

# Annual Report 2020-21



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# Annual Report 2020-21



December 8, 2021

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# Chapter 1

## Organization

### 1.1 Governing Body

Sl	Name	Designation
1.	Sardar Taranjit Singh	Chancellor, JIS University & Chairman of the Board
2.	Prof. Indranil Sengupta	Vice-Chancellor, JIS University
3.	Hon'ble Justice Pranab Kumar Chattopadhyay	Chairman, State Law Commission, W.B. and Former Judge, Calcutta High Court
4.	Prof. R. K. Shevgaonkar	Former Director, Indian Institute of Technology Delhi, Professor of Electrical Engineering, Indian Institute of Technology Bombay, and Former Vice-Chancellor, University of Pune
5.	Prof. Anupam Basu	Director, National Institute of Technology Durgapur
6.	Prof. Partha Pratim Das	Professor, Indian Institute of Technology Kharagpur
7.	Dr. Probal Sengupta	Chief Technology Officer, Alumnus Software Pvt. Ltd., Kolkata
8.	Ms. Nita Karmakar	Former Regional Director (E & NE), CII, Flat 4C, Tower 4, Active Acres, 54/10 D C Dey Road, Kolkata 700015

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<b>Sl</b>	<b>Name</b>	<b>Designation</b>
9.	Mr. K.D. Diwan	Former MD, Hindustan Copper Limited, Kolkata, and Joint Principal Investigator, National Digital Library of India
10.	Mr. Ram Bandyopadhyay	Former Secretary, Ministry of Corporate Affairs, Government of India
11.	Rev. Fr. Dr. John Felix Raj, SJ	Vice-Chancellor, St. Xavier's University, Kolkata
12.	Prof. Santwana Chowdhury	Mentor, JIS University
13.	Mr. Somnath Chatterjee	Sr. Vice President, Capgemini, India
14.	Prof. Ajoy Kr Ray	Director, JISIASR, JIS University
15.	Mr. Vishal Ghai	Secretary to Governing Body, Registrar, JIS University
16.	Mr. Simarpreet Singh	Director, JIS Group
17.	Mr. Amanjot Singh	Invited Member
18.	Mr. Anmul Singh Narula	Invited Member
19.	Mr. Harjot Singh	Invited Member
20.	Prof. (Dr.) R. R. Paul	Invited Member

## 1.2 Academic Council

Sl	Name	Designation
1.	Prof. Indranil Sengupta	Chairman and Vice-Chancellor, JIS University
2.	Prof. K. K. Chaudhury	Professor, Heritage School of Management
3.	Prof. Hafizur Rahaman	Professor, IEST Shibpur
4.	Mr. Anirban Chatterjee	Director, Protiviti India
5.	Mr. Indranil Sarker	Principal Consultant, TCS Ltd.
6.	Prof. T. K. Chatterjee	Dean, JIS University
7.	Prof. H. S. Maji	Convener & HOD, Pharmaceutical Technology
8.	Dr. Suman Lahiri	HOD, Business Management
9.	Dr. Atanu Kotal	HOD, Chemistry
10.	Dr. Souvik Chatterji	HOD, Juridical Sciences
11.	Dr. Manua Banerjee	HOD, Earth Sciences
12.	Dr. Mainak Mukhopadhyay	HOD, Biotechnology
13.	Prof. Rina Bhattacharya	HOD, Physics
14.	Prof. Swades R. Samanta	HOD, Education
15.	Prof. Saikat Maity	HOD, Computer Science and Engineering
16.	Prof. Aniruddha Das	Principal, GNIHM, Kolkata
17.	Dr. Chandranath Adak	JISIASR, Kolkata
18.	Dr. Prosenjit Saha	JISIASR, Kolkata
19.	Dr. Sujay Chattopadhyay	JISIASR, Kolkata
20.	Mr. Vishal Ghai	Registrar, JIS University

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<b>Sl</b>	<b>Name</b>	<b>Designation</b>
21.	Dr. Parimala Mani	Controller of Examinations
22.	Mr. Biswajit Das	HOD, Hospitality & Hotel Administration
23.	Mr. Sanjib Jana	PA to Vice-Chancellor

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### 1.3 Vice Chancellor Report

We are really happy to bring out this first annual report for JIS University, which will be published on a regular basis from now. All relevant information regarding the organizational structure, academic achievements by faculty members, and the status of student admissions shall be appearing in the annual report. We thankfully acknowledge the contributions of all the persons whose combined efforts have made the publication of this report possible.

Since its inception in 2015, JIS University has been moving steadily on a positive growth path that seemed to have accelerated in the last few months. The following infrastructural, manpower, administrative, and other notable developments have taken place during this time.

- a) Almost all the pending civil works in the JIS University building have been completed, with the creation of new classrooms and seminar rooms, two new auditoriums, new laboratories, faculty seating spaces, students' common rooms, and gymnasium, etc.
- b) New and updated versions of Academic Regulations and Ph. D. Regulations have been framed and approved by the appropriate bodies.
- c) A major effort has been put in to revise the curricula and syllabi of almost all the programmes running in the various Departments and Schools. More course choices have been provided to the students, like more number of electives, choosing courses from Swayam NPTEL basket, and so on. For some of the programmes like B.Tech. in Computer Science and Engineering, three different choices of specializations are being offered to the students from the 2020 batch onward.
- d) The First Convocation of JIS University was held on the 25th of March, 2021, which was presided over by the Governor of West Bengal, with Prof. K. K. Aggarwal, Chairman AICTE, as the Chief Guest. More than 1000 students received the awards either physically or in absentia.
- e) Faculty members with strong research foci have been recruited in various Departments and Schools, to promote the academic environment and also to reduce the dependency on visiting faculty members in running various courses.
- f) A team from UGC along with members from other accreditation bodies like AICTE, PCI, BCI and NCTE visited the University during April, 2021. The team visited the infrastructural facilities and interacted with all the stakeholders, and provided suggestions for further improvements in their report.

We are putting in our best efforts to strengthen the academic and research base of JIS University, and make it one of the best in the country. We are confident that it will very soon become a preferred destination for a large cross-section of students. With a dream to excel, let me take this opportunity to wish all the stakeholders of JIS University all the best.

(Indranil Sengupta)



# Chapter 2

## Part A: Departments

### Computer Science & Engineering

#### Head of Department

Prof. Saikat Maity

#### Programmes

1. B.Tech (4 year) with three specializations
  - a. AI and Machine Learning
  - b. Cyber Security
  - c. Embedded Systems and Robotics
2. BCA (3 year)
3. MCA (2 year)
4. PhD

#### Faculty members

##### *Professors*

##### **Name**

Prof. Indranil Sengupta  
(Vice-Chancellor)

Prof. Saikat Maity (Head)

##### *Associate Professors*

Dr. Kamalika Datta

Dr. Nilanjan Dey

##### *Assistant Professors*

Dr. Mainak Biswas

Dr. Abhoy Kole

Dr. Samir Dey

##### **Research Areas**

VLSI Design & Embedded Systems, Reversible & Quantum Computing, Information Security

Medical Image Processing, Fuzzy and Soft Computing, Software Engineering

VLSI & Embedded Systems, Nanoelectronics & Devices

Medical Image Processing, Machine Learning

Machine & Deep Learning, Similarity Measures

Reversible and Quantum computing

Multi-criteria Decision Making, Operations Research,

Engineering Optimization, Portfolio Optimization, Soft Computing, Fuzzy Optimization

Dr. Tapalina Banerjee	Microfluidic biochips, Memristors, and Image Processing
Mr. Sanjoy Chakraborty	Data Mining, Machine Learning & Quantum Computing
Mr. Subhadeep Satpathi	Data Science, Machine Learning
Ms. Sonali Bhowmik	VLSI

## Department Achievements

The School of Engineering, JIS University has started its journey in the year 2016 with several eminent professors. One of the key features of CSE department is the state-of-the-art research and laboratory facilities which include High-performance computing(HPC) and Param Shavak supercomputer. The department faculty are engaged to nurture the curious and innovative minds to explore the most exciting domains of computer science and technology in all stages of undergraduate, postgraduate and Ph. D. levels. The faculty and students often collaborate on projects, publish papers, collaborate with researchers from other colleges and departments across the campus. The CSE students are recruited by top companies and has high placement ratio. The Department of CSE mainly focuses to facilitate quality transformative education for quality of research and innovation in technology for meeting global challenges and also transform students into competent professionals to cater to the needs of the society under the leadership of Prof. Indranil Sengupta, Vice-Chancellor, JIS University. The department is also associated with National Cyber Security Standard(NCST). The department won ToyCathon 2020 in the digital category. One CSE student has been selected for Advanced IIC Brand Ambassadorship program under MHRD.

## Research Areas

AI, ML, Cognitive Science; Algorithms and Theory; Anomaly detection; Big Data Analytics; Bioinformatics; Biomedical instrumentation; CAD for VLSI & Embedded Systems; Cloud Computing; Complex and Social Networks; Computational Biology; Computational Data Science; Computer Graphics; Computer Networks; Data and Web Mining; Embedded Systems; Formal Methods; Hardware Security; Image and Video Processing; Information Retrieval; Information Security; Internet of Things (IoT); Machine Learning; Natural Language Processing; Robotics; Sensor Networks; Theoretical Computer Science;

## Academic Performance

### *Academic Performance*

Industry Collaboration	NA
International Faculties Hosted by Faculty Members	NA
International Students Hosted by Faculty Members	NA
Doctoral Degrees Awarded	NA
MS Degrees Awarded	NA
Fellow - Professional Bodies	2
Member - Professional Bodies	19
Editor / Associate Editor	6
Awards & Honours	NA
Fellowships	NA
Sponsored Research Projects	4
Consultancy Projects	NA
Visits Abroad by Faculty Members	NA
Plenary / Keynote / Invited - Lectures by Faculty Members	38
Seminars, Conferences and Workshops Organized	8
Short-Term Courses, Training Programmes and Workshops organised	1
Papers Published in Journals	37
Papers Presented in Conferences	5

# Pharmaceutical Technology

## Head of Department

Prof. Himangshu Sekhar Maji

## Programmes

1. Diploma in Pharmacy (2 year)
2. Bachelor in Pharmacy (4 year)
3. Master in Pharmacy (2 year) with specialization in
  - a) Pharmaceutics
  - b) Pharmacology
  - c) Pharmaceutical Chemistry
  - d) Pharmaceutical Quality Assurance
4. Bachelor in Medical Laboratory Technology (BMLT) (3 year)
5. PGDBM in Pharmacovigilance (1 year)

## Faculty members

### *Professors*

<b>Name</b>	<b>Research Areas</b>
Prof. Tapan Kumar Chatterjee (Dean, Pharmacy)	Pharmacology, Toxicology
Prof. Kamalakanta Roy	Pharmaceutics, Pharm Engineering
Prof. Himangshu Sekhar Maji (Head)	Pharmaceutical Chemistry, Drug Analysis, Phytochemistry

### *Associate Professors*

Dr. Pintu Kumar De	Pharmaceutics, Drug Delivery System
Dr. Tapan Kumar Shaw	Novel and Conventional Drug Delivery System
Dr. Arindam Maity	Natural, Synthetic and Biomedical Chemistry

### *Assistant Professors*

Dr. Santanu Ghosh	Gene delivery, Tissue Engineering
Dr. Debjani Sarkar	GRDDS, Polymer Grafting
Dr. Asim Halder	Nanomedicine, Drug Delivery
Dr. Moumita Roy	in vivo Pharmacology
Dr. Ritu Khanra	Phytochemistry, Pharmacology
Dr. Puspita Roy	Heterocyclic synthesis
Mr. Tathagata Roy	Pharmacology
Ms. Preeta Bose	NDDS
Ms. Devlina Pal	Pharmaceutics
Mr. Sakshar Saha	Pharmacology
Mr. Susanta Paul	Pharmaceutics
Mr. Victor Roychowdhury	Pharmacology
Ms. Anuva Samanta	Pharmaceutical Quality Assurance

Mr. Shubham Paul	Pharmaceutics
Ms. Ankita Acharya	Pharmaceutics
Ms. Rituparna B Gupta	Pharmaceutical Analysis
Mr. Gourav Samajdar	Pharmaceutics

## Department Achievements

The School of Pharmaceutical Technology of JIS University started functioning in 2016 with Bachelor in Pharmacy, with prior approval from the Pharmacy Council of India. Consequently, affiliation from AICTE was obtained for the pharmacy program. Currently, the department offers D. Pharm., B. Pharm., M. Pharm. (Pharmaceutics, Pharmacology, Pharm Chemistry and QA), Bachelor of Medical Laboratory Technology (BMLT) and Ph.D. in Pharmacy; and PGDBM in Pharmacovigilance. The department is equipped with the latest analytical instruments like Heidolph rotary evaporator, Multi-station dissolution apparatus, Shimadzu UV spectrophotometer, Bruker FTIR, Agilent HPLC, Eppendorf deep freezer amongst others. The research focus is on recent drug delivery systems, herbal drug development, process development techniques and drug analysis using the modern spectrophotometric approach. We inculcate the students with technical skills as well as subject-related information to ensure that they can easily find a job. We provide the students with the best infrastructure, well-equipped labs, sports ground and everything they need to step towards a beautiful career. In this modern world, we help pharmacists to grow and find suitable jobs for themselves. A well-organized student mentoring system is constantly working for the overall development of each student. The departmental faculties are engaged in research and it has been reflected by a number of publications in scientific journals of repute. Our students have scored good scores in JELET and GPAT examinations and are studying at Jadavpur University and other Government institutions. Recently the department has bagged the USVA 2020 Award (Category 10) from AICTE for their contribution to society during Covid 19 pandemic.

## Research Areas

Drug delivery systems. TDDS, Gastro-retentive, Topical, micro and nanoparticulate delivery systems, Gastro retentive drug delivery system, Polymer modification by polymer grafting and novel drug delivery system, Novel & conventional drug delivery systems, Nanomedicine, Drug delivery, Pharmaceutical Technology, Drug development, Pharmacology & Toxicology; In vivo Pharmacology, Herbal drug development, Pharmaceutical Chemistry, Phytochemistry, Pharmacology, Drug Analysis & Development, Synthetic Organic Chemistry, Natural Product Chemistry, Biomedical Chemistry, Molecular Dynamics, Phytochemistry, Pharmacology, Drug Delivery, Gene Delivery, Biomaterials, wound healing, tissue engineering, Synthesis of heterocyclic compounds, pharmacological screening of anticancer and antioxidant activity :

## Academic Performance

### *Academic Performance*

Industry Collaboration	2
International Faculties Hosted by Faculty Members	Nil
International Students Hosted by Faculty Members	Nil
Doctoral Degrees Awarded	Nil
MS Degrees Awarded	Nil
Fellow - Professional Bodies	Nil
Member - Professional Bodies	6
Editor / Associate Editor	3
Awards & Honours	3
Fellowships	Nil
Sponsored Research Projects	Nil
Consultancy Projects	Nil
Visits Abroad by Faculty Members	2
Plenary / Keynote / Invited - Lectures by Faculty Members	Nil
Seminars, Conferences and Workshops Organized	30
Short-Term Courses, Training Programmes and Workshops organised	1
Papers Published in Journals	40
Papers Presented in Conferences	20

# Agricultural Sciences

## Head of Department

Dr. Dharani Dhar Patra

## Programmes

B.Sc.(Hons.) Agriculture ( 4 year )

## Faculty members

### *Professors*

#### **Name**

Dharani Dhar Patra

#### **Research Areas**

Soil Science and Agril Chemistry, Soil Biology, Ecology, Phytoremediation, Isotope technique

### *Associate Professors*

No permanent faculty member

NIL

### *Assistant Professors*

NIL

NIL

## Department Achievements

The School of Agricultural Sciences opened in the year 2020. It has successfully completed two semesters recently.

## Research Areas

Agronomy, Soil Science, Agricultural Entomology, Plant Pathology, Genetics and Plant Breeding, Plant Biotechnology, Biochemistry, Agricultural Microbiology, Agricultural Economics, Rural Sociology, Extension Education, Horticulture, Forestry, Crop Physiology, Statistics, Soil and Water Conservation, Livestock and Poultry Management, Farm Machinery and Power, Agro-meteorology, Geo-Informatics, Nanotechnology :

## Academic Performance

### *Academic Performance*

Industry Collaboration	Nil
International Faculties Hosted by Faculty Members	Nil
International Students Hosted by Faculty Members	Nil
Doctoral Degrees Awarded	Nil
MS Degrees Awarded	Nil
Fellow - Professional Bodies	Nil
Member - Professional Bodies	Nil
Editor / Associate Editor	Nil
Awards & Honours	Nil
Fellowships	Nil
Sponsored Research Projects	Nil
Consultancy Projects	Nil
Visits Abroad by Faculty Members	Nil
Plenary / Keynote / Invited - Lectures by Faculty Members	Nil
Seminars, Conferences and Workshops Organized	Nil
Short-Term Courses, Training Programmes and Workshops organised	Nil
Papers Published in Journals	Nil
Papers Presented in Conferences	Nil



# Department of Biotechnology

## Head of Department

Dr. Mainak Mukhopadhyay

## Programmes

B.Sc.(Hons.) Biotechnology ( 3 year )

B.Sc. (Hons.) Microbiology ( 3 year )

M.Sc. Biotechnology ( 2 year )

M.Sc. Microbiology (2 year)

## Faculty members

### *Associate Professors*

Dr. Mainak Mukhopadhyay Biochemistry and Enzymology

### *Assistant Professors*

Dr. Dipankar Ghosh Microbial Engineering and Algal Biotechnology

Dr. Dibyarupa Pal Host and Pathogen Interactions

Dr. Ditipriya Hazra RNA degradation and structural biology

Dr. Amlan Roychowdhury Biochemistry and structural biology

Dr. Avik Acharya Chowdhury Cancer cell signaling and Cell Biology

## Department Achievements

Department faculty have already published more than 100 peer-reviewed journals, book chapters and conference proceedings including Elsevier, Springer, Springer Nature, Wiley, Taylor Francis, Cell press, Biomed Central, Wiley, Apple, CRC and UGC publishers. A few patent filing processes are also in progress. The Department of Biotechnology is currently running three research laboratories i.e. Biochemistry and Enzymology Lab, Cell Biology and Cancer Biology Lab, Microbial Engineering and Algal Biology Lab. The postgraduate students of Department of Biotechnology are already placed as quality control analyst, medical transcriptionist, researcher positions in different industries, such as Cipla, Ranbaxy, Macloid, GCC Biotech , MSV Tech etc. The Ph.D. and M.Sc students actively participate in international seminars and conferences i.e., in IIT Guwahati, NIT Warangal, IICT Hyderabad, IIT Kharagpur etc. The Department of Biotechnology has also established the J.C. Bose Scientific Research Club for organizing departmental conferences and seminars time to time. Department of Biotechnology has organized National Seminar Series on Human health and Biotechnology advances every year.

## Research Areas

Biochemistry and Enzymology ; Microbial Engineering and Algal Biotechnology; Host and Pathogen Interactions ; RNA degradation and structural biology; Biochemistry and structural biology; Cancer cell signaling and Cell Biology

## Academic Performance

### *Academic Performance*

Industry Collaboration	01
International Faculties Hosted by Faculty Members	Nil
International Students Hosted by Faculty Members	Nil
Doctoral Degrees Awarded	Nil
MS Degrees Awarded	Nil
Fellow - Professional Bodies	Nil
Member - Professional Bodies	1
Editor / Associate Editor	1
Awards & Honours	3
Fellowships	Nil
Sponsored Research Projects	4 (Submitted)
Consultancy Projects	01
Visits Abroad by Faculty Members	Nil
Plenary / Keynote / Invited - Lectures by Faculty Members	2
Seminars, Conferences and Workshops Organized	6
Short-Term Courses, Training Programmes and Workshops organised	Nil
Papers Published in Journals	13
Papers Presented in Conferences	3

# Chemistry

## Head of Department

Dr. Atanu Kotal

## Programmes

M.Sc.Chemistry ( 2 year )

B.Sc.(H) Chemistry ( 3 year )

## Faculty members

### *Assistant Professors*

Dr. Atanu Kotal

Polymer Chemistry, Material Science s

Dr. Partha Pratim Ghosh

Organic Synthesis, Green Chemistry, Synthetic Methodology

## Department Achievements

Chemical science has become increasingly interdisciplinary and currently at the focal point of various fundamental scientific queries due to its diversity. The Chemistry department at JIS University began its journey from 2015 to provide high-level quality teaching along with state-of-the-art research facilities to cultivate curious and inventive scholars so that they become competent to face the global challenges from academic as well as from industry. The department of chemistry currently offers B.Sc.(H) Chemistry, M.Sc. Chemistry, and Ph.D. The diverse qualifications of the faculty members ensure expertise in all facets of chemistry as well as in various interdisciplinary areas. The Department ensures academic flexibility and good deal of faculty-student interaction. We have developed state-of-the-art research facility with ample high-end equipment. Regular interactive sessions with students through the departmental seminars, workshops, and different extracurricular activities are regularly organized in the department.

## Research Areas

Sequence-Regulated Polymers, Multi Stimuli Responsive Polymers, Branching Polymers, Sensors, Hybrid Materials, Anisotropic Nanomaterials, Responsive Gels, Metallo-supramolecular Gels, Co-ordination Polymers, Organic Synthesis & Methodology, Green Chemistry, Catalysis, Heterocyclic synthesis, Nanotechnology. ∴

## Academic Performance

### *Academic Performance*

Industry Collaboration	NA
International Faculties Hosted by Faculty Members	NA
International Students Hosted by Faculty Members	NA
Doctoral Degrees Awarded	NA
MS Degrees Awarded	06
Fellow - Professional Bodies	NA
Member - Professional Bodies	NA
Editor / Associate Editor	NA
Awards & Honours	NA
Fellowships	NA
Sponsored Research Projects	1 (applied)
Consultancy Projects	NA
Visits Abroad by Faculty Members	NA
Plenary / Keynote / Invited - Lectures by Faculty Members	NA
Seminars, Conferences and Workshops Organized	01
Short-Term Courses, Training Programmes and Workshops organised	NA
Papers Published in Journals	0
Papers Presented in Conferences	0

# Physics

## Head of the Department

Prof. Rina Bhattacharya

## Programmes

M.Sc.Physics ( 2 year )

B.Sc (H) Physics ( 3 year )

## Faculty members

### *Professors*

**Dr Rina Bhattacharya**      **Atmospheric Physics**  
(HOD)

### *Assistant Professors*

Dr. Pranabi Maji                      Material Science

Dr. Abhik Sinha Mahapatra      Condensed Matter Physics

## Department Achievements

The Department of Physics started its journey in 2015. About 15 research papers are published in reputed journals and proceedings including Materials Today Communications, Materials Characterization, Chemical Engineering Journal, Journal of Applied Physics , Journal of Physical Chemistry C, Pramana - Journal of Physics and Physica Scripta. The PG and PhD students have presented six papers in JIS 2nd National Conference on Multidisciplinary Research 2020, which were also published in the JISU Journal of Multidisciplinary Research. Our students, Joyesha Manna, Abhijit Banerji and Debanjali Roy were awarded for their performance. Three of our students, Debanjali Roy (2018-2020), Harijyoti Mandal (2019-2020) and Saurav Mandal (2018-2020) have qualified GATE 2021. After completing M.Sc (Physics) from JIS University, Saurav Mandal has joined in PhD programme in Physics at Indian Institute of Technology, Guwahati. Harijyoti Mondal has been admitted to M.Tech course at Indian Institute of Technology, Delhi. One of our students, Sarnali Roy Choudhury, M.Sc (Physics) Second Semester (2020-2021) has the following achievements: 1. Virtual Inter College Competition, JIS Saman 2021, Ist runner up 2. Popular show of California TV live “INSPIRATION” 13 January, 2021 3. SANYOGITA winner in semi classical Vocal in KBR Bimalarpan Sangeet Mahotsav 2021 Department organized a webinar by Mr. Rajnarayan De , Scientific Officer , Bhabha Atomic Research Centre (BARC), Autonagar,Vizag (A.P.), India on “Oblique angle thin film deposition Technology: Fundamentals and Devices” dated 07-11-2020.

## Research Areas

Atmospheric Physics ; Material Science ; Condensed Matter Physics

## Academic Performance

### *Academic Performance*

Industry Collaboration	NA
International Faculties Hosted by Faculty Members	NA
International Students Hosted by Faculty Members	NA
Doctoral Degrees Awarded	NA
MS Degrees Awarded	NA
Fellow - Professional Bodies	NA
Member - Professional Bodies	1
Editor / Associate Editor	NIL
Awards & Honours	6
Fellowships	NA
Sponsored Research Projects	NIL
Consultancy Projects	NIL
Visits Abroad by Faculty Members	NIL
Plenary / Keynote / Invited - Lectures by Faculty Members	NIL
Seminars, Conferences and Workshops Organized	NIL
Short-Term Courses, Training Programmes and Workshops organised	NIL
Papers Published in Journals	15
Papers Presented in Conferences	8

# Earth Sciences

## Head of Department

Dr. Manua Banerjee

## Programmes

BSc, (Hons) in Geology (3 year)  
MSc. in Applied Geology (2 year)  
PhD

## Faculty members

Name	Research Areas
<i>Assistant Professors</i>	
Dr. Manua Banerjee	Mineralogy, Geochemistry, Geology
Dr. Sanjukta De	Shale hydrocarbon exploration, application of machine learning techniques in exploration of hydrocarbon and geothermal energy.

## Department Achievements

The Department of Earth Sciences has started its journey from 2015. In the year of 2020-2021 the department has published 5 research articles and 2 international conference proceedings. The student and faculty members regularly participate in different e-training courses organized by Geological Survey of India (GSI), Presidency University, Kolkata and other reputed institutions. Every year our students are selected in several national level competitive examinations such as JAM, GATE, NET etc.

## Research Areas

Mineral Sciences; Petrology; Geodynamics, Geophysics and Tectonics; Shale hydrocarbon exploration :

## Academic Performance

### *Academic Performance*

Industry Collaboration	NIL
International Faculties Hosted by Faculty Members	NIL
International Students Hosted by Faculty Members	NIL
Doctoral Degrees Awarded	NIL
MS Degrees Awarded	04
Fellow - Professional Bodies	NIL
Member - Professional Bodies	NIL
Editor / Associate Editor	NIL
Awards & Honours	NIL
Fellowships	NIL
Sponsored Research Projects	NIL
Consultancy Projects	NIL
Visits Abroad by Faculty Members	NIL
Plenary / Keynote / Invited - Lectures by Faculty Members	NIL
Seminars, Conferences and Workshops Organized	NIL
Short-Term Courses, Training Programmes and Workshops organised	NIL
Papers Published in Journals	05
Papers Presented in Conferences	02



# Remote Sensing & GIS

## Head of Department

Dr. Atanu Bhattacharya

## Programmes

MSc. Remote Sensing & GIS (2 year)

PhD Remote Sensing

## Faculty members

### Name

### Research Areas

#### *Associate Professors*

Dr. Atanu Bhattacharya

Glaciology, Glacier Climate interaction, Glaciers and periglacial environment of HMA, Glacier dynamics, Application of RS in Natural Hazards

#### *Assistant Professors*

Dr. Ratnadeep Ray

Digital Image Processing, Application of Remote Sensing in floristic environment, urban environment, Archeology, watershed management

Dr. Chalantika Laha Salui

Application of RS& GIS in disaster preparedness & mitigation planning, Application of RS in Hydrology, Geomorphology.

## Department Achievements

The department of Remote Sensing & GIS has started its journey from the year 2019. In the year 2020-2021, the department has published 5 research articles in reputed international journals like Nature Communications, Remote Sensing of Environment, Elsevier, Springer, Taylor Francis, Cell press publishers etc. The faculty members published several book chapters and international conference proceedings. One research project has been submitted for possible funding in DST, India. Additionally the faculty has also applied for World Bank funded consultancy project on Geohazard Action for South Asia in collaboration with University of St. Andrews, Scotland, UK. Departmental Faculty has a several active collaborations with international research groups and universities in Germany, Switzerland, Norway, United Kingdom, Canada, USA, Pakistan, Nepal, China etc. In this year, new course curriculum has been developed for MSc. Remote sensing & GIS. One faculty member also served as a Associate Editor for a Special issue on “Geospatial Technologies and Geographical Information Systems for Sustainable Development” in Sustainability (IF 3.291), MDPI.

## Research Areas

Digital Image Processing; Glacier Response to Climate Change in High Mountain Asia; Application of Remote Sensing in Natural Hazards and Disasters risk assessment etc. :

## Academic Performance

### *Academic Performance*

Industry Collaboration	NIL
International Faculties Hosted by Faculty Members	NIL
International Students Hosted by Faculty Members	NIL
Doctoral Degrees Awarded	NIL
MS Degrees Awarded	NIL
Fellow - Professional Bodies	NIL
Member - Professional Bodies	NIL
Editor / Associate Editor	01
Awards & Honours	NIL
Fellowships	NIL
Sponsored Research Projects	01 (Applied)
Consultancy Projects	01 (Applied)
Visits Abroad by Faculty Members	01
Plenary / Keynote / Invited - Lectures by Faculty Members	NIL
Seminars, Conferences and Workshops Organized	NIL
Short-Term Courses, Training Programmes and Workshops organised	NIL
Papers Published in Journals	05
Papers Presented in Conferences	06

# Education

## Head of Department

Prof. Swades Ranjan Samanta

## Programmes

B.Ed ( 2 Year )

PhD ( 5 Year )

## Faculty members

*Professor*

**Swades Ranjan Samanta**

*Assistant Professors*

Dr. Kalyani Mitra

Dr. Priya Mitra

Ms Ariti Nath

Mrs. Archita Pal

Mr. Ayan Chackraborty

Mrs Shirirupa Sen

## Department Achievements

The Department of Education under JIS University is an intellectual hub with a view on innovative experiment for advanced teaching and research in educational studies. It started its journey from the academic session 2017-2018 with B.Ed. course with intake of 100 students. Our department is recognized by NCTE and affiliated to JIS University. Our department offers Ph.D. in Education. A total of nine candidates are pursuing Ph.D. in education with different specializations. The Teacher Education programs are offered with a pedagogy of teaching with under different disciplines and subjects. A Post-graduation in education course has started in the session 2021-2022. Our department is running with sincere and dynamic faculty members headed by HOD. The faculty members are immensely engaged in research work and they publish papers in different UGC recognized journals. The university campus has been rated many times as one of the best campuses. Seminars were conducted by Eminent Academician in Education Department. Different Programs (Rabindra Jayanti) are conducted regularly by the Education department.

Faculty members attended different National & International webinars, Conferences, workshops and FDPs. One faculty member (Dr. Kalyani Mitra) successfully completed UGC Refresher course in "Self -Instructional Materials of BDP(Education), Paper -IV, (Trends and Issues in Education and Comparative Education), Netaji Subhas Open University. Nine students qualified CTET and TET examination in the current session. Maximum Students

received job offers in different reputed English medium Schools. All students successfully completed Internship Program. One student has been admitted to Ph.D Course.

## Research Areas

Science Education; Women Education; Learning strategies and methodology; Educational Psychology; Social Education; Problems of teaching and learning; Curriculum construction; Assessment and Evaluation; Inclusive Education; School Education; Teacher Education; Historical Research; Contemporary issues of Education; Pedagogical aspect of Education; Educational administration and management; Economics of Education; Learning disabilities; Experimental Research; Philosophical aspect of Education; Vocational Education

## Academic Performance

### *Academic Performance*

Industry Collaboration	NA
International Faculties Hosted by Faculty Members	NA
International Students Hosted by Faculty Members	NA
Doctoral Degrees Awarded	NA
MS Degrees Awarded	NA
Fellow - Professional Bodies	NA
Member - Professional Bodies	NA
Editor / Associate Editor	NA
Awards & Honours	NA
Fellowships	NA
Sponsored Research Projects	NA
Consultancy Projects	NA
Visits Abroad by Faculty Members	NA
Plenary / Keynote / Invited - Lectures by Faculty Members	NA
Seminars, Conferences and Workshops Organized	NA
Short-Term Courses, Training Programmes and Workshops organised	NA
Papers Published in Journals	NA
Papers Presented in Conferences	NA

# Juridical Sciences

## Head of Department

Dr Souvik Chatterji

## Programmes

LLB (3 year)

Integrated BBA-LLB (5 year)

## Faculty members

### *Professors*

#### **Name**

NA

#### **Research Areas**

NA

### *Associate Professors*

Dr Souvik Chatterji & HOD

Competition Law, LID, Criminal Law

Dr. Aparup Pakhira

Company Law, Business Law, Jurisprudence, Drafting, Pleading and Conveyance

### *Assistant Professors*

Soumadip Kundu

Competition Law, Constitutional Law, Law and Social Change

Ranadip Bhattacharjee

Cyber Law, Intellectual Property Law

Moumala Bhattacharjee

Family Law, Human Rights, Women and Law

Somdatta Mukherjee

Corporate Law, Business Law

Riya Banerjee

Tribal Law

## Department Achievements

Department of Juridical Sciences' has started its journey from 2016. In the year 2020-2021, the faculties of this department have published three research articles in reputed law journals like Company Cases, International Journal of Law Management and Humanities, international peer reviewed & multidisciplinary & multiple languages research journal. One conference proceedings has also been published in this year in the International Web Conference on Women Empowerment. Additionally, faculty members have also presented 5 papers in National and International Conferences. One Book Chapter has also been published in "Contemporary Legal Issues and Challenges" edited by international reputed publishing house "Black Aviet". The faculty members also published several book chapters and international conference proceedings. One research project has been submitted for Bureau of Police Research and Development (BPR&D). In this year, new subject has been added which is Law of Defence Studies. There were two webinar series on different laws and social topics conducted by the department with judges, practitioners, academicians and social workers.

One book has been published by national reputed publisher Allahabad Law Agency, which was authored by Head of the Department Dr. Souvik Chatterji.

## Research Areas

Competition Law, Cyber Law; Corporate Law, Human Rights; Law and Social Change; Women and Law; Family Law; Business Law; Intellectual Property Law; Tribal Law; :

## Academic Performance

### *Academic Performance*

Industry Collaboration	NA
International Faculties Hosted by Faculty Members	NA
International Students Hosted by Faculty Members	NA
Doctoral Degrees Awarded	NA
MS Degrees Awarded	NA
Fellow - Professional Bodies	NA
Member - Professional Bodies	NA
Editor / Associate Editor	NA
Awards & Honours	NA
Fellowships	NA
Sponsored Research Projects	NA
Consultancy Projects	NA
Visits Abroad by Faculty Members	NA
Plenary / Keynote / Invited - Lectures by Faculty Members	NA
Seminars, Conferences and Workshops Organized	NA
Short-Term Courses, Training Programmes and Workshops organised	NA
Papers Published in Journals	NA
Papers Presented in Conferences	NA

# Hospitality and Hotel Administration

## Head of Department

Mr. Biswajit Das

## Programmes

B.Sc in Hospitality and Hotel Administration ( 3 year )

B.A in International Culinary Arts ( 3 year )

MBA in Hospitality and Hotel Administration ( 2 year )

Diploma in Hotel Operation ( 1.5 year )

Diploma in Accommodation ( 1.5 year )

Diploma in Food and Beverage Service ( 1.5 year )

Diploma in Food Production and bakery ( 1.5 year )

## Faculty members

### *Professors*

<b>Name</b>	<b>Research Areas</b>
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NA	NA
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Name	Research Area
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### *Associate Professors*

NA	NA
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Name	Research Area
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### *Assistant Professors*

Mr. Arijit Sengupta	NA
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Mr. Sudipto kr Pal	NA
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Mr. Ankan Basu	NA
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Mr. Avijit Ray	NA
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Mrs Anurupa Pal	NA
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Mrs. Sanchari Sikdar	NA
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Mrs. Priyanka Sahani	NA
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Mr. Surojy Dasgupta	NA
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Mr. J.P Chadha	NA
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Mr. Kaustav Dey	NA
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Mr. Biswajit Biswas	NA
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Mr. Sudipto Mukherjee	NA
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Mr. Angshuman Gomes	NA
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Mr. Sumit Samaddar	NA
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Mr. Samrat Dey	NA
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## Department Achievements

The Department of Hospitality and Hotel Administration has witnessed the graduation of 4 batches of UG and 2 batches of MBA since the inception of the programmes in 2015. The students have been placed in National and International Hotels and service sectors. For consecutive two years, we have conducted an international chef competition where students from International Culinary and B.Sc as well as MBA batch have participated along with other International students. The competition had various sections like cake icing competition, ice carving competition vegetables carving competition etc. We also conducted a Mixocom competition for the students who love to make Cocktails and Mocktail. From March 2020 Department has organized various Webinars conducted by eminent hospitality personnel. We have conducted some Masterclasses on Plating, food Presentation, and garnishing from popular celebrity chef like Chef Sanjeev Kapoor, Chef Kunal Kapoor etc

## Research Areas

NA :

## Academic Performance

### *Academic Performance*

Industry Collaboration	NA
International Faculties Hosted by Faculty Members	NA
International Students Hosted by Faculty Members	NA
Doctoral Degrees Awarded	NA
MS Degrees Awarded	NA
Fellow - Professional Bodies	NA
Member - Professional Bodies	NA
Editor / Associate Editor	NA
Awards & Honours	NA
Fellowships	NA
Sponsored Research Projects	NA
Consultancy Projects	NA
Visits Abroad by Faculty Members	NA
Plenary / Keynote / Invited - Lectures by Faculty Members	NA
Seminars, Conferences and Workshops Organized	12
Short-Term Courses, Training Programmes and Workshops organised	NA
Papers Published in Journals	NA
Papers Presented in Conferences	NA



# Management Studies

## Head of Department

Dr. Suman Lahiri

## Programmes

- 1.BBA (3 Year)
- 2.MBA (2 Year)
- 3.PhD (5 Year)

## Faculty members

### Associate Professor

#### Name

Dr.Sulagna Das

#### Research Areas

Banking, Micro-finance, Bank Merger, Women Empowerment, Financial Literacy

### Assistant Professors

#### Name

Dr.Suman Lahiri

#### Research Areas

Strategic Management- Dynamic Capability, Energy Markets, Base of the Pyramid (BoP) Business Strategies

Dr.Surjyasikha Das

Behavioral Science, Consumer Behaviour, Learning Management System(LMS) and Education management , Post-Covid Physical and Mental Stress, Emotional and Spiritual Intelligence

## Department Achievements

The Department of Management Studies has witnessed the graduation of 3 batches of MBA and 2 batches of BBA since the inception of the programmes in 2016. The students have been placed in national and international organizations. Five Research Scholars have received the PhD award in 2021. The Department has integrated the Coursera with its current subject offerings to expose the students of BBA and MBA programmes to world class knowledge and practice.

## Research Areas

Business Strategy, Finance, Human Resources Management Marketing, Organization Behaviour.

## Academic Performance

### *Academic Performance*

Industry Collaboration	NA
International Faculties Hosted by Faculty Members	NA
International Students Hosted by Faculty Members	NA
Doctoral Degrees Awarded	5
MBA Degrees Awarded	9
Fellow - Professional Bodies	1
Member - Professional Bodies	3
Editor / Associate Editor	3
Awards & Honours	NA
Fellowships	NA
Sponsored Research Projects	NA
Consultancy Projects	NA
Visits Abroad by Faculty Members	NA
Plenary / Keynote / Invited - Lectures by Faculty Members	7
Seminars, Conferences and Workshops Organized	14
Short-Term Courses, Training Programmes and Workshops organised	NA
Papers Published in Journals	6
Papers Presented in Conferences	1

# Centre for Data Science, JISI ASR

## Head of the Centre

Dr. Chandranath Adak

## Programmes

1. M.Tech. in Computer Science and Engineering (with specialization in Data Science) (2 Year)
2. M.Tech. in Data Science (Executive) (3 Year)
3. Advanced PG Diploma in Data Science and Applications (1 Year): starting from 2021
4. PhD (about 3-5 Year)

## Faculty members

### *Professors*

#### **Name**

Prof. Ajoy Kumar Ray

Prof. Arun Kumar Majumdar

### *Assistant Professors*

Mr. Saptarshi Das

Mr. Abhishek Ray

Mr. Suman Pathak

Dr. Chandranath Adak

#### **Research Areas**

Pattern recognition and machine intelligence; Computer vision; Biomedical engineering

Very large databases; Machine learning in document processing; Natural language processing; Information security

Information and system security; Access control model; Network security

Social network analysis; Identity economics; Psychometry

IoT; Big Data; Machine learning

Deep learning; Reinforcement learning; Image and video understanding; Medical image analysis; Forensics and biometrics

## Department Achievements

- 100% student placement for 2019-2021 M.Tech. batch
- 100% research internship in companies offered to 2020-2022 M.Tech. batch
- Signed MOU with Vista Intelligence, Kolkata (<http://vistaintelligence.ai>)
- Mr. Abhishek Ray signed a license agreement with Facebook which will grant access to their datasets for research.

- Second **best paper** at International Conference on Integrated Intelligent Computing Communication & Security (ICIIC-2021) for the following paper:  
K. Barik, A. Abirami, S. Das, K. Konar, A. Banerjee, “*Penetration Testing Analysis with Standardized Report Generation*”, ICIIC-2021, Atlantis Press. (*First Author: PhD student*)
- Published papers: 8 in Journals, 8 in Conferences, 2 in Book Chapters
- Organized following workshops:
  - Online workshop on Selected Topics in Data Science (Part-1), 29-30 May 2021.
  - Online workshop on Selected Topics in Data Science (Part-2): Theme: Big Data & Security, 26-27 June 2021.
- Organized following webinars:
  - Webinar on “Research & Application of Industrial Defect Detection Algorithm based on Deep Learning”, Speaker: Dr. Xian Tao, Institute of Automation, CAS, Beijing, China, 10/10/2020.
  - Webinar on “A framework to predict spatially high-risk regions from long term residential history data of patients”, Speaker: Aniruddha Maiti, Temple University, USA, 14/09/2020.
  - Webinar Series 2.0: 2020, 17th July 2020 to 1st August 2020.

## Research Areas

Very Large Databases; Machine Learning (ML) in Document Processing; Natural Language Processing; Information and System security; Access control model; Network Security; Video Surveillance; Biomedical Engineering; Stock Market Prediction using ML; Document Image Analysis and Understanding; Automated Understanding of Psychological Aspects of Handwriting; ML and AI for Risk Management; Social Network Analysis; Machine Learning in Healthcare; Forensics and Biometrics; Medical Image and Video Analysis; Service Recommendation; Industrial Defect Detection ; Landcover Classification; Applications of Deep Learning ; Applications of Reinforcement Learning; IoT and Cloud Computing in AgriTech and HealthTech; ML-Based Characterization of Ocular Pathologies

## Academic Performance

<i>Academic Performance</i>	
Industry Collaboration	1
International Faculties Hosted by Faculty Members	1
International Students Hosted by Faculty Members	0
Doctoral Degrees Awarded	0
M.Tech. Degrees Awarded	2
Fellow - Professional Bodies	1
Member - Professional Bodies	2
Editor / Associate Editor	0
Awards & Honours	2
Fellowships	0
Sponsored Research Projects	0
Consultancy Projects	0
Visits Abroad by Faculty Members	0
Plenary / Keynote / Invited - Lectures by Faculty Members	2
Seminars, Conferences and Workshops Organized	3
Short-Term Courses, Training Programmes and Workshops organised	2
Papers Published in Journals	8
Papers Presented in Conferences	8
Papers in Book Chapters	2

# Centre for Interdisciplinary Sciences, JISIASR

## Head of Department

Dr. Prosenjit Saha

## Programmes

1. MSc Polymer Science and Technology (2 year)
2. PG Diploma in Analytical Science and Technology
3. PhD

## Faculty members

### *Professors*

#### **Name**

#### **Research Areas**

No permanent faculty member

NIL

### *Associate Professors*

Dr. Sankarprasad Bhuniya MR-Imaging, Drug delivery, Sensors, Bioimaging

### *Assistant Professors*

Dr. Subhankar Singha Bioorganic Chemistry; Bio- & Chemo-sensors

Dr. Prosenjit Saha (Head) Polymeric biomaterials, Polymer composites

## Department Achievements

Centre for Interdisciplinary Sciences (CIS) at JISIASR of JIS University has been established to offer a unique opening to advanced educational curriculum and research where the basic sciences meet with the technology to address the real challenges and pertinent issues for present society. Realizing the urgent need to fulfil the gap between academic curriculum and industry's demands, CIS is offering a number of quality programs at post-graduate and research levels which will ultimately provide a talented pool of skilled manpower to ensure working solution in the respective domains. Under the extraordinary leadership of Padma Shri (Prof.) Ajoy Kumar Ray, some of the best academicians and bright scholars have joined CIS as faculty members. The academic programs of CIS have started functioning in 2020. Currently the centre offers M.Sc. in Polymer Science and Technology, PG Diploma in Analytical Science and Technology, and Ph.D. in various interdisciplinary research fields. The center is committed to emerge as a research group of global stature in the design and development of novel and advanced biomaterials including polymeric and nanomaterials along with sensing materials, adhering to the norms of industries with green and sustainable alternatives to existing materials for cutting edge applications. The centre is also focusing in innovation with the concept of integration of interdisciplinary technologies resulting in hi-tech complex industrial products for applications in biomedical and healthcare as well as in

environmental sectors. The centre is currently running two research laboratories i.e. Biomaterials & Sensors Lab, and Biopolymers Lab. The laboratories are equipped with latest high quality and sophisticated instruments like 3D-Bioprinter, Fluorescence Spectrometer, UV Spectrophotometer, Electrospinning Setup, Rotary evaporator and Chiller, Vacuum Freeze Dryer (Lyophilizer), amongst a few. The faculties are engaged in high quality research which has been reflected from their publications in scientific journals of repute. The CIS faculties in their career have in total more than 150 publications in peer reviewed journals, patents, books, book chapters, conference proceeding, etc. In the 2020-21 session, total 17 publications are recorded by the faculties of this centre. Presently four external sponsored projects with total value of around 1.5 crore rupees from various funding sources (SERB, DST, CSIR, DST INSPIRE) are running at the centre. Our students have received several awards and achievements upon their active participation in various national and international conferences and summer school programs. The faculty members also achieved recognition through association with various international scientific society, such as American Chemical Society (ACS), Royal Society of Chemistry (RSC), etc. The centre is connected with some leading institutes and industries across the world, like IIT Kharagpur, MG University-Kerala, NIPER Kolkata, SNBNCBS Kolkata, PDPU Gujarat, IEST-Shibpur, IPF-Dresden Germany, POSTECH South Korea, Hongik University South Korea, GUT Poland, Materials Science and Engineering Georgia Institute of Technology USA, Indian Paint Association (IPA), Confederation of Indian Industry (CII), etc. This centre took major role in the initiation and signing of three MoUs between JISIASR and three different institutes (two international and a national). The centre has organized several high-quality scientific programs such as international workshop (jointly with Hongik University of South Korea), lecture of Nobel Laureate Prof. Ada Yonath (jointly with North Bengal University, West Bengal), and around 20 webinars (national and international level speakers) in the 2020-21 session.

## Research Areas

Bioorganic Chemistry; Biosensors and chemosensors (fluorescence probes/assay kits development); Contrast materials for bioimaging; Smart materials for drug delivery and theranostics; Development of cellulose based skin scaffold and bio-implant using 3D printing and other fabrication techniques; Development of chitosan based film by electrospinning technique; Fire retardant structural composites from natural plant based fibers and polymers; Simple low-cost water purifier using natural materials applying basic nanotechnology; Polymer; MR (Magnetic Resonance)-Imaging, Drug delivery, Bioimaging :

## Academic Performance

### *Academic Performance*

Industry Collaboration	1
International Faculties Hosted by Faculty Members	2
International Students Hosted by Faculty Members	Nil
Doctoral Degrees Awarded	Nil
MS Degrees Awarded	Nil
Fellow - Professional Bodies	Nil
Member - Professional Bodies	3
Editor / Associate Editor	5
Awards & Honours	2
Fellowships	1
Sponsored Research Projects	4
Consultancy Projects	Nil
Visits Abroad by Faculty Members	Nil
Plenary / Keynote / Invited - Lectures by Faculty Members	2
Seminars, Conferences and Workshops Organized	1
Short-Term Courses, Training Programmes and Workshops organised	1
Papers Published in Journals	13
Papers Presented in Conferences	2



# Centre for Health Science & Technology, JISI ASR

## Head of Department

Dr. Sujay Chattopadhyay

## Programmes

1. MSc in Medical Biotechnology and Bioinformatics ( 2 year )
2. Advanced Diploma in Bioinformatics (1 year)
3. PhD

## Faculty members

### *Professors*

#### **Name**

No permanent faculty member

#### **Research Areas**

NIL

### *Associate Professors*

Dr. Sujay Chattopadhyay

Molecular evolution; Phylogenomics; Adaptive convergence; Clonality of microbes; Evolution of virulence and antibiotic resistance

Dr. Sandip Paul

Human microbiome; Comparative metagenomics and methods development; Microbial community structure; Comparative genomics

Dr. Debabani Ganguly

Interactions of intrinsically disordered proteins, mutations and post-translational modifications of disease related proteins, self-assembly of small peptides

### *Assistant Professors*

Dr. Kamakshi Sureka

Host-pathogen interaction; Second messenger signaling; Biosensors; Human microbiome; Cervical cancer

Dr. Rachana Banerjee

Microbial genomic adaptation strategies; Antibiotic resistance associated with nosocomial infection

Dr. Kausik Basak

Image processing; Machine learning; Biophotonics – photoacoustic, multispectral and laser speckle imaging; Medical image analysis

## Department Achievements

- Organized and delivered many webinars and online lectures by eminent personalities from both academia and industries worldwide for students and researchers within and outside JISI ASR, JIS University

- Published research work, one of which is related to COVID-19 which received accolades from both national and international scientific community, including BBC Future news
- Developed a start-up initiative of microbial genome sequencing service named GNF Genomics Solutions as a unit of Guru Nanak Foundation item Faculty member served as a resource person in faculty development program organized by other University
- Designed a new course, Advanced Diploma in Bioinformatics, with an aim to be awarded the facility of Distributed Information Centre by DBT in the near future
- Organized online workshops
- Designed and published freely available webserver hosting bioinformatics software tools and databases
- Organized “Annual Distinguished Lecture Series 2021” to be delivered by nationally and internationally acclaimed scientists

## Research Areas

Bacterial virulence and antibiotic resistance; Big data of pathogen evolution in nature; Biological resource development; Host-pathogen interactions; Human microbiome and metagenomics; Image processing and computer vision; Machine learning in healthcare; Medical microbiology; Medical image analysis; Molecular modelling and drug design

## Academic Performance

### *Academic Performance*

Industry Collaboration	3
International Faculties Hosted by Faculty Members	Nil
International Students Hosted by Faculty Members	Nil
Doctoral Degrees Awarded	Nil
MS Degrees Awarded	2
Fellow - Professional Bodies	Nil
Member - Professional Bodies	2
Editor / Associate Editor	3
Awards & Honours	Nil
Fellowships	3
Sponsored Research Projects	5
Consultancy Projects	Nil
Visits Abroad by Faculty Members	Nil
Plenary / Keynote / Invited - Lectures by Faculty Members	2
Seminars, Conferences and Workshops Organized	17
Short-Term Courses, Training Programmes and Workshops organised	2
Papers Published in Journals	9
Papers Presented in Conferences	Nil

# Chapter 3

## Part B: R&D Activities and Collaborations

### 3.1 Department of Computer Science & Engineering

#### (a) Books

- (i) N. Dey, Ed., Applications of Flower Pollination Algorithm and its Variants, 1st ed. Singapore, Singapore: Springer, 2021.
- (ii) V. Rajinikanth, N. S. M. Raja, and N. Dey, A beginner's guide to multilevel image thresholding. London, England: CRC Press, 2020.
- (iii) K. Raza and N. Dey, Eds., "Translational Bioinformatics Applications in Healthcare. First edition", Boca Raton, FL: CRC Press, 2021. —: CRC Press, 2021.
- (iv) S. K. Das, S. P. Das, N. Dey, and A.-E. Hassanien, Eds., Machine learning algorithms for industrial applications, 1st ed. Cham, Switzerland: Springer Nature, 2020.
- (v) N. Dey eds. Applied Speech Processing : Algorithms and Case Studies, Elsevier, 2020
- (vi) S.Fong et al., "ICT Analysis and Applications: Proceedings of ICT4SD 2020", Volume 2 (Vol. 2). Springer Nature.
- (vii) A. Khanna, et al., "Applications of Big Data in Healthcare 1st Edition Theory and Practice", Academic Press, 2021.
- (viii) S.Borah, et al., " Soft Computing Techniques and Applications Proceeding of the International Conference on Computing and Communication (IC3 2020)", Springer Nature, 2021
- (ix) A. Mukherjee, et al., "Biomedical Sensors and Smart Sensing: A Beginner's ", Academic Press, 2021.
- (x) P.N. Mahalle, et al., " Security Issues and Privacy Threats in Smart Ubiquitous Computing, Studies in Systems, Decision and Control" Springer, 2021.
- (xi) P.N. Mahalle, et al., " The Underwater World for Digital Data Transmission", SpringerBriefs in Computational Intelligence, 2021.

- (xii) K. Raza and N. Dey, Eds., "Translational Bioinformatics in Healthcare and Medicine", Volume 13 1st Edition, Elsevier

(b) Journals

- (i) H. R. Bhapkar, P. N. Mahalle, N. Dey, and K. C. Santosh, "Revisited COVID-19 mortality and recovery rates: Are we missing recovery time period?," *J. Med. Syst.*, vol. 44, no. 12, p. 202, 2020.
- (ii) Y. Kuang et al., "Simplified inverse filter tracked affective acoustic signals classification incorporating deep convolutional neural networks," *Appl. Soft Comput.*, vol. 97, no. 106775, p. 106775, 2020.
- (iii) J. Chaki, N. Dey, B. K. Panigrahi, F. Shi, S. J. Fong, and R. S. Sherratt, "Pattern mining approaches used in social media data," *Internat. J. Uncertain. Fuzziness Knowledge-Based Systems*, vol. 28, no. Supp02, pp. 123–152, 2020.
- (iv) S. Roy, R. K. Gupta, U. Rawat, N. Dey, and R. G. Crespo, "PCHET: An efficient programmable cellular automata based hybrid encryption technique for multi-chat client-server applications," *J. Inf. Secur. Appl.*, vol. 55, no. 102624, p. 102624, 2020.
- (v) J. Chaki and N. Dey, "Palmprint recognition using Hessian matrix and two-component partition method," *Int. j. digit. crime forensics*, vol. 13, no. 1, pp. 26–47, 2021.
- (vi) X.-X. Liu, S. J. Fong, N. Dey, R. G. Crespo, and E. Herrera-Viedma, "A new SEAIRD pandemic prediction model with clinical and epidemiological data analysis on COVID-19 outbreak," *Appl. Intell.*, vol. 51, no. 7, pp. 4162–4198, 2021.
- (vii) G. Maji, D. Mondal, N. Dey, N. C. Debnath, and S. Sen, "Stock prediction and mutual fund portfolio management using curve fitting techniques," *J. Ambient Intell. Humaniz. Comput.*, pp. 1–14, 2021.
- (viii) M. Singh, S. Bansal, S. Ahuja, R. K. Dubey, B. K. Panigrahi, and N. Dey, "Transfer learning-based ensemble support vector machine model for automated COVID-19 detection using lung computerized tomography scan data," *Med. Biol. Eng. Comput.*, vol. 59, no. 4, pp. 825–839, 2021.
- (ix) N. Dey, Y.-D. Zhang, V. Rajinikanth, R. Pugalenth, and N. S. M. Raja, "Customized VGG19 architecture for pneumonia detection in chest X-rays," *Pattern Recognit. Lett.*, vol. 143, pp. 67–74, 2021.
- (x) M. Khosravy, N. Gupta, N. Dey, and P. M. Ger, "Smart green ocean underwater IoT network by ICA-based acoustic blind MIMO OFDM transceiver: With analysis of acoustic channel sparsity and blind estimation efficiency in data rate and energy consumption," *Earth Sci. Inform.*, vol. 14, no. 2, pp. 1073–1081, 2021.
- (xi) M. N. Y. Ali, M. L. Rahman, J. Chaki, N. Dey, and K. C. Santosh, "Machine translation using deep learning for universal networking language based on their structure," *Int. j. mach. learn. cybern.*, vol. 12, no. 8, pp. 2365–2376, 2021.
- (xii) D. Konar, B. K. Panigrahi, S. Bhattacharyya, N. Dey, and R. Jiang, "Auto-diagnosis of COVID-19 using lung CT images with semi-supervised shallow learning network," *Research Square*, 2021.

- (xiii) A. Mukherjee, N. Dey, A. Mondal, D. De, and R. G. Crespo, “iSocialDrone: QoS aware MQTT middleware for social internet of drone things in 6G-SDN slice,” *Soft Comput.*, 2021.
- (xiv) J. Han, D. Wang, Z. Li, N. Dey, R. G. Crespo, and F. Shi, “Plantar pressure image classification employing residual-network model-based conditional generative adversarial networks: a comparison of normal, planus, and talipes equinovarus feet,” *Soft Comput.*, 2021.
- (xv) Q. Wu, N. Dey, F. Shi, R. G. Crespo, and R. S. Sherratt, “Emotion classification on eye-tracking and electroencephalograph fused signals employing deep gradient neural networks,” *Appl. Soft Comput.*, vol. 110, no. 107752, p. 107752, 2021.
- (xvi) M. Biswas et al., “A review on joint carotid intima-media thickness and plaque area measurement in ultrasound for cardiovascular/stroke risk monitoring: Artificial intelligence framework,” *J. Digit. Imaging*, vol. 34, no. 3, pp. 581–604, 2021.
- (xvii) J. S. Suri et al., “A narrative review on characterization of acute respiratory distress syndrome in COVID-19-infected lungs using artificial intelligence,” *Comput. Biol. Med.*, vol. 130, no. 104210, p. 104210, 2021.
- (xviii) M. Biswas Dr, S. Chakrabartty Dr, J. S. Suri Dr, and H. Song PhD, “A novel statistical mechanics-based metric for characterization of text documents,” *Comput. Electr. Eng.*, vol. 87, no. 106812, p. 106812, 2020.
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- (d) Book Chapters Nil
  - (e) Patents Nil
  - (f) Projects Nil
  - (g) Collaborations Nil

## 3.2 Department of Pharmaceutical Technology

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  - (i) Nil
- (b) Journals
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(d) Book Chapters

(i) M. D. Kirtania, N. Kahali, and A. Maity. ”Inulin-based hydrogel,” in *Plant and Algal Hydrogels for Drug Delivery and Regenerative Medicine*, pp. 261–292. Elsevier, 2021.

(ii) K.A. Ali, P. Roy, A. Maity, and P. Chakraborty. ”Tailor-made cyclodextrin-based nanomaterials as drug carriers.” In *Tailor-Made and Functionalized Biopolymer Systems*, pp. 155-200. Woodhead Publishing, 2021.

(iii) A. Mondal, S. Bose, K. Mazumder, R. Khanra. ”Carvacrol (*Origanum vulgare*): Therapeutic Properties and Molecular Mechanisms.” In *Bioactive Natural Products for Pharmaceutical Applications*, pp. 437-462. Springer, Cham, 2021.

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- (vii) A. Paul ,N. Ghosh ,S. Saha , Therapeutic Approach of Marine Drugs in Parkinson's Disease, Handbook of Marine Microbes: The Therapeutic Perspective and Application, Immortal Publications, ISBN: 978-93-5457-895-3
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- (xi)
- (e) Patents Nil
- (f) Projects
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- (g) Collaborations Nil

### 3.3 Department of Agricultural Science

- (a) Books Nil
- (b) Journals Nil
- (c) Conferences Nil
- (d) Book Chapters Nil
- (e) Patents Nil
- (f) Projects Nil
- (g) Collaborations Nil

### 3.4 Department of Bio-Science

(a) Books

- (i) M. Mukhopadhyay, "Biorefinery Production Technologies for Chemicals and Energy", Scrivener Publishing, 2020.

(b) Journals

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- (ii) D. Ghosh et al., "Systems biology approach to screen and identify algae-based alkaline phosphatases as heavy metal-detecting biosensors," in *Lecture Notes in Bioengineering*, Singapore: Springer Singapore, 2021, pp. 431–437.

(c) Conferences Nil

(d) Book Chapters

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- (iii) D. Ghosh, "Current trends in metabolic engineering and synthetic biology for sustainable agriculture" *Proceedings of National Conference on Biological, Biochemical, Biomedical, Bioenergy, and Environmental Biotechnology (AIJR Publisher)*, ISBN: 978-81-947843-4-0; DOI: 10.21467/abstracts.109, pp-61, 2021.
- (iv) S. Das et al., "Isolation of ligninolytic microbial regime from mangrove ecosystem for the bioremediation of lignocellulosic waste generated from jute plant", *Proceedings of National Conference on Biological, Biochemical, Biomedical, Bioenergy, and Environmental Biotechnology (AIJR Publisher)*, ISBN: 978-81-947843-4-0; DOI: 10.21467/abstracts.109, pp-55, 2021.
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- (e) Patents Nil
- (f) Projects Nil
- (g) Collaborations Nil

### 3.5 Department of Chemistry

- (a) Books Nil
- (b) Journals Nil
- (c) Conferences Nil
- (d) Book Chapters Nil
- (e) Patents Nil
- (f) Projects Nil
- (g) Collaborations Nil

### 3.6 Department of Physics

- (a) Books Nil
- (b) Journals
  - (i) J.Manna, G.Biswas, et al., Estimation of summer thermal stresses over eastern and western parts of India. JISU Journal of Multidisciplinary Research (JIS University), vol. 2 no. 1, pp. 26 – 32, 2020.
  - (ii) A. Bhattacharya, et al., "Analysis of the stability parameters in forecasting thunderstorm potential over Dhaka, Bangladesh", JISU Journal of Multidisciplinary Research (JIS University), vol. 2 no. 1, pp. 90 – 97, 2020.
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(c) Conferences Nil

(d) Book Chapters Nil

(e) Patents Nil

(f) Projects Nil

(g) Collaborations Nil

### 3.7 Department of Earth Science

(a) Books Nil

(b) Journals Nil

(c) Conferences Nil

(d) Book Chapters Nil

(e) Patents Nil

(f) Projects Nil

(g) Collaborations Nil

### 3.8 Department of Remote Sensing and GIS

#### (a) Books

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#### (b) Journals

- (i) A. Bhattacharya et al., “High Mountain Asian glacier response to climate revealed by multi-temporal satellite observations since the 1960s,” *Nat. Commun.*, vol. 12, no. 1, p. 4133, 2021.
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- (iv) M. Kneib et al., “Mapping ice cliffs on debris-covered glaciers using multispectral satellite images,” *Remote Sens. Environ.*, vol. 253, no. 112201, p. 112201, 2021.
- (v) O. King, A. Bhattacharya, and T. Bolch et al., “Six decades of glacier mass changes around Mt. Everest are revealed by historical and contemporary images,” *One Earth.*, vol. 3, no. 5, pp. 608-620, 2020.
- (vi) H Rishi, R Ray,” Socio-economic disparity in development of Maldah district, West Bengal: A block level appraisal.” *Journal of Studies in Social Sciences and Humanities*, vol. 6, no. 3, pp. 143-157, 2020.

#### (c) Conferences

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#### (d) Book Chapters

- (i) S. Yadav, C.L. Salui, ” Artificial Neural Network for Identification of Groundwater Potential Zones in Part of Hugli District, West Bengal, India”, *Groundwater and Society: Applications of Geospatial Technology*, pp.247-257, 2021.

#### (e) Patents Nil

- (f) Projects Nil
- (g) Collaborations Nil

### 3.9 Department of Education

- (a) Books
  - (i) K. Mitra, "Future of Education: Learning to Become-(A Global Initiatives how knowledge and Learning can Shape the Future of Humanity)" ISBN- 978-93-82112-74-7.
- (b) Journals
  - (i) S. Mitra, S.R. Samanta, "Difficulties faced by Children in Pursuing Primary Education in Rural Area", international journal of creative research thoughts, vol. 9, no. 3, 2021
- (c) Conferences Nil
- (d) Book Chapters Nil
- (e) Patents Nil
- (f) Projects Nil
- (g) Collaborations Nil

### 3.10 Department of Juridical Science

- (a) Books
  - (i) S. Chatterji, "Competition Law in India and interface with Sectoral Regulators", , 1st Edition Thomson Reuters South Asia Publications, 2020.
- (b) Journals
  - (i) S. Chatterji, "Vodafone and Idea combination approval by CCI was an ideal combination review case", Company Cases, pp. 145 – 147., 2021
  - (ii) S. Kundu, A. Ghosh , "Exploration of Necrophilia as an offence: Myth or Reality", International Journal of Law, Management and Humanities, vol. 4, no. 3, pp. 6143 - 6152, 2020
- (c) Conferences Nil
- (d) Book Chapters
  - (i) A. Ghosh, S. Kundu, "Marital Rape: A Quest for Justice", IWCWEEEE-2020, Edited by- KVJ. Prof. Dr. R. Ganesan, e-ISBN: 978-81-942938-3-5,pp. 81-88, 2021.

(ii) S. Kundu, "Telecom Regulatory Authority v Competition Commission Of India", Contemporary Legal Issues and Challenges, Edited by- Prof (Dr.) Naresh KumarVats ,Black Aviet Publishing , 2020.

(e) Patents Nil

(f) Projects Nil

(g) Collaborations Nil

### **3.11 Department of Hospitality and Hotel Management**

(a) Books Nil

(b) Journals Nil

(c) Conferences Nil

(d) Book Chapters Nil

(e) Patents Nil

(f) Projects Nil

(g) Collaborations Nil

### **3.12 Department of Management**

(a) Books

(i) A. Pandit, S. Das, "A Treatise on Consumer Research", ABS Book, 2021.

(b) Journals

(i) A. Dutta, et al., "Day-of-the-Week and Month of the Year Anomalies in the Indian Stock Market using Multiple Regression Technique", Retrieved from SCOPUS INDEXED International Journal of Management (IJM), vol. 12, no. 5, , pp. 101-111, 2021.

(ii) S. Das, "Service mantra of the Grameen banks of India in the post-merger era," Rajagiri Management Journal, vol. ahead-of-print, no. ahead-of-print, 2021.

(iii) S. Onyeiwu and S. Das, "An empirical analysis of the determinants of bank internationalization: The case of India and Nigeria," in Research in Finance, Emerald Publishing Limited, 2020, pp. 1–18.

(iv) S. Lahiri, et al., "Boond: dynamic capability – creating a BoP energy market", Case Ref. No.: 19/647C, the University of Hong Kong Asia Case Research Centre, 2021.



- (v) S. Lahiri, et al., "Product Development and Innovation: Dynamic capabilities in BoP off-grid Energy market in India", International Journal of Indian culture and business management, Vol.23 No.1, pp.23 - 45.
  - (vi) S. Lahiri, et al., " Conceptual framework of corporate governance and its implementation: inspiration from Sruti and Smrti, in Training Women for Leadership and Corporate Governance -Synthesis of Eastern and Western Practices", Published by National Center for Corporate Governance, Banasthali Vidyapith, supported by national Foundation for Corporate Governance, 2020.
- (c) Conferences
- (i) S. Das et al., "A Comparative Analysis of MSME Act 2006 And 2020 And Its Impact on MSME Sector", Presented in IMC-KIIT, on 27th - 28th February, 2021.
- (d) Book Chapters
- (i) S. S. Das et al., "Effect of Green Marketing on Consumers' Green Purchase Behaviour:A Study on Female Consumers" in "A Treatise on Consumer Research", ABS Book, 2021.
- (e) Patents Nil
- (f) Projects Nil
- (g) Collaborations Nil

### 3.13 Centre for Data Science, JISIASR

- (a) Books
- (i) Nil
- (b) Journals
- (i) SR Islam, R Sinha, SP Maity, **A.K. Ray**, "*Deep Learning on Symptoms in Disease Prediction*", **Machine Learning for Healthcare Applications**, 77-87, 2021.
  - (ii) SR Islam, SP Maity, **A.K. Ray**, "*Compressed sensing regularized calibration-less parallel magnetic resonance imaging via deep learning*", **Biomedical Signal Processing and Control** 66, 102399, 2021.
  - (iii) SR Islam, SP Maity, **A.K. Ray**, "*On learning based compressed sensing for high resolution image reconstruction*", **IET Image Processing**, 2021.
  - (iv) MN Tibdewal, AS There, M Mahadevappa, **A.K. Ray**, M Malokar, "*Performance analysis of power and power variance for classification, detection and localization of epileptic multi-channel EEG*", **Microsystem Technologies** 26 (10), 3129-3142, 2020.

- (v) R Mukherjee, IG Vinod, I Chakrabarti, PK Dutta, **A.K. Ray**, “*Hexagon Based Compressed Diamond Algorithm for motion estimation and its dedicated VLSI system for HD videos*”, **Expert Systems with Applications** 141, 112919, 2020.
  - (vi) Arindam Roy, Shamik Sural, Jaydeep Vaidya, **A. K. Majumdar**, V. Alturi, “*Optimal Employee Recruitment under Attribute Based Access Control*”, **ACM Transaction on Management Information Systems**, 2020.
  - (vii) R. R. Chowdhury, S. Chattopadhyay, **C. Adak**, “*CAHPHF: Context-Aware Hierarchical QoS Prediction with Hybrid Filtering*”, **IEEE Transactions on Services Computing**, DOI: 10.1109/TSC.2020.3041626, 2020.
  - (viii) **C. Adak**, B. B. Chaudhuri, C. T. Lin, M. Blumenstein, “*Intra-Variable Handwriting Inspection Reinforced with Idiosyncrasy Analysis*”, **IEEE Transactions on Information Forensics and Security**, vol. 15, pp. 3567-3579, 2020.
- (c) Conferences
- (i) C. Adak, B. B. Chaudhuri, C. T. Lin, M. Blumenstein, “*Text-line-up: Don’t Worry about the Caret*”, 16th Int. Conf. on Document Analysis and Recognition (**ICDAR**), **Lausanne, Switzerland**, 2021. (accepted)
  - (ii) C. Adak, X. Tao, “*BigyaPAN: Deep Analysis of Old Paper Advertisement*”, 34th Int. Joint Conference on Neural Networks (**IJCNN**), pp. 1-7, **China**, 2021.
  - (iii) C. Adak, B. B. Chaudhuri, C. T. Lin, M. Blumenstein, “*Why Not? Tell us the Reason for Writer Dissimilarity*”, 33rd Int. Joint Conference on Neural Networks (**IJCNN**), pp. 1-7, **Glasgow, Scotland**, 2020.
  - (iv) T. Das, A. Roy, A. K. Majumdar, “*UML Based Modelling for Legal Rule using Natural Language Processing*”, International Conference of Artificial Intelligence and Sustainable Engineering (**AISE**), January 2021, National Institute of Technology Goa, India .
  - (v) K. Barik, S. Das, K. Konar, B. C. Banik, A. Banerjee, “*Exploring User Requirements of Network Forensic Tools*”, in International Conference on Computing System and its Applications (**ICCSA**), 2021.
  - (vi) K. Barik, K. Konar, A. Banerjee, S. Das, A. Abirami, “*Analysis and forecasting of cybercrime incidents in India*”, in ICT for Sustainable Development (**ICT4SD**), Springer, 2021
  - (vii) K. Barik, A. Abirami, S. Das, K. Konar, A. Banerjee, “*Penetration Testing Analysis with Standardized Report Generation*”, International Conference on Integrated Intelligent Computing Communication & Security (**ICIIC**), 2021. (**2nd Best Paper Award**)
  - (viii) K. Barik, K. Konar, A. Abirami, S. Das, A. Banerjee, “*An exploration of Attack Patterns and Protection Approaches using Penetration Testing*”, International Conference on Intelligent Data Communication Technologies and Internet of Things (**ICICI**), Publisher: Springer.
- (d) Book Chapters
- (i) C. Adak, B. B. Chaudhuri, M. Blumenstein, “*A Deep Reinforcement Learning-based Study on Handwriting Difficulty Analysis*”, Book Chapter, Eds. M. Blom

et al., *Advances in Pattern Recognition and Artificial Intelligence*, **World Scientific**, ISBN: 9789811239007, pp. 93-113, 2021.

- (ii) C. Adak, D. Ghosh, R. R. Chowdhury, S. Chattopadhyay, “*COVID-19-affected Medical Image Analysis using DenserNet*”, Chapter 11, Eds. U. Kose et al., *Data Science for COVID-19*, **Elsevier**, ISBN: 9780128245361, pp. 213-230, 2021.

(e) Patents

(i) Nil

(f) Projects

(i) Nil

(g) Collaborations

• **International**

- (i) University of Technology Sydney, Australia
- (ii) CSIRO, Sydney, Australia
- (iii) Institute of Automation, Chinese Academy of Science, China
- (iv) China University of Mining and Technology, Beijing
- (v) Chinese University of Hong Kong, Hong Kong
- (vi) University of Florence, Italy
- (vii) State University of New York Polytechnic Institute, USA

• **National**

- (i) Indian Statistical Institute, Kolkata
- (ii) Indian Institute of Technology Kharagpur
- (iii) Indian Institute of Information Technology Guwahati
- (iv) Indian Institute of Management Jammu
- (v) Techno India University, Kolkata
- (vi) Adamas University, West Bengal
- (vii) BITS Pilani, Hyderabad
- (viii) CHRIST University, Bengaluru
- (ix) Vista Intelligence, Kolkata

### 3.14 Centre for Interdisciplinary Sciences, JISIASR

(a) Books Nil

(b) Journals

- (i) A. Podder, M. M. Joseph, S. Biswas, S. Samanta, K. K. Maiti, and S. Bhuniya, “Amphiphilic fluorescent probe self-encored in plasma to detect pH fluctuations in cancer cell membranes,” *Chem. Commun. (Camb.)*, vol. 57, no. 5, pp. 607–610, 2021.

- (ii) J. Kang et al., “An activatable T1-weighted MR contrast agent: A noninvasive tool for tracking the vicinal thiol motif of thioredoxin in live cells,” *Molecules*, vol. 26, no. 7, p. 2018, 2021.
  - (iii) S. Sarkar et al., “A study on hypoxia susceptibility of organ tissues by fluorescence imaging with a ratiometric nitroreductase probe,” *ACS Sens.*, vol. 6, no. 1, pp. 148–155, 2021.
  - (iv) D. Mukherjee et al., “Host assisted molecular recognition by human serum albumin: Study of molecular recognition controlled protein/drug mimic binding in a microfluidic channel,” *Int. J. Biol. Macromol.*, vol. 176, pp. 137–144, 2021
  - (v) J. Adhikari et al., “Effects of processing parameters of 3D bioprinting on the cellular activity of bioinks,” *Macromol. Biosci.*, vol. 21, no. 1, p. e2000179, 2021.
  - (vi) P. K. Chakraborty, J. Adhikari, and P. Saha, “Variation of the properties of sol–gel synthesized bioactive glass 45S5 in organic and inorganic acid catalysts,” *Mater. Adv.*, vol. 2, no. 1, pp. 413–425, 2021.
  - (vii) J. Adhikari, M. S. Perwez, A. Das, and P. Saha, “Development of hydroxyapatite reinforced alginate–chitosan based printable biomaterial-ink,” *Nano-struct. nano-objects*, vol. 25, no. 100630, p. 100630, 2021.
  - (viii) S. Khatun et al., “Biocompatible fluorescent probe for detecting mitochondrial alkaline phosphatase activity in live cells,” *J. Photochem. Photobiol. B*, vol. 212, no. 112043, p. 112043, 2020.
  - (ix) S. Y. Kim et al., “Self-assembled amphiphilic fluorescent probe: detecting pH-fluctuations within cancer cells and tumour tissues,” *Chem. Sci.*, 2020.
- (c) Conferences
- (i) J. Adhikari et al., ”Chitosan/polycaprolactone based honey/betel loaded biomimetic electrospun scaffold”, International Conference on Environment and Sustainable Development in multidisciplinary areas (GNIT-ICESD 2021). Feb 27-28, 2021.
  - (ii) S. Ghosh et al., ”Shrimps and crustacean shells as the potential source of flame retardants”, International Conference on Environment and Sustainable Development in multidisciplinary areas (GNIT-ICESD 2021). Feb 27-28, 2021.
- (d) Book Chapters
- (i) A. Roy, A. Naskar, A. Ghosh, J. Adhikari, P. Saha, and M. Ghosh, “Hybrid plastics and natural materials,” in Reference Module in Materials Science and Materials Engineering, Elsevier, 2021.
- (e) Patents
- (i) Amino-Si-pyronin compound-based one- or two-photon absorption fluorescent substance and use thereof, K. H. Ahn, H. G. Ryu, Y. W. Jun, K. H. Kim, S. Singha; United States Patent Application Publication, US20200247831 A1; Publication Date: Aug 6, 2020.
- (f) Projects

- (i) Development of smart skin with natural polymer by 3D printing and electrospinning, DST INSPIRE, 35 Lakhs.
  - (ii) Stimulating Paramagnetic (T1-Weighted) GO-Polymeric Hybrid Material as Multimodal Theranostic for Tumor Hypoxia- A Clinically Viable Study, SERB, 53.3 Lakhs.
  - (iii) Polysaccharide-based Activatable Vesicle for Programmed Delivery of Chemotherapeutics to the colon cancer, DST, 31 Lakhs.
  - (iv) Development of Endogenous H<sub>2</sub>S Triggered Fluorescence Modulated Theranostic in Cancer Therapy and Imaging, CSIR, 24 Lakhs.
- (g) Collaborations
- (i) MoU signed Hongik University, South Korea.
  - (ii) MoU signed with Mahatma Gandhi University, Kerala
  - (iii) MoU signed with Enikolopov Institute of Synthetic Polymeric Materials, Russian Academy of Sciences, 117393, Moscow

### 3.15 Centre for Health Science and Technology, JISI-ASR

- (a) Books Nil
- (b) Journals
  - (i) R. Banerjee et al., “Spike protein mutational landscape in India during the complete lockdown phase: Could Muller’s ratchet be a future game-changer for COVID-19?,” *Infect. Genet. Evol.*, vol. 92, no. 104874, p. 104874, 2021.
  - (ii) R. Banerjee et al., “Interplay of various evolutionary modes in genome diversification and adaptive evolution of the family Sulfolobaceae,” *Front. Microbiol.*, vol. 12, p. 639995, 2021.
  - (iii) N. Biswas et al., “Genomic surveillance and phylodynamic analyses reveal emergence of novel mutation and co-mutation patterns within SARS-CoV2 variants prevalent in India,” *bioRxiv*, 2021.
  - (iv) D. Biswas et al., “A prospective study on COVID-19 convalescent plasma donor (CCP) recruitment strategies in a resource constrained blood centre,” *ISBT Sci. Ser.*, no. voxs.12639, 2021.
  - (v) D. Das et al., “Proteasome dysfunction under compromised redox metabolism dictates liver injury in NASH through ASK1/PPAR binodal complementary modules,” *Redox Biol.*, vol. 45, no. 102043, p. 102043, 2021.
  - (vi) C. Lee et al., “Structural specificities of cell surface beta-glucan polysaccharides determine commensal yeast mediated immuno-modulatory activities,” *Nat. Commun.*, vol. 12, no. 1, p. 3611, 2021.
  - (vii) T. Basak, A. K. Dey, R. Banerjee, S. Paul, T. K. Maiti, and R. Ain, “Sequestration of eIF4A by angiotensin: A novel mechanism to restrict global protein synthesis in trophoblast cells,” *Stem Cells*, vol. 39, no. 2, pp. 210–226, 2021.

- (viii) P Bandopadhyay, R D'Rozario, A Lahiri, "Nature and Dimensions of Systemic Hyperinflammation and its Attenuation by Convalescent Plasma in Severe COVID-19." The Journal of infectious diseases, vol. 224, no. 4, pp. 565-574, 2021.
- (c) Conferences Nil
- (d) Book Chapters Nil
- (e) Patents
- (i) S. Chattopadhyay, V. Chattopadhyay, "Methods and tools for determining clonal relatedness and predicting clonal traits", PCT/US19/30948. November 6, 2020.
- (f) Projects
- (i) Automated comprehensive characterization of antibiotic resistance genes from clinical and environmental communities of microbial metagenomes, PI: Dr. Rachana Banerjee and Dr. Kausik Basak, Agency: ICMR
- (ii) Elucidation of cyclic-di-AMP signaling pathway in mycobacteria using chemical proteomics and FRET-based biosensors and its therapeutic implications, PI: Dr. Kamakshi Sureka, Agency: DBT - Welcome Trust.
- (iii) Interactions of Intrinsically Disordered Proteins: A Physics-Based Approach, PI: Dr. Debabani Ganguly, Agency: DBT - Ramalingaswami Fellowship.
- (iv) Par1 and Sgg: un-tango-ling microtubule regulation, PI: Dr. Debabani Ganguly, Agency: DBT.
- (v) Adaptive role of truncation mutations in Salmonella virulence evolution, PI: Dr. Sujay Chattopadhyay. Agency: DBT.
- (g) Collaborations
- **National**
    - (i) CSIR-IICB
    - (ii) Calcutta University
    - (iii) Presidency University
    - (iv) Tata Medical Centre Kolkata
    - (v) Amity University
    - (vi) University of North Bengal
    - (vii) IIT Guwahati
    - (viii) Quadra Medicals Services Pvt. Ltd.
  - **International**
    - (i) University of Washington, Seattle, USA
    - (ii) Kansas State University, Manhattan, Kansas, USA
    - (iii) Technical University of Munich, Germany
    - (iv) Friedrich-Alexander-University Erlangen-Nürnberg, Germany
    - (v) ID Genomics, SPC, Seattle, USA

# Chapter 4

## Part C: Centralized services, Programs and Units

### 4.1 Central Library

The Central Library of JIS University is an integral part of the Institute since its establishment in 2015 in order to cater the academic requirements of the students and faculty members. The JIS University Central Library is well equipped with modern facilities and resources (print and electronic) in the form of online database, micro-documents, books, journals, reports, etc. It has also developed a full-fledged Digital Library equipped with necessary modern equipment in order to provide various digital mode library services. JIS University has one Central Library and two separate departmental libraries i.e., the department of pharmaceutical technology library and the department of juridical sciences library. The University Library houses a Book Bank, with a rich collection of around 1,000 books with yearly addition of around 50 books covering all the disciplines taught in the University. The Digital library is an important part of the JIS University library services. The library has access to DELNET e-Books & Journals, IEEE e-Journals and others free e-books & e-journals.

### Academic Staff

*Professor-in-Charge*

Dr. Mainak Biswas

Assistant Professor (Dept. of CSE)

*Library Staff*

Gurvender Kaur Kandhari

Sr. Library Consultant

Sanjay Mandal

Assistant Librarian

Mr. Sisir Kr Manna

Assistant Librarian Cum Security Head

Sl No	Items Name	Number of Title	Number of Volume
1.	Books	2134	11805
2.	Journals	16	Library have 6 title of Law journals and 10 titles of pharmacy journals, volumes- 104(Year-2018 & 2019)
3.	PhD The- ses	05	05

Sl. No	Name of e-Resources	e-Resources Provider	Publishers	Number of Volume	Subject Cover
1.	e-Journals	IEEE(ASPP) E-Journals	EBSCO International Inc.	205	CSE, BCA, & MCA
		DELNET Journals	DELNET Consortia, New Delhi	2048	All Subject
2.	e-Books (full text)	DELNET Journals	e-DELNET (Free-books4doctors)	486	For pharmacy & medical sc.
3.	CD/DVD	–	–	116	All Subject



## 4.2 Internal Quality Assurance Cell

The Internal Quality Assurance Cell (IQAC) of JIS University was constituted in 2016 with the following and and functionalities:

The primary aim of IQAC is

- To develop a system for conscious, consistent and catalytic action to improve the academic and administrative performance of the institution.
- To promote measures for institutional functioning towards quality enhancement through internalization of quality culture and institutionalization of best practices.

Benefits: IQAC will facilitate / contribute to

- Ensure clarity and focus in institutional functioning towards quality enhancement;
- Ensure internalization of the quality culture;
- Ensure enhancement and coordination among various activities of the institution and institutionalize all good practices;
- Provide a sound basis for decision-making to improve institutional functioning;
- Act as a dynamic system for quality changes in HEIs;
- Build an organized methodology of documentation and internal communication

## Academic Staff

### *Professor-in-Charge*

Prof. Indranil Sengupta	(Vice Chancellor)	Chairman
Prof. H S Maji	(Head, Pharmacy)	Director

### *Staff*

Prof. S Maity	(Head, CSE)	Coordinator
Mr. Simarpreet Singh	(Director, JIS Group)	Management Representative
Prof. Santanu K Sen	(Principal, GNIT)	Academic Expert
Mr. Indrajit Roychowdhury	(Sr. Product Manager, CTS)	Employer Representative
Mr. Tapas Sen	(CEO, TNS Consultancy)	Industry Representative
Dr. S S Tomar	(Asst. Registrar, JIS University)	Sr. Admin Officer, Member
Mr. Gaurav Majumder	(Asst. Registrar, JIS University)	Sr. Admin Officer, Member
Mr. Debabrata Das	(Accounts Off., JIS University)	Accounts Rep., Member
Mr. Muniraj Bhattacharya	(Student, JIS University)	Student Member
Ms. Pallabi Ghoshal	(QC Manager, Palsons Derma)	Alumni Member
Dr. Manua Banerjee	(Head, Earth Science)	Member
Dr. Atanu Kotal	(Head, Chemistry)	Member
Dr. Swadesh R Samanta	(Head, Education)	Member
Dr. Rina Bhattacharya	(Head, Physics)	Member
Dr. Souvik Chatterjee	(Head, Juridical Science)	Member
Dr. Suman Lahiri	(Head, Management)	Member
Dr. Avik A Chowdhury	(Head, Biotechnology)	Member
Dr. S. Banerjee Chattaraj	(Head, Mathematics)	Member
Dr. Pintu Kumar De	(Asso. Professor, Pharmacy)	Member
Dr. Asim Halder	(Asst. Professor, Pharmacy)	Member
Dr. Mainak Mukhopadhyay	(Asst. Professor, Biotechnology)	Member
Mr. Biswajit Das	(Asst. Professor, H & HA)	Member
Dr. Sujay Chattopadhyay	(Head, Centre for Health Science)	Member
Dr. Kausik Basak	(Faculty, Centre for Health Sc.)	Member
Dr. Prosenjit Saha	(Head, CIS, JISIASR)	Member
Dr. Sankar Bhunia	(Faculty, CIS, JISIASR)	Member
Dr. Kamalika Datta	(Asso. Prof., CSE)	Member
Mr. Anjan Chatterjee	(TPO, JIS University)	Member

## 4.3 Training and Placement Cell

### Staff

Anjan Chatterjee

Training & placement officer

Abhidipta Ganguly

Training & placement officer

### Aim

To prepare the young future technocrats to secure their dream job, the T&P Cell provides complete end to end services which include grooming, counseling, and managing their expectations to instill confidence in them to face the realities of their workplace. In the current session, JISU students have made their mark in leading companies around the country. Training & Placement occupies an important position in enhancing image of the University. One of our objective is reaching out to prospective employers to comprehend industry needs. We provide cost effective recruitment solution by matching these needs with the available student's data bank, which is the ultimate goal. Good placements in terms of quality and quantity both to leading recruiters in sufficient numbers enhance the University marketability as an educational service provider brand in the competitive market.

### Objectives

- Avail Suitable Placement opportunities for Final Year students in the Industry , both in terms of numbers and brand quality.
- Provide ample opportunities of Vocational Training during recess vacation for acquiring work exposure.
- Arrange for tie ups with organizations for short duration Internships as part of student curriculum.
- Overall career guidance, organize training workshops on popular trends and technologies which are in vogue in the industry.
- Groom students by imparting soft skills and inherent positive traits as part of a finishing school.

### Roles and Responsibilities

- Corporate Relations ,Organizing - Final Placements / Company Visits / Internships Programs Empanelling & bringing corporate from various sectors for campus recruitment and summer internship projects.
- Fostering proper alumni relations, initiating tie ups with corporate for business development & other activities.

- Running Placement Cell & ensuring Placement assistance and internship to the students.
- Determining & conducting programs to enhance efficiency in operations towards accomplishment of corporate objectives.
- Managing the back office operations of the Placement & Training Department and processing all related data and information and keeping records.
- Internship programs & training by contacting the external sources and alumni.
- Work in the target oriented goal achievement of the campus numbers of placement and quality of recruiters.
- Arrange events, shows & other promotional activities inside the premises of Corporate / factory /Industries, through proper channel approvals.
- Departmental Placement Coordinator Programs , providing feedback from industry for coverage in class and pre-placement workshops .
- Arrange seminars, workshops & conferences on Industry Trends and needs.

## Placements

<b>Program</b>	<b>Placements</b>
B.Pharm	43
D.Pharm	18
B.Tech (CSE)	10
M.Sc. Biotechnology	3
B.Sc. Biotechnology	1
M.Sc. Microbiology	1
B.Sc. Microbiology	1
MBA	6
BBA	2
LLB	0
B.Sc. Geology	0
B.Sc. Physics	0
M.Sc. Chemistry	0
M.Sc. Applied Geology	0
M.Sc. RS & GIS	0
B.Ed	0
<b>Total</b>	<b>85</b>

## 4.4 Central Research Facility

### Academic Staff

*Professor-in-Charge*

Dr. Mainak Mukhopadhyay Associate Professor, Bio-Science Department

At JIS University research is considered to be an important constituent of academics, and as such boasts of a strong PhD programme. There are a number of research laboratories spread across the various departments to support the varied research activities. In addition, there is a central research facility that contains a number of high-end computational servers to cater to computation intensive tasks. There is also a PARAM Shavak super-computing facility that is used by faculty members and research scholars of various Departments to perform tasks like optimization, search, simulation, etc. Researchers and faculty members from various department collaborate with each other and also with other Institutes for carrying out multidisciplinary activities. A unique research infrastructure has also been set up at Institute of Advanced Studies and Research under JIS University, where various state-of-the-art equipment required to carry out cutting edge research in genomics, health science, interdisciplinary science, etc. are available.

## 4.5 Alumni Affairs

### Academic Staff

#### *Professor-in-Charge*

Victor Roychowdhury

Assistant Professor, Department of Pharmaceutical Technology, JIS University

#### *Working Committee*

Purbaditya Nath

President

Puspendu Naskar

Vice- President

Muniraj Bhattacharya

Secretary

Prasanta Mitra

Treasurer

Aniket Ray Chaudhuri

Additional Secretary

Abhishek Jana

Accountant

Rishita Roy Chowdhury

Social Media Wing

Aniket Jaiswal

Social Media Wing

Raima Kundu

Social Media Wing

Ritwik Degharia

Executive Members

Sushreya Dutta

Executive Members

Sudipto Mangal

Executive Members

Akash Das

Executive Members

Indranil Banarjee

Executive Members

Suryajyoti Saha

Executive Members

### Total Number of Alumni Members till date:

535

### Aims & Objectives

- Keeping a register of all Alumni of the university and their relevant data
- Maintaining updated information of all Alumni of the institution
- Encouraging and promoting close relations among the alumni
- Promoting a sense of belonging to the Alma Mater among the Alumni
- Providing information regarding the Alma Mater, its graduates, faculties and students to the Alumni
- Assisting and supporting the efforts of JIS University in obtaining funds for development
- Guiding and assisting Alumni who have recently completed their courses of study at the JIS University to keep them engaged in productive pursuits useful to the society

- Providing a forum for the Alumni for exchange of ideas on academic, sports, cultural and social issues of the day by organizing and coordinating reunion and annual alumni meet of the Alumni
- Organizing Annual Alumni Meet, Annual Alumni Sporting Events, Cultural Events

## 4.6 Entrepreneurship Cell

The Primary responsibility of the cell will be to promote innovative thinking amongst faculty and students through conduction of awareness programs, liaising with different types of investors including angel investors

### Academic Staff

*Professor-in-Charge*

Dr. Suman Lahiri

HOD, Management

### Activities

The Entrepreneurship cell has communicated with different entities nationally and internationally within a short tenure. These includes Delegation of the European Union to India, New Delhi, Cleantechology Cluster- Cleantuesady, Paris, and a Swedish SME, amongst others. The communications target to forge relationships to bring in project, partnerships, funds and incubation opportunities.

The Enterprenuership cell intends to work with the Indian Innovation Council Platform of the JIS University to create different activities surrounding entrepreneurship.



# Chapter 5

## Part D: Statistics

Table 5.1: Student intake in 2020-21

Sl	Course Name	Sanctioned Seats	Admissions Offered	Actually Admitted
<b>Department of Computer Science and Engineering</b>				
1.	B.Tech	120	61	52
2.	B.Tech (Lat)	10	6	6
3.	BCA	60	9	7
4.	PhD	NA	2	2
<b>Management</b>				
5.	BBA	60	41	39
6.	BBA-MBA	60	3	3
7.	BHM	60	3	3
8.	MBA	60	13	12
9.	PhD	NA	3	3
<b>Law</b>				
10.	BBA-LLB	120	47	47
11.	LLB	120	27	26
12.	LLM	25	8	7
13.	PhD	NA	2	2
<b>Science</b>				
14.	B.Sc Microbiology	30	23	20
15.	M.Sc Microbiology	18	53	52
16.	PhD Microbiology	NA	2	2
17.	B.Sc Biotechnology	30	48	47
18.	M.Sc Biotechnology	18	48	46
19.	PhD Biotechnology	NA	2	2
20.	B.Sc Chemistry	30	6	4
21.	M.Sc Chemistry	18	6	6
22.	PhD Chemistry	NA	2	2
23.	B.Sc Physics	30	2	2
24.	M.Sc Physics	18	10	9

*Continued on next page*

<i>Continued from previous page</i>				
Sl	Course Name	Sanctioned Seats	Admissions Offered	Actually Admitted
25.	PhD Physics	NA	0	0
26.	B.Sc Geology	30	14	13
27.	M.Sc Geology	18	1	1
28.	PhD Geology	NA	0	0
29.	<b>M.Sc Remote Sensing</b>	18	26	25
30.	PhD Remote Sensing	NA	1	1
31.	PhD Mathematics	NA	1	1
32.	B.Sc Agriculture	120	19	18
<b>Education</b>				
33.	B.Ed Education	100	91	90
34.	M.A. Education	NA	NA	NA
35.	PhD Education	NA	5	5
<b>Pharmaceutical Technology</b>				
36.	B.Pharm	100	102	100
37.	<b>B.Pharm (Lat)</b>	10	17	12
38.	D.Pharm	60	61	60
39.	BMLT	60	88	85
40.	PGDBM Pharmacovigilance	40	14	14
41.	M.Pharm (Pharmaceutics)	9	9	9
42.	M.Pharm (Pharmacology)	9	6	6
43.	PhD (Pharmacy)	NA	10	10
44.	PhD - Oral & Dental Science	NA	4	4
<b>Centre for Data Science, JISIASR</b>				
45.	M.Tech. in CSE (w/spl in Data Science)	10	4	4
46.	M.Tech. in Data Science	10	6	6
47.	Ph.D.	-	14	14
<b>Centre for Interdisciplinary Sciences, JISIASR</b>				
48.	MSc Polymer Science and Technology	10	6	4
49.	PG Diploma in Analytical Science and Technology	-	-	-
50.	Ph.D.	-	5	5
<b>Centre for Health Science &amp; Technology, JISIASR</b>				
51.	MSc in Medical Biotechnology and Bioinformatics	18	13	11
<i>Continued on next page</i>				

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Sl	Course Name	Sanctioned Seats	Admissions Offered	Actually Admitted
52.	MTech in Bioinformatics	15	1	0
53.	Advanced Diploma in Bioinformatics	-	-	-
54.	Ph.D.	-	3	2
<b>Hospitality &amp; Hotel Management</b>				
55.	B.Sc in Hospitality and Hotel Administration	180	130	118
56.	Diploma in Hotel Operation	60	50	28
57.	BA International in Culinary	60	40	32
58.	MBA in Hospitality and Hotel Administration	60	39	33
<b>Total</b>		1884	1207	1112