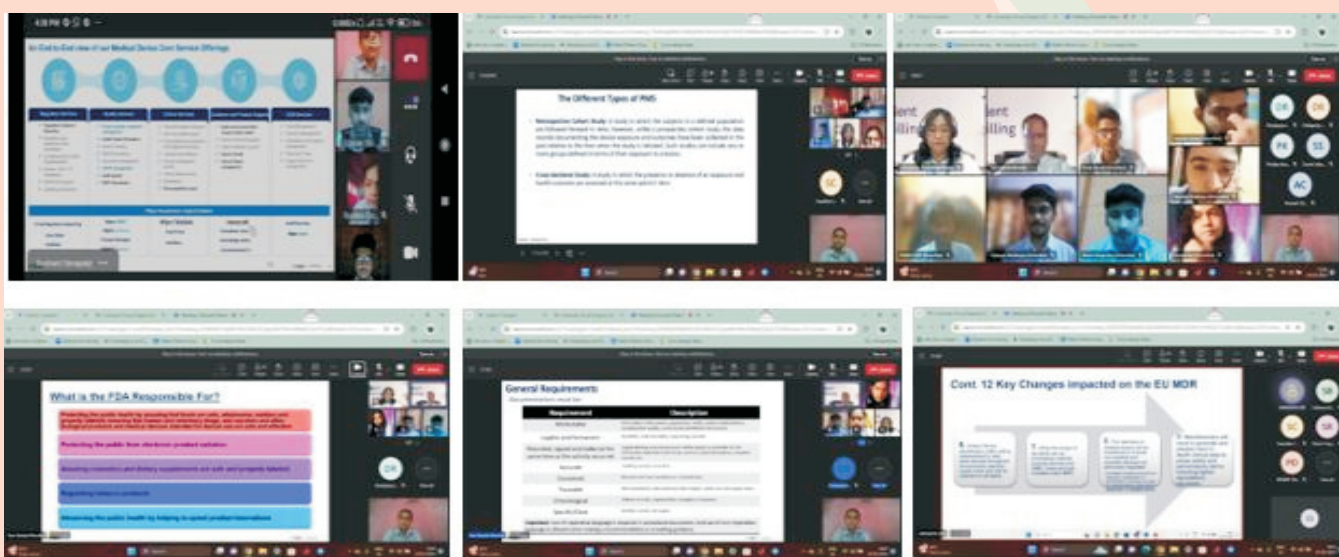
Sl. No.	Name of Visitor / Guest Speaker	Designation/ Occupation	Seminar/ Workshop/ Conference Topic	Total Participant	Date	Outcome
1	Dr. Richa Dayal	Subject Expert SPOC- Medical & Healthcare Solutoin- Capgemini	Webinar The Medical Device Regulations Session 3, with advanced insights into the complex regulatory environment surrounding medical devices.	28 (B. Tech. BME 3 rd Year)	03.05.2024	The session underscored the importance of staying informed about evolving regulations and adopting proactive approaches to regulatory compliance.

The webinar presentation covers the following topics:

- Importance of Software:** Emphasizes the critical role of software in medical devices and the need for rigorous safety and validation processes.
- Overview of IEC 62304:** Provides a high-level overview of the international standard for software lifecycle processes in medical devices.
- 5 processes involved in Life Cycle of a Software:**
 - Software Development Process
 - Software Maintenance Process
 - Software Risk Management Process
 - Software Configuration Management Process
 - Software Problem Resolution Process
- IEC 62304 - SOUP:** Discusses Software of Unknown Provenance (SUoP) and the challenges associated with integrating third-party software into medical devices.

ONE-DAY INDUSTRY CONNECT & WEBINAR ON THE MEDICAL DEVICE REGULATION WITH ADVANCED INSIGHTS INTO THE COMPLEX REGULATORY ENVIRONMENT

Sl No.	Name of Dept	Name of the Industry & Resource Person	Date of Visit	Organized by (Name & Designation)	Outcome
01	BME	WIPRO Online Training on Development of Medical Devices and Regulations"	20.5.24-31.5.2024	Initiated, Conducted & Coordinated by Dr. Karabi Ganguly (SPOC & HoD-BME, JISCE)	This program not only enhanced their technical knowledge but also provided valuable insights into regulatory compliance, preparing them for future roles in the medical device industry..



B.TECH BME STUDENTS IN SEMINAR ON CONVERGENCE OF WIDE SPECTRUM CAPABILITIES



BME Students presenting the different activities in front of judges and they winning the respective award (1st Prize) in the category of "Best innovative Theme" out of best selected institutional ideas.

Department of Biomedical Engineering, JISCE



Actively Participated in Event: “Computer vision techniques in utility Industry”, at JISCE



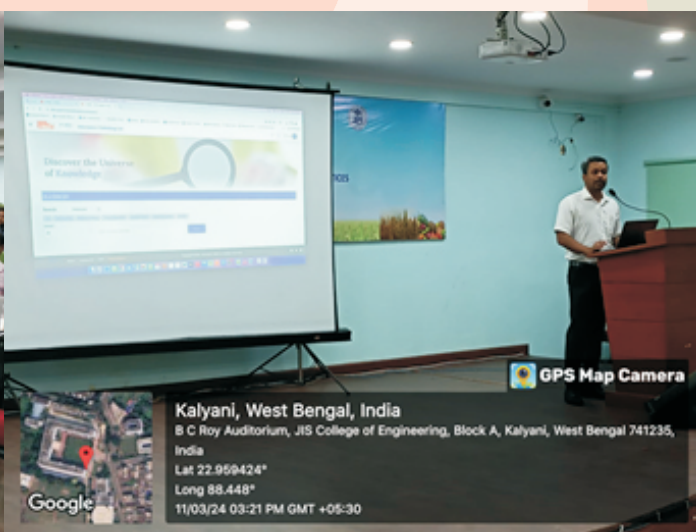
Actively Participated in National Science Day ,at JISCE



Actively Participated in Annual celebration of Mathematical constant (PI Day)at JISCE



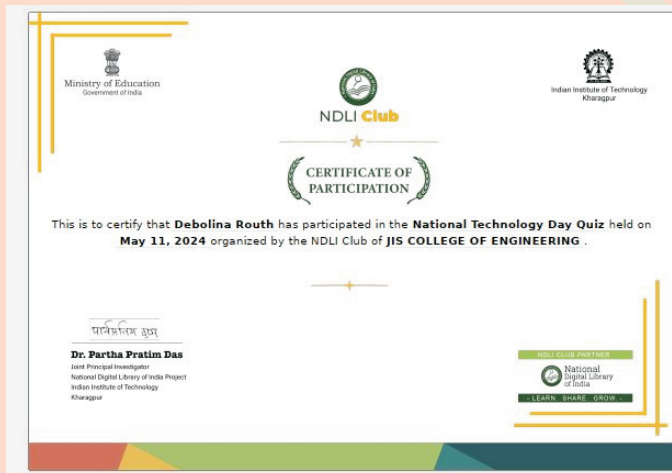
BME students actively participated in “Bosonto Utsob Program”



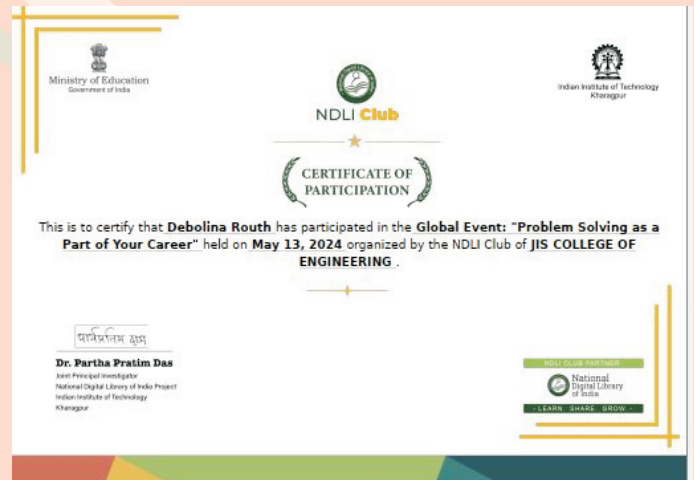
Actively Participated in J-GATE Training & Awareness program ,at JISCE

BMEACTIVITIES BYALUMNI

Student Achievement: -



Actively Participated Students of BME 1ST YEAR
in National Technology Day Quiz ,at JISCE



Actively Participated Students of BME 1ST YEAR in
Global Event: "Problem Solving as a Part of Your
Career", at JISCE

Achievement in INNOVATION EXHIBITION



PROJECT INNOVATION EXHIBITION -1ST PRIZE IN THE CATEGORY "BEST INNOVATIVE PROJECT"
OUT OF BEST INSTITUTIONAL PROJECTS



SWASTIKA CHATTERJEE Awarded in JIS INNOVATION AWARD 2024



BME STUDENTS ACTIVELY PARTICIPATED IN THE PROGRAM OF ENGINEERS CONNECT

Faculty Achievement

- **Dr. Karabi Ganguly-** Invited as Resource Person at DD BANGLA News Live Panel Discussion on JISCE Campus: Scope of Biomedical Engineering & Mechanical Engineering on 09.02.2024.
- **Dr. Karabi Ganguly-** SPOC & PROGRAMME COORDINATOR at JIS SPIRIT 2024 held on 16.01.2024.
- **Dr. Karabi Ganguly, Dr. Sandip Bag, Sumana Banerjee, Dr. Dibyendu Mandal, Ms. Sayanti Guha-** Successfully Participated in Nobel Laureate Lecture Science & Spirituality, Speaker: Prof. William D. Phillips held on 10.01.2024
- **Dr. Sandip Bag, Sumana Banerjee, Dr. Dibyendu Mandal-** Successfully completed 5 Days FDP on "PRESENT SCENARIO OF LIGHTNING SECTOR: INDUSTRY 4.0" held on 26.01.2024 to 02.02.2024.
- **Dr. Karabi Ganguly, Dr. Sandip Bag, Sumana Banerjee, Dr. Dibyendu Mandal-** Successfully completed NDLI club training program on Discover your Research potential with IEEE Explore on 01.08.2023
- **Dr. Karabi Ganguly, Dr. Sandip Bag, Sumana Banerjee, Dr. Dibyendu Mandal-** Successfully Organised One Day Science Camp. Girl Students of JNV Kalyani got exposure of various Physiological Parameter measurement and identification during Physiology & Materials Testing Lab visit in Science Camp at Dept. BME held on 10.01.2024.
- **Dr. Karabi Ganguly-** PROGRAM HOST and Coordinator of Seminar on Convergence of wide Spectrum Capabilities Yields Women-Srishti Shakti held on 07.03.2024 & 08.03.2024.
- **Sumana Banerjee** -Actively Participated in Seminar on Convergence of wide Spectrum Capabilities Yields Women-Srishti Shakti" held on 07.03.2024 & 08.03.2024.
- **Dr. Karabi Ganguly-** Awarded and got prize money in JIS INNOVATION AWARD 2024 for research activity and publication" held on 22.5.2024.
- **Dr. Sandip Bag** - Awarded and got prize money in JIS INNOVATION AWARD 2024 for research activity and publication" held on 22.5.2024.
- **Dr. Dibyendu Mandal** -Awarded and got prize money in JIS INNOVATION AWARD 2024 for research activity and publication" held on 22.5.2024.
- **Dr. Karabi Ganguly-** Invited talk as Resource Person at CN Calcutta News Live Panel Discussion on JISCE Campus: Uchcho Sikhkhar Sera Thikana held on 23.06.24.

Department of Biomedical Engineering, JISCE



Invited talk as Resource Person at DD Bangla Live Panel Discussion on JISCE Campus:
Scope & Carrier of Biomedical Engineering.



Invited talk as Resource Person at CN Calcutta News Live Panel Discussion on JISCE Campus :
Uchcho Shikhar Sera Thikana.

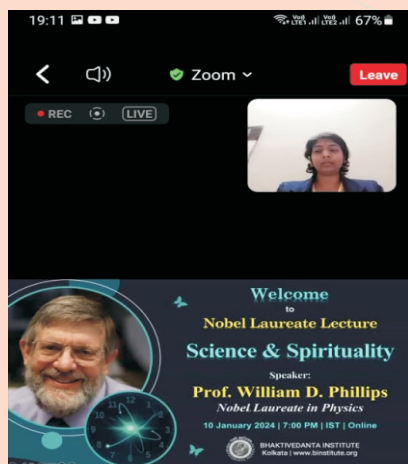


J-GATE Training & Awareness program

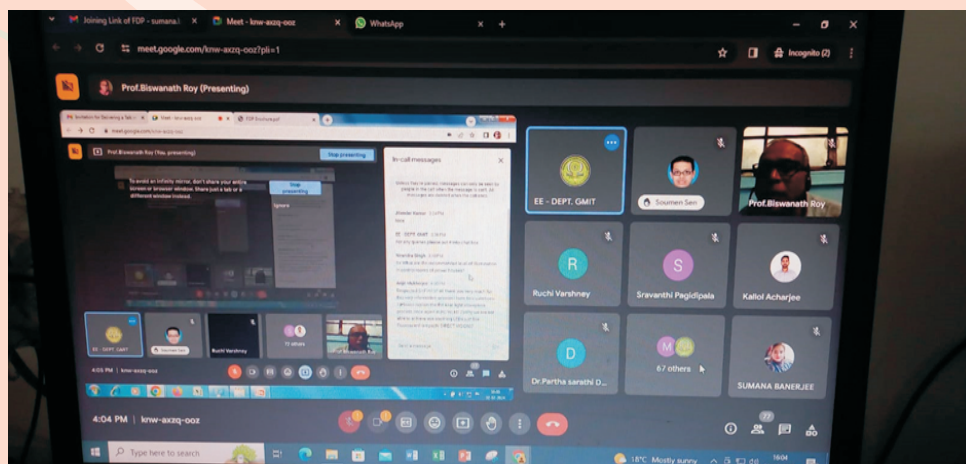


Seminar on Convergence of wide Spectrum Capabilities Yields Women-Srishti Shakti”

Department of Biomedical Engineering, JISCE



Nobel Laureate Lecture
Science & Spirituality,
Speaker: Prof. William D. Phillips.



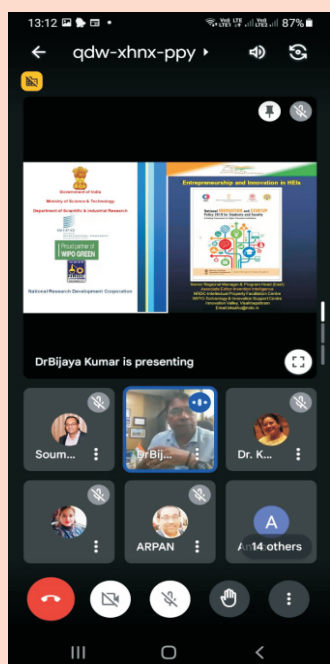
One Week FDP On Present Scenario Of Lightning Sector: Industry 4.0"



Dr. D.Mondal (AP-BME)) successfully completed 5 Days Faculty Development Program on "The Future of Generative AI IN Academic Research and Publishing.



Dr. Karabi Ganguly (HOD-BME) successfully completed 5 Days Faculty Development Program on "The Future of Generative AI IN Academic Research and Publishing.



Webinar on Entrepreneurship & Innovation

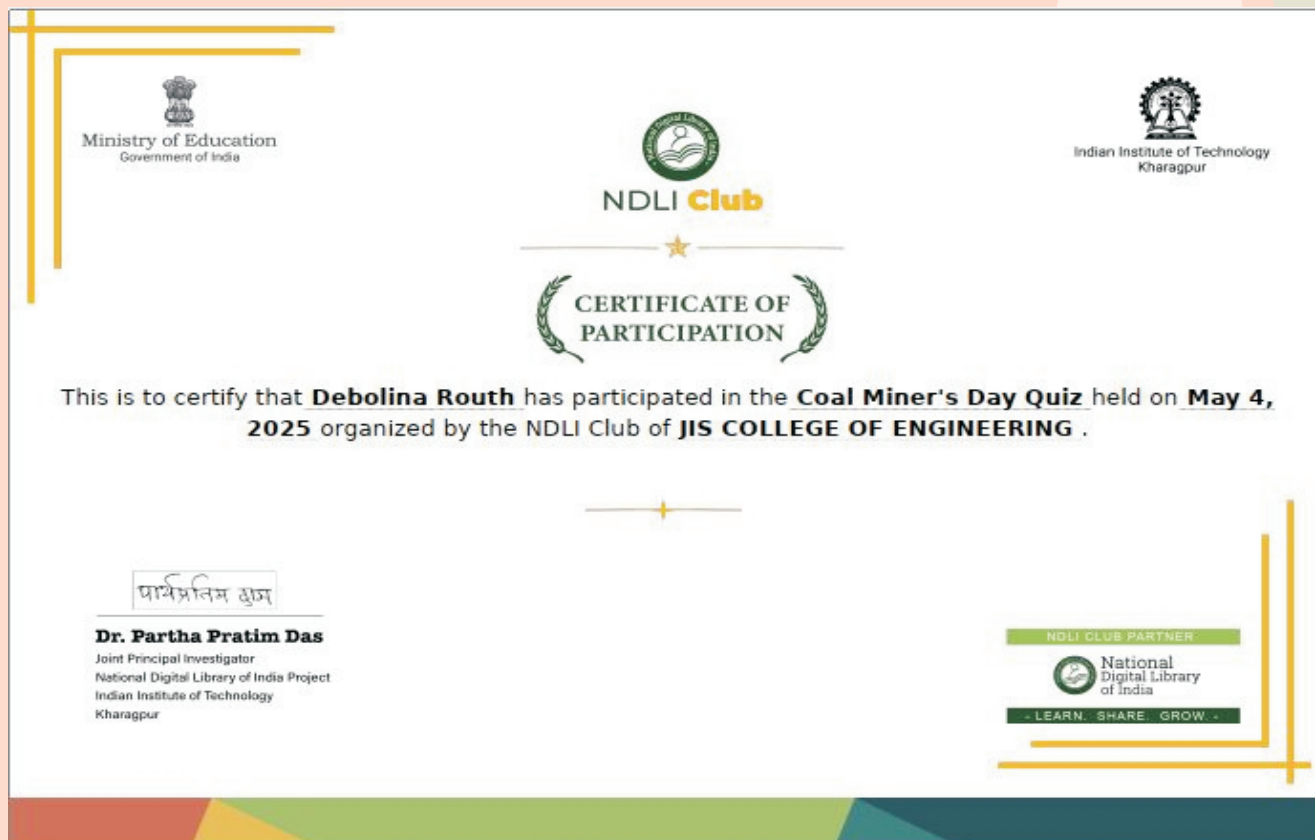


Vigyan – Jyoti DST-GOI, Girl Students of JNV Kalyani got exposure of various Physiological Parameter measurement and identification during Physiology & Materials Testing Lab visit in Science Camp at Dept. BME.

Student Achievement

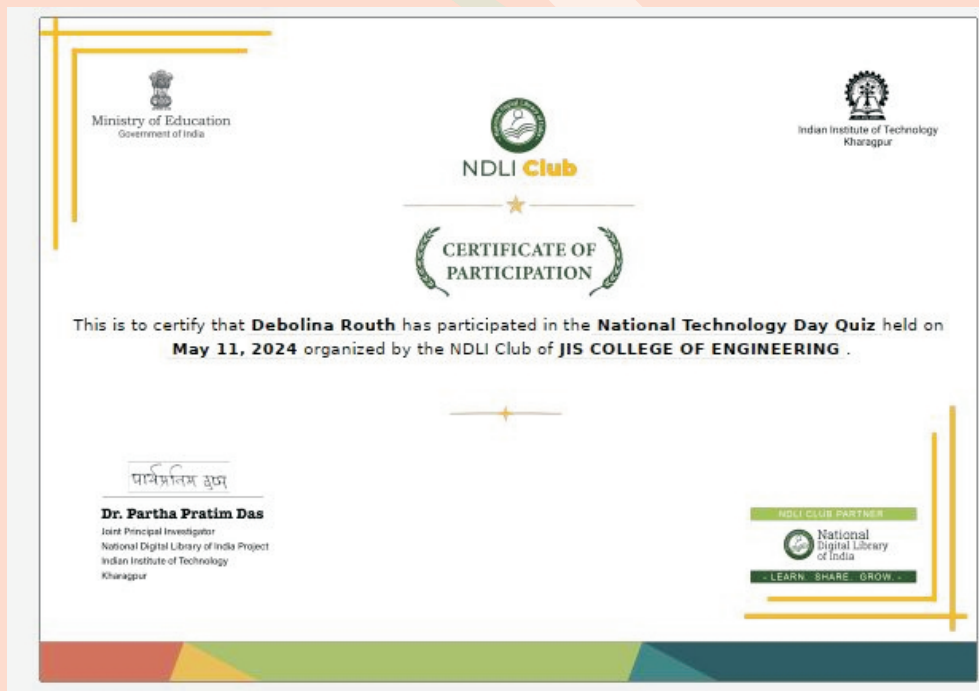
Sl.	Student Name	Year	Achievement	Venue/ Organizer/ Certifying Body	Date
20	DIPTAYAN MUKHERJEE	2024	BME 4 th students Awarded for best innovative project & get PRIZE in IDEA Competition at JISCE.	JISCE	27.02.2024
21	SWASTIKA CHATTERJEE	2024	Awarded in JIS INNOVATION AWARD 2024	JISCE	22.05.2024

Dept.	Students Name	Year	Achievement	Certifying Body	Date
BME	BME-1ST YEAR STUDENT	2024	Actively Participated in “Coal Miner's Day Quiz ,at JISCE	JIS GROUP	04.5.24

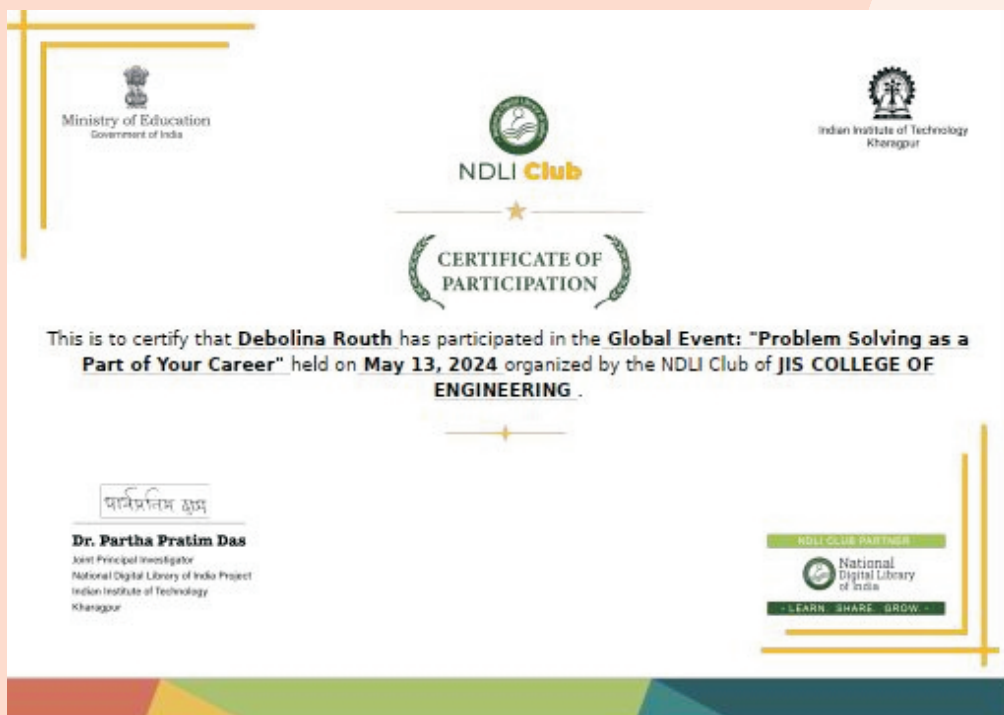


Department of Biomedical Engineering, JISCE

Dept.	Students Name	Year	Achievement	Certifying Body	Date
BME	BME-1ST YEAR STUDENT	2024	Actively Participated in National Technology Day Quiz, at JISCE	JIS GROUP	11.5.24



Dept.	Students Name	Year	Achievement	Certifying Body	Date
BME	BME-1ST YEAR STUDENT	2024	Actively Participated in Global Event: "Problem Solving as a Part of Your Career", at JISCE	JIS GROUP	13.5.24



Department of Biomedical Engineering, JISCE

Name of the Dept.	Name of the Student(s) & Semester	Achievement	YEAR	CERTIFYING BODY	DATE
BME	Anwita Ghosh	Successfully completed COURSERA COUSE	2 ND YEAR	COURSERA	March 2024
BME	Soumik Hore	Participation in Environment and lifestyle Quiz	3 RD YEAR	COURSERA	March 2024



Dept.	Students Name	Year	Achievement	Certifying Body	Date
BME	BME-1ST YEAR STUDENT	2024	ACTIVELY PARTICIPATED IN THE PROGRAM OF ENGINEERS CONNECT.	JIS GROUP	20.4.24



Student publication

Dept.	Students Name	Year	Achievement	Certifying Body	Date
BME	Swastika Chatterjee Diptayan Mukherjee Susmi Saha Avinash Charterjee Ritwik Sen	2024	Got their research work published in International Journal	Journal of Engineering and Technology Management	13.06.2024



Name of the Student(s) & Semester	Name of the faculty coordinator (if any)	Type of Publication (Journal/ Conference/ Abstract/ Proceedings/ Books /etc)	National/ International	Date of publication	ISSN/ ISBN No.	Whether peer reviewed, impact factor, if any
Sonali Sarkar Prodyut Sarkar Roshni Dey	Sumana Banerjee	Journal Paper (Journal of Emerging Technologies and Innovative Research)	International	24.05.2024	2349-5162	Peer Reviewed
Swastika Chatterjee Diptayan Mukherjee Susmi Saha Avinash Charterjee Ritwik Sen	Dr. Dibyendu Mondal Sumana Banerjee	Journal Paper (Journal of Emerging Technologies and Management)	International	13.06.2024	1879-1719	Peer Reviewed
Swastika Chatterjee	Dr.Karabi Ganguly	Journal Paper (Journal of Robotic Surgery)	International	17.01.2024	-	Peer Reviewed

Faculty involvement in Conference/Seminar/Workshop organized at JISCE, Kalyani

- **Dr.KarabiGanguly-** Invited as Resource Person at DD BANGLA News Live Panel Discussion on JISCE Campus: Scope of Biomedical Engineering & Mechanical Engineering on 09.02.2024.
- **Dr. Karabi Ganguly-** SPOC & PROGRAMME COORDINATOR at JIS SPIRIT 2024 held on 16.01.2024.
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- **Dr. Dibyendu Mandal -**Awarded and got prize money in JIS INNOVATION AWARD 2024 for research activity and publication”held on 22.5.2024.

Faculty Journal/Conference Papers

Sl. No.	Faculty Author(s)	Title of the Paper	Journal/Conference Name	National/ International	ISSN No.
1	Sandip Bag & Dibyendu Mandal	Revolutionizing Healthcare: The Role of Biosensors in Modern Medicine.	Journal of Engineering and Technology Management. Vol- 72; pp 2088-2097; June, 2024	International (SCOPUS)	1879-1719
2	Karabi Ganguly	Implementation of AI for Subsequent Gender Detection and Inclusive Approaches for Representation	Journal of Engineering and Technology Management. Vol- 72; pp 2078-2087; June, 2024	International (SCOPUS)	1879-1719
3	Sumana Banerjee & Dibyendu Mandal	EMG Signal Acquisition and Processing for Feature Extraction And Detection of Disease	Journal of Engineering and Technology Management. Vol- 72; pp 1637-1650; June, 2024	International (SCOPUS)	1879-1719
4	Sandip Bag	Integration of Heart Rate and SpO2 Monitoring in Wearable Health Technology	Journal of Engineering and Technology Management. Vol- 72; pp 1613-1618; June, 2024	International (SCOPUS)	1879-1719
5	Sumana Banerjee	Detection of Tumour and Its Properties from Thermal Image	Journal of Emerging Technologies and Innovative Research. Vol- 11(5); pp 1219-1227; May, 2024	International	2349-5162
6	Karabi Ganguly	A Machine Learning Approach for the Analysis of Human Emotions	Journal of Chemical Health Risks. Vol- 14(2); pp 2154-2164; April, 2024	International (SCOPUS)	2251-6727
7	Karabi Ganguly	Novel Strategies Towards Early Bone Cancer Detection: Matlab Integrated Image Processing Approach	Journal of Chemical Health Risks. Vol- 14(2); pp 12-19; March, 2024	International (SCOPUS)	2251-6727
8	Sumana Banerjee	Detecting Blood Vessels in Retinal Images using Gaussian Filter Derivatives	International Journal of Research and Analytical Reviews. Vol- 11(1); pp 876-879 March, 2024	International	2349-5138
9	Sumana Banerjee	Classification of Black Tea by QCM based Electronic Nose.	International Journal of Research and Analytical Reviews. Vol- 11(1); pp 866-869 March, 2024	International	2349-5138
10	Karabi Ganguly	Enhancing Lung Cancer Diagnosis with MATLAB and GLCM: A Robust Image Processing Approach.	TWIST International Multidisciplinary Journal. Vol - 19(1); pp 454-462; March, 2024	International (SCOPUS)	1759-0418
11	Sumana Banerjee	Detecting blood vessels in a retinal image using the entropic thresholding approach.	International Journal of Research and Analytical Reviews. Vol- 11(1); pp 873-876 February, 2024	International	2349-5138
12	Sumana Banerjee	Retinal image analysis is to identify blood vessels.	International Journal of Research and Analytical Reviews. Vol- 11(1); pp 790-795 February, 2024	International	2349-5138
13	Karabi Ganguly	Glycemic Stress Analysis and Wellness Monitoring.	International Journal of Innovative Research in Technology. Vol- 10(11), pp 1883-1886; April, 2024	International	2349-6002
14	Karabi Ganguly	Detection of Cancer Cells by Using Visible and IR Photo-Sensors through Image Processing Technique.	YMER Vol - 22(12); pp 1524 – 1535: January, 2024	International (SCOPUS)	0044-0477
15	Karabi Ganguly	Gastrointestinal Disorders: Identification, Detection, and Categorization Based on Deeply Cognitive Networks and Epiglodean Characteristics.	YMER Vol - 22(12); pp 1524 – 1535: January, 2024	International (SCOPUS)	0044-0477
16	Karabi Ganguly & Dibyendu Mandal	Advancements in robotic surgery: innovations, challenges and future prospects.	Journal of Robotic Surgery. Vol-18, pp 2 -11, January, 2024	International (SCOPUS)	1863-2491



Dr. Dibyendu Mandal: Awarded at JIS INNOVATION AWARD 2024 for research activity and publication



Dr. Karabi Ganguly: Awarded at INNOVATION AWARD 2024 for research activity and publication



Dr. Sandip Bag: Awarded at JIS INNOVATION AWARD 2024 for research activity and publication