

# PROSPECTUS

Ph. D. Programmes Spring 2015



**TEZPUR UNIVERSITY**

*(A Central University)*

[www.tezu.ernet.in](http://www.tezu.ernet.in)

**Napaam, Tezpur, Assam 784028**

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**NOTE :** This Brochure does not create a binding contract between the University and the students. Various provisions mentioned in the Brochure are subject to change. University regulation, circular and/or notification issued at a later date are liable to supersede the provisions mentioned in this Brochure.



*“Education is not the learning of facts, but the training of the mind to think”*

— Albert Einstein

**SECTION ONE**

**TEZPUR UNIVERSITY**

## ABOUT THE UNIVERSITY

Tezpur University was established on 21<sup>st</sup> January in 1994 by an Act of Parliament of India, *The Tezpur University Act, 1993 (Act No. 45)*, as a non-affiliating and residential Central University. The University is located at Napaam, about 15 Km. east of Tezpur town in the Sonitpur District of Assam. The sprawling, serene and green University Campus of about 262 acres provides the best of atmosphere including modern infrastructure conducive for learning and dedicated research. The academic programmes offered in the University have a distinct focus on science, technology and humanities, reflecting the objective of the University. At present the University offers Doctor of Philosophy programme in 17 disciplines.

During the last twenty years of its existence, the University has engaged itself in the process of capacity building, both in terms of infrastructure and human resource development. The University has mounted tremendous efforts in developing it into a modern university incorporating all elements from the contemporary scientific and socio-cultural milieu.

The University has already developed a number of state-of-the-art laboratories, computing facilities, internet connectivity, a dedicated power supply system and a relatively small but rich library having connectivity to several digital libraries. While students' accommodation is provided in 13 well-designed hostels, several residential quarters have been built for accommodating teachers and non-teaching staff. Other basic amenities like dedicated power supply with DG backup, central water supply, campus security, guest house, canteen, gymnasium, outdoor & indoor sports facilities, post office, banks with ATMs, schools, etc. are also available to cater to the various needs of the university community.

Being a Central University, the University is privileged to receive funds from the Ministry of Human Resource Development, Government of India, through the University Grants Commission. Assistance has also been received from the Non-Lapsable Central Pool of Resources of the Government of India. Faculty members of different academic Departments have been able to earn a large number of research projects worth crores of rupees from different sources. The University promotes industry-academy alliance and the existence of a few prestigious industry sponsored projects in the University bear testimony to this.

## FACILITIES AND SERVICES

The University offers the following facilities and services for the students and research scholars.

### **University Library:**

The University offers a Central Library with a rapidly increasing collection of books, periodicals and journals. Central library holds 55423 books, 7884 back volumes, active subscription to 128 print journals, and 18 online Databases. The UGC-Infonet Consortia of INFLIBNET Center is providing free access to about 10,000 e-journals and 11 online Databases. The DelCon DBT e-library Consortium has also provided access to 115 e-journals. The library holds 1834 CD/ VCDs. Library users can access book database, theses database, journal database, e-journals and other e-resources from any terminal within the University campus.

### **Computing Facilities:**

The University started using computers from its very inception both in its academic and administrative activities. The University has elaborate computing facilities accessible to the students. There are two clusters of modern state-of-the-art Computer Centre situated appropriately within the campus for use by the students and research scholars in addition to the Departmental computer laboratories. Apart from a large number of PCs and several servers, all connected to the high speed campus LAN, the Centre also has a 4-processor SGI ALTIX-350 server. The campus LAN is connected to the Internet through 1-Gbps National Knowledge Network (NKN) optical fiber link. It also has a 2-Mbps leased line for Internet as a backup link.

**Hostel Accommodation:**

The University has separate hostels for boys and girls adequate to accommodate all students and research scholars. In total there are 7 women's and 6 men's hostels comprising of more than 3300 capacity.

**Scholarships:**

Tezpur University also offers an Institutional fellowship to Ph.D. students having consistently good academic career.

**Health Services:**

The University has a Health Centre to provide basic medical services with its own medical and paramedical staff. The Health Centre is manned by three full-time highly qualified physicians. Besides, specialist doctors like radiologist, gynecologist and psychologist regularly visit the University in a weekly basis. The students are also provided with the benefit of health insurance scheme. The newly admitted students below the age of 35 will be covered under the insurance from January 2015.

**Games and Sports:**

The University provides opportunities for students to excel in various departments of sports. The University has basketball, badminton, volleyball and tennis courts, cricket and football grounds with playing facilities under flood light, and a well-equipped multi gymnasium. The University has recently added facilities for Archery with training facility

**Tezpur University Alumni Association (TUAA):**

TUAA was formed in the year 2000 to create a network of the alumni of the University. The Association aims to build an active network among the alumni of the University.

**Academic Calendar:**

The University strictly adheres to a well-planned academic calendar specifying the schedule of academic activities. All events including the examinations are held strictly according to this calendar. Prospective students are advised to go through the current calendar to get acquainted with the academic events of the University. The academic calendar for the year 2015 is available in the URL- <http://www.tezu.ernet.in/academic/calendar-2015.pdf>

<b>CURRICULUM</b>
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Each academic programme is designed to provide enough flexibility in the choice of courses for the students. The courses across the Departments have been designed in such a way that multiple teaching pedagogies could be incorporated easily for delivering the syllabus. Besides the compulsory (core) courses for each of the programmes, the students also have the option to choose courses of their own interest from the elective courses. Students will be required to register some inter disciplinary courses as per their choice under the Choice Base Credit Transfer (CBCT) mechanism. This is a unique feature of the academic programmes of this University.

**Instruction Methodology:**

The medium of instruction / examination in the University at all levels is English. In framing the courses, care has been taken to see that they are NOT burdened with formal lectures only. There is adequate provision for seminars, tutorials, case studies, guided field work, etc., whatever necessary, to promote the habit of independent thinking.

**Evaluation system:**

The students are evaluated following relative grading system which is basically internal. In order to make sure that the students do not have to rely on any one or two major examinations for evaluation the University follows a continuous and comprehensive evaluation system, where the tests and assignments are spread across the entire semester. A relative Letter Grade is awarded on the basis of continuous internal assessment through class tests, assignments, seminars, term tests etc.

A Letter Grade signifies the level of standard of qualitative/quantitative academic achievement, which a student attains in a particular course/ research work. Each of the Letter Grade represents a Grade Point as tabulated below. The letter grades A+ to D are considered as *Pass grades* and F is considered as *Fail grade*.

<b>Letter Grade</b>	<b>Grade Point</b>	<b>Description</b>
A+	10	Outstanding
A	9	Excellent
B+	8	Commendable
B	7	Very Good
C+	6	Good
C	5	Average
D	4	Marginal
F	0	Poor

In addition there are other grades as stated below:

<b>Letter Grade</b>	<b>Status</b>	<b>Remarks/Context</b>
I	Incomplete	Letter grade assigned in case any evaluation component remains to be completed due to an extraordinary situation (conforming to the relevant provision in the Regulations for Academic Matters) faced by the student. This grade must be converted to any of the regular grades above within the first month of beginning of the following semester by completing the remaining evaluation component(s).
W	Withdraw	Letter grade assigned if (i) a student withdraws from a course after the last date for withdrawal of course and (ii) deficient of required attendance.

**Course registration and attendance:**

The student shall register for the course /project/ research work(s) for a particular semester by filling-in the registration card. A course adviser appointed by the Head of the Department (HoD) shall assist the student in the selection of the courses for the semester. The registration card duly signed by the student and countersigned by the course adviser and the HoD shall be submitted to the Controller of Examinations. One copy each of the form shall be made available to the Dean of Students' Welfare, Head of the Department, and the student concerned.

NOTE: Detailed academic calendar is available in the University website.

### **STUDENTS' CODE OF CONDUCT**

Students are to follow discipline as prescribed in the regulations on Maintenance of Discipline of the University. Violation of any clause by any student may lead to disciplinary action as per the regulations.

**Tezpur University is Ragging Free University. Ragging in any form is strictly prohibited inside or outside the University. Students found indulging in ragging shall be subjected to punishment as per rule.** Candidates are advised to visit the website: [www.ugc.ac.in](http://www.ugc.ac.in) or [www.tezu.ernet.in](http://www.tezu.ernet.in) for UGC Regulations on curbing the menace of ragging in Higher Educational institutions, 2009.

### **IMPORTANT ACADEMIC RULES**

#### **Course registration:**

The courses opted by the students in a particular semester are to be registered on some specific date(s). For newly admitted students, registration of courses will be done on January 16 and 19, 2015.

#### **Attendance requirement:**

All students must attend every lecture, tutorial and practical classes, of the course registered by him/her. However, to account for late registration, sickness or such other contingencies, the attendance requirement will be a minimum 90% of the classes. Students with deficiency in attendance in a course will be awarded W (withdrawn) grade in the course.

#### **Renewal of admission:**

Every student will renew his/her admission in the successive semesters on the notified dates. No student is allowed to get himself/herself admitted after the scheduled date.

### **ADMISSION PROCEDURE**

Interested eligible candidates may APPLY ONLINE through the University Website by paying a fee of Rs. 250/- for SC & ST and Rs. 500/- for other categories of candidates. Additional bank charge may apply.

The candidates are required to fill-up the application form online in the University website [www.tezu.ernet.in](http://www.tezu.ernet.in). Candidates should read and follow the instructions (that is available in the website) carefully while filling up the relevant columns of the online application form. On completion of the entire filing in process, the applicant is required to take a print-out of the form and the bank challan with all filled in data. The fee is to be deposited in the relevant **Powerjyoti account with the State Bank of India** through the printed challan. The printed form along with the receipt of the fees deposited and other relevant documents (as given at the end of the form) is to be sent to the head of the relevant department before the last date. Please note that the relevant copy of the bank challan (generated during the online process) shall be stamped and a journal number shall be entered by the bank. This journal number must be entered in the relevant column to complete the process of online form filling.

**Student's copy of the challan must be produced at the office of the concerned Department on the day of the entrance test/interview.**



**SECTION TWO**

**Ph.D. PROGRAMME**

## Ph.D. PROGRAMME

The following departments of Tezpur University offer Ph.D. programme .

1. Business Administration
2. Chemical Sciences
3. Civil Engineering
4. Computer Science and Engineering
5. Cultural Studies
6. Electronics and Comm. Engineering
7. Energy
8. English and Foreign Languages
9. Environmental Science
10. Food Engineering and Technology
11. Hindi
12. Mass Communication and Journalism
13. Mathematical Sciences
14. Mechanical Engineering
15. Molecular Biology and Biotechnology
16. Physics
17. Sociology

Some important informations regarding the Ph.D. programme of the University are highlighted below. Detail regulations currently in force may be perused in the document “Ph.D. Rules and Regulation” available in the University website under the link Academic Regulations.

### COURSE WORK, COURSE REGISTRATION AND ATTENDANCE REQUIREMENT

#### **Course Work:**

A student admitted to the Ph. D. programme shall be required to complete specified course work prior to the submission of Plan of Research as per the recommendation of the Departmental Research Committee (DRC)/ Research Committee for Centre (CRC). Currently the scholars are required to complete a total of 16 credits (1 credit generally consists of one hour lecture/ tutorials or two hours of practical in a week). As a revolutionary step initiated by the University towards implementation of Choice Based Credit Transfer (CBCT) system out of the stipulated credit requirement 4 credit should be from another Department. The course work should be completed within the first two Semesters. However, employed part-time candidates shall be given the option of carrying out the course work during any two of the first three semesters.

In order to continue research a candidate must secure a CGPA (Cumulative Grade Point Average) of 6 or more.

During the course work, students shall report at the Department/Centre regularly and attend classes or do assigned tasks.

#### **Course registration:**

The Courses opted by the students in a particular Semester are to be registered on the specified date(s). For newly admitted students, registration of courses shall take place during 16-19 January 2015 along with the Admission formalities.

#### **Attendance requirement:**

All students including Ph.D. scholars must attend every lecture, tutorial and practical classes of the course registered by him/her. However, to account for late registration, sickness or other such contingencies, the attendance requirement will be a minimum 90% of the classes. Students with deficiency in attendance in a course will not be allowed to appear in the Term-end examination and will be assigned W grade in the course.

**Renewal of admission:**

Every student will renew his/her admission in the successive Semesters on or before the notified dates. No student is allowed to get himself/herself admitted after scheduled date.

**Monitoring the progress of research:**

During the period of research work scholars shall be in touch with their supervisors and give at least one seminar in each semester on experiments/ field work/ library work completed during the Semester. Except for part-time students, other categories of students shall be generally available in the Department/ Centre unless they are engaged in experiments/ field work/ library work elsewhere with prior permission of the supervisors.

### CATEGORIES OF CANDIDATES

The University shall admit Ph. D. students under the following categories:

- a) Full Time:** Students under this category shall work full time for the Ph. D. courses/ research. They may apply for fellowship/assistantship available from different funding agencies.
- b) Sponsored:** Candidates may be sponsored by recognised R&D organisations, national institutions, other universities, government organizations or industries. They shall be admitted through the normal process, and they shall not be entitled to any fellowship/assistantship from the University. They shall work full time for the Ph.D. courses/research.
- c) Project Fellows:** Students working on different research projects at Tezpur University may be admitted to the Ph.D. programme provided they satisfy the eligibility criteria, subject to the consent of the Principal Investigator of the project.
- d) Part Time\*:** Candidates employed in academic institution /University (including Tezpur University)/ R&D organizations may be considered for admission into the Ph. D. programme of Tezpur University, following the normal admission procedure. They shall fulfil the stipulated requirements for Ph. D. admission.

**\*The University encourages full time scholars and as such the applicants shall be admitted as Part-time scholars only in exceptional cases.**

**Eligibility for Admission:**

Master's Degree in Humanities and Social Sciences/ Management Sciences/ Science/ Engineering/ Technology or Master's degree in the allied subject with consistently good academic record and minimum of 55% marks or an equivalent CGPA in the Master's Degree/ B. E./ B. Tech. with an aggregate of 80% marks or equivalent CGPA with valid GATE score.

A fellowship in Chartered Accountancy/ Company Secretary-ship from a recognized Indian or foreign institution with not less than 60% of marks or equivalent CGPA having a minimum of Bachelor's Degree.

Relaxation in requisite qualifications for SC/ST candidates shall be followed as per Central Govt. rules.

For detail Department-wise eligibility criteria one may consult the table given hereunder. It may please be noted that mere fulfilment of the minimum eligibility criteria does not guarantee shortlisting of the candidate for the Admission Test. For detail one may contact the Department and/or its website.

### ADMISSION TEST AND SELECTION

The names of the shortlisted candidates who are eligible for appearing in the Admission Test will be published in the University website along with the specific selection procedure to be followed by the Department. The list shall be published within a reasonable time ahead of the test date(s). No separate call letters or Admit Card shall be sent to shortlisted candidates. The test dates are given in the Annexure -II.

Final selection of candidates will strictly be done on merit based on performance in the Admission Test followed by personal interview.

The Departments follow individual selection procedure and as such the candidates may consult the Department and its website for specific information on selection tests etc.

**Requisite qualifications for admission into various disciplines of Ph. D. programmes**

School	Department	Qualification
<b>Engineering</b>	<b>Civil Engineering</b>	M.E./M.Tech. /M.Sc.( Engg) in Civil Engg. Or allied areas, or M.Sc. in relevant discipline with very good academic records, or B. E./B. Tech with 80% marks in aggregate or equivalent CGPA with a valid GATE Score .
	<b>Computer Science and Engineering</b>	M. Tech. in Computer Science/ I.T./ Electronics MCA M. Sc. in Computer Science/ I.T. B. E./B. Tech. with 80% marks in aggregate or equivalent CGPA with valid GATE score.
	<b>Electronics and Communication Engineering</b>	M. E. / M. Tech. / M. Sc. Engg. / M. S. in Electronics/ Communication/ Electronics Design/ Electrical/ Instrumentation / Control/ Microwave /Biomedical/ Bioelectronics/ Bio-Technology/ Computer Science/ Information Technology. M. Sc. in Electronics/ Physics/ Applied Mathematics. MCA with Physics, Chemistry and Mathematics in Bachelor degree, MBBS with MD/ MS degree. B. E. / B. Tech. with 80% marks in aggregate or equivalent CGPA with valid GATE score.
	<b>Food Engineering and Technology</b>	M. Sc. /M. Tech. / M. E. in Food Tech/Food Processing Technology/ Food science and Technology / Food and Nutrition / Microbiology / Food Microbiology / Biochemistry / Chemistry / Biotechnology/ Food Engineering/ Applied Microbiology/ Dairy engineering/ Food Biotechnology Engineering. B. E. / B. Tech. with an aggregate of at least 80% marks or equivalent CGPA.
	<b>Mechanical Engineering</b>	M. E. / M. Tech. / M Sc. (Engg.) in Mechanical Engg. or allied areas. B. E. /B. Tech with 80% marks in aggregate or equivalent CGPA with a valid GATE Score.
	<b>Energy</b>	M. Sc. / M. E. / M. Tech. degree in Energy Technology/ Energy Management/ Energy related Engineering & Technology/ Physics/ Chemistry/Agriculture/ Allied subjects.
<b>Humanities &amp; Social Science</b>	<b>Cultural Studies</b>	M. A. in any of the disciplines in Humanities or Social Sciences with a uniformly good academic career. Candidates with UGC JRF, UGC NET or NE SET will be given preference
	<b>English and Foreign Languages</b>	M. A. in English (specialization may be in Literature, English Language Teaching or Linguistics) M. A. in Linguistics
	<b>Hindi</b>	M. A. in Hindi
	<b>Mass Communication and Journalism</b>	M. A. in Mass Communication, Mass Communication & Journalism/ Communication. Master of Mass Communication (MMC). Master of Journalism & Mass Communication (MJMC). Master of Science in Communication (M. S. Communication). M. Sc. Communication. Master of Journalism.
	<b>Sociology</b>	M.A./M.Sc. in Sociology / Cultural Studies / Anthropology (with specialization in Social Anthropology) / Economics / History / Political Science / Philosophy / Mass Communication / English / Law / Management/ Social Work.

School	Department	Qualification
Management Sciences	Business Administration	M. B. A. M. Com. M. A. / M. Sc. in Economics M. A. in Psychology/ Sociology/Social Work/Cultural Studies M. C. A. M. T. M. / M. T. A. FCA/ FCS/ FCMA
Sciences	Chemical Sciences	M. Sc. in all branches of Chemical Science/ Physics/Nano Science/ Material Science/ Biotechnology/ Biochemistry/ Bioinformatics/ Environmental Science. M. E./M. Tech. in allied subjects (Chemical Engineering/ Polymer Technology/ Material Sciences/ Environmental Engineering, etc.); B.Tech. in Chemical Engineering/ Polymer Technology/ Material Sciences/ Environmental Engineering, etc. with 80% marks in aggregate or equivalent grade.
	Mathematical Sciences	M. A. / M. Sc. degree in Mathematics/ Statistics/ Physics/ Computational Seismology/ Economics with requisite background in Mathematics.
	Molecular Biology and Biotechnology	M. Sc. in Biotechnology/Molecular Biology/Molecular Biology and Biotechnology/Biochemistry/Microbiology/Genetics/Plant Breeding/Agriculture Biotechnology/Life Sciences/Botany /Zoology/Applied Botany/Biophysics/Bioinformatics. M. Tech. in Biotechnology, Bioinformatics, Food Processing Technology, Biochemical Engineering/M. Pharma /M. V. Sc./ M. F. Sc. /M. D./M. B. B. S. with 80% or equivalent GPA/M. Sc. in Nanoscience& Technology.
	Physics	M. Sc. in Physics/ Electronics/ Geophysics/ Material Science/ Applied Mathematics/ Nano Science & Technology/ Biotechnology/ Environmental Science and Chemical Science. M. Phil., M. Tech in Solid State Material/ Materials Science/ Electronics/Energy/ Nanoscience and Technology/ Biotechnology/ Environmental Science and Chemical Sciences. B. Tech. in Engineering Physics with 80% marks in aggregate or equivalent CGPA.
	Environmental Science	M. Sc. in Environmental Science / Botany / Applied Botany / Chemistry / Physics / Zoology / Earth Sciences / Life Sciences/ Agro-Forestry M. Sc. (Agri) in Crop Physiology / Biochemistry / Horticulture / Agronomy / Soil Science / Meteorology M. Sc. in Agricultural Sciences.

Seats are reserved for SC/ST/ OBC (NCL), Kashmiri Migrant and Person with Disability (PWD) candidates as per central government rules. PWD candidates with at least 40% permanent disabilities will only be considered.

#### Direct Admission:

Candidates with B.Tech. degree from Tezpur University in Computer Science and Engineering, Electronics and Communication Engineering, and Mechanical Engineering with an aggregate of at least 80% marks or equivalent CGPA in relevant branch may apply for direct admission to Ph.D. programme

#### Recognised supervisors of Tezpur University and their areas of specialization :

The names of available supervisors and their areas of research interests have been indicated in the Departmental Profile in Section Three. For detail information, candidates may browse through the specific faculty's webpage available in [www.tezu.ernet.in](http://www.tezu.ernet.in).

**SECTION THREE**

**DEPARTMENTS**

At present Tezpur University has 20 different departments and centres under the umbrella of four schools of studies. The school wise distribution of department/ centre is given below:

**1. School of Engineering:**

- (a) Department of Civil Engineering
- (b) Department of Computer Science and Engineering
- (c) Department of Electronics and Communication Engineering
- (d) Department of Energy
- (e) Department of Food Engineering and Technology
- (f) Department of Mechanical Engineering

**2. School of Humanities and Social Sciences:**

- (a) Department of Cultural Studies
- (b) Department of English and Foreign Languages
- (c) Department of Hindi
- (d) Department of Mass Communication and Journalism
- (e) Department of Social Work
- (f) Department of Sociology

**3. School of Management Sciences:**

- (a) Department of Business Administration
- (b) Department of Commerce
- (c) Centre for Disaster Management

**4. School of Sciences:**

- (a) Department of Chemical Sciences
- (b) Department of Environmental Science
- (c) Department of Mathematical Sciences
- (d) Department of Molecular Biology and Biotechnology
- (e) Department of Physics

The alphabetical departmental profiles along with the faculty and their areas of specialisations are given in this section from the next page.

## BUSINESS ADMINISTRATION (Year of Establishment: 1995)

The Department of Business Administration came into existence in 1995 with the objective of producing quality management professionals and carrying out research in the areas of Finance, Human Resources, Marketing, Production and Systems Management. The Department also offers PG Diploma in Tourism Management. The Department is rated A3 by AIMA in the year 2012. The department is awarded 3rd Asia's Best B-school award for its innovation in teaching methodology in 2012, rated A+ by Business India, rated A by Discovery Education Media for 2012-13 and recipient of "Best Business School Award" in the category of placement (NE Region) awarded by Bureaucracy Today. The Department is a recipient of research grant under the UGC Special Assistance Programme DRS-I

### Programmes offered

1. Master of Business Administration (MBA)
2. P G Diploma in Tourism Management
3. Ph. D.

### Faculty and Areas of Interest:

#### Professors

*Sarma, M. K., Ph.D. (TU)	<i>Service Marketing.</i>
*Goswami, Chandana., Ph.D. (GU)	<i>Financial Management, General Management.</i>
*Sarkar, S. S., Ph.D. (TU)- Dean, SoMS	<i>Accounting, Taxation, Social Development Issues.</i>
*Das, D., Ph.D. (RGU)-HoD	<i>Financial Management, Financial Markets and Development Finance.</i>
*Goswami, Chandan., Ph. D. (TU)	<i>Marketing and Promotional Strategies, Consumer Behaviour, Tourism</i>
*Baruah, P., Ph. D. (TU)	<i>Change Management and Human Resource Management, Organization Behaviour, Rural Development</i>

#### Associate Professors

*Sarma, T. R., Ph.D. (TU)	<i>Systems Management, Operations, Project Management, Tourism.</i>
*Bhuyan, A., Ph.D. (TU)	<i>Economics, Tourism Management, Entrepreneurship, Business Ethics.</i>
\$Roy, A., Ph. D. (TU)	<i>Microfinance, Stock Market, Financial Derivatives</i>

#### Assistant Professors

Barpujary, H., Ph.D. (TU)	<i>Knowledge Management, E-Commerce, Web Technology.</i>
Mahanta, K., Ph.D. (DU)	<i>Human Resource Management, Employee engagement, Work life balance.</i>
Das, R., Ph.D. (GU)	<i>Marketing, Rural Marketing.</i>
Dutta, M., MBA (TU)	<i>Leisure, Intellectual Property Rights, Community Models.</i>
Tiwari, R.K., M.Com. (GU)	<i>Accounting, Business Regulations Framework</i>

#### \*Recognized Supervisor \$Associate Supervisor

**LEGENDS:** TU- Tezpur University, GU- Gauhati University, DU- Dibrugarh University, RGU- Rajiv Gandhi University, Itanagar, SoMS- School of Management Sciences, HoD- Head of the Department.



**Facilities :**

The Department is well equipped with modern educational facilities like state of the art computer laboratory and instructional audio-visual aids including LCD projector etc. The Department has an air conditioned board room for facilitating case study, group discussion etc.

**Research Activity:**

No. of papers published in the year 2014 (up to September): **10** (Journal)

No. of ongoing research project/consultancy: **3**

**Selected publications:**

1. Das, D. & Dutta, P (2014). Regulating micro finance institutions in South Asia: Issues and challenges with special references to India, Vinimaya (NIBM), Vol. XXX5, no. 1, s-24
2. Goswami, C(handana). (2014). Credit preference of micro and small enterprises of Assam (India), Review of Integrative Business and Economics Research, 3 (2), 321-332.
3. Sarma, M.K. & Goswami, S. (2014). Management of guest delight in hotels: an exploratory study, Vision: Journal of Business Perspective (Sage Publications), 18(1), 29-45.

## CHEMICAL SCIENCES (Year of Establishment: 1997)

The Department was established in the year 1997 with the objectives of providing a broad based training to the students in various disciplines related to Chemical Sciences and reach out to the society. The Department is offering M.Sc. programme in Chemistry, Integrated M.Sc. in Chemistry, Integrated B.Sc. B.Ed. in Chemistry, M.Tech. in Polymer Science & Technology and Ph.D. programme in Chemistry. The faculty members are actively involved in advanced research programmes in the areas of catalysis, polymers, nanocomposites, drug delivery, bioinorganic chemistry, surfactant systems, water purification technique, synthetic organic chemistry, theoretical chemistry and green chemistry.

### Programmes offered:

1. Integrated M.Sc. in Chemistry.
2. Integrated B.Sc. B.Ed. in Chemistry.
3. M.Sc. in Chemistry.
4. M.Tech. in Polymer Science and Technology.
5. Ph. D.

### Faculty and Areas of Interest:

#### Professors

*Dolui, S.K., Ph.D. (IITKgp)	<i>Fibre reinforced plastic, self reinforced plastic, water based coating and adhesive, diffusion of small molecule through plastic.</i>
*Islam, N.S., Ph.D. (NEHU)	<i>Synthetic Inorganic Chemistry and Biomimetic Chemistry of Transition Metals, Catalysis.</i>
*Maji, T.K., Ph.D. (CU)	<i>Grafting of fibres, Rubber processing, Reaction engineering, Emulsion polymer, Textile finishing.</i>
*Dutta, R.K., Ph.D. (NEHU)	<i>Surfactants and micelles, Water Purification.</i>
*Karak, N., Ph.D. (IITKgp)	<i>Synthesis of advanced Polymers, Polymer Nanocomposites and Nanomaterials.</i>
*Deka, R.C., Ph.D. (NCL, Pune)-HoD	<i>Theoretical Chemistry, Catalysis and Drug Design.</i>

#### Associate Professors

*Borah, R., Ph.D. (NEIST)	<i>Synthesis of bioactive molecule, Development of green methodologies for organic transformation.</i>
*Thakur, A.J., Ph.D. (NEIST)	<i>Heterocyclic chemistry, Organic synthesis and Molecular container chemistry.</i>
*Phukan, A.K., Ph.D. (HU)	<i>Theoretical Inorganic and Organometallic chemistry.</i>

#### Assistant Professors

*Puzari, P., Ph.D. (IITG)	<i>Physical Chemistry, Biosensor.</i>
Bania, K.K., Ph.D. (T U)	<i>Heterogeneous catalysis.</i>
*Bharali, P., Ph.D. (IICT, Hyderabad),	<i>Inorganic Materials, Catalysis, adsorption.</i>
*Gogoi, N., Ph.D. (IITB)	<i>Molecular Magnet, Functional Metal Organic Framework.</i>
*Sarma, B., Ph.D. (HU)	<i>Organic Supramolecular and Crystallography solid state.</i>
*Das, S.K., Ph.D. (CDRI, Lucknow & JNU)	<i>Synthetic organic chemistry.</i>
*Bora, U., Ph.D. (NEIST)	<i>Synthetic Organic Chemistry.</i>

#### Assistant Professors (Adhoc)

Mahanta., S.P., Ph.D. (HU)	<i>Physical Chemistry</i>
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#### Inspire Faculty

\$Pratihari S., Ph.D. (IITKgp)	<i>Inorganic Chemistry</i>
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### **\*Recognized Supervisor    \$Associate Supervisor**

*LEGENDS: CU-Calcutta University, HU-Hyderabad University, TU-Tezpur University, HoD- Head of the Department, NEIST-North East Institute of Science & Technology- Jorhat, IITKgp- Indian Institute of Technology- Kharagpur, IITB- Indian Institute of Technology- Bombay, IITG- Indian Institute of Technology- Guwahati, NEHU- North Eastern Hill University- Shillong, JNU- Jawaharlal Nehru University- Delhi, IICT- Indian Institute of Chemical Technology- Hyderabad, NCL- National Chemical Laboratory- Pune, CDRI- Central Drug Research Institute-Lucknow.*

### **Facilities**

In addition to the laboratory facilities required for post graduate level studies in Chemical Sciences, the Department is equipped with sophisticated instrumentation facilities, like FT-IR spectrophotometer, CHN Analyzer, Thermal analyzer, UV-Visible spectrophotometer, Universal testing machine (UTM), Atomic absorption spectrophotometer, Polarizing microscope, Computational facilities etc. Besides these, the University has central instrumentation facilities of Scanning electron microscope, 400 MHz Nuclear Magnetic Resonance spectrophotometer, GC-MS, ICP-AES, GPC, HPLC, GC etc.

### **Award**

The highest scorer among the students of the department is awarded with the Applied Chemistry Education Award.

### **Research Activity**

No. of papers published in the year 2014 (up to September): **99**

No. of ongoing research projects : **14**

The Department of Chemical Sciences is a UGC SAP Department.

### **Selected publications**

1. Dutta, R. & Pujari, P., Amperometric biosensing of organophosphate and organocarbamate pesticides utilizing polypyrrole entrapped acetylcholinesterase electrode, *Biosensors and Bioelectronics*, 52 (2014) 166-172.
2. Deka, P. , Deka, R.C., Bharali, P., In situ generated copper nanoparticle catalyzed reduction of 4-nitrophenol, *New Journal of Chemistry* 38 (2014) 1789-1793

### **Other relevant information**

The Department has received financial assistance under UGC-SAP and DST-FIST special grants for strengthening teaching, research and training.

## CIVIL ENGINEERING (Year of Establishment: 2009)

The Department of Civil Engineering of the Tezpur University was established in the year 2009 under the School of Engineering for offering B. Tech. Degree. Ph.D. programme was initiated in winter, 2010. The Department aims to provide quality educational, research and professional experiences that enable our graduates to become leaders in their professional careers, to pursue excellence in research and to serve the profession, community and nation and to be competitive in the international scene.

### Programmes offered

1. B. Tech. in Civil Engineering.
2. Ph. D.

### Faculty and Areas of Interest

#### Associate Professor

\*Das, U. K., Ph.D. (G U)-HoD *Geotechnical Engineering.*

#### Assistant Professors

Saikia, A., M. Tech. (IITKgp) *Geotechnical Engineering.*

\*Ahamad, K.U., Ph.D. (IITG) *Environmental Engineering.*

\*Sil, B.S., Ph.D. (NIT, Silchar) *Water Resources Engineering.*

Narzary, B.K., M. Tech. (IITG) *Transportation Engineering.*

Sonowal, D.B., M. Tech. (IITR) *Structural Engineering.*

Deka, S., Ph.D. (IITG) *Geotechnical Engineering.*

Bharali, J.D., M.Tech. (IITG) *Transportation Engineering.*

Das, A., M.Tech. (IISc, Bangalore) *Structural Engineering*

#### \*Recognized Supervisor

*LEGENDS: GU-Gauhati University, IITKgp- Indian Institute of Technology-Kharagpur, IITG- Indian Institute of Technology- Guwahati, NIT-National Institute of Technology, IITR- Indian Institute of Technology-Roorkee, IISc-Indian Institute of Science, HoD- Head of the Department.*

#### Facilities

The Department has the following Laboratory facilities

##### 1. Computational Laboratories

- Matlab and Simulink R2011b
- Sap 2000
- Plaxis 2D
- ETABS version 9
- Civil FEM for Ansys, version 12.1
- AutoCAD

##### 2. Core Departmental Laboratories

- Geotechnical Lab
- Environmental Engg Lab
- Surveying Lab
- Structural Lab
- Water Resources Lab
- Transportation Lab

#### Library Facilities:

The central library has subscribed number of international and national journals of reputed publishers.

#### Research Activity:

No. of papers published in the year 2014 (up to September) : 6

Department has already started research activity and has two Ph.D. scholars.

#### Selected publications:

1. Ahamad, K.U., & Jawed, M. "Breakthrough Studies with Mono- and Binary-Metal Ion Systems Comprising of Fe(II), F<sup>-</sup> and As(III) using River Sand Packed Columns for Groundwater Treatment", Water and Health, Vol 11 No 2, 2003
2. Saikia, A., Umerical Study on Screeing of Surface Waves using a Pair of Softer Backfilled Trenches, Soil Dynamics and Earthquake Engineering (Accepted for publication)
3. Saikia, A. and Das, U.K., Analysis and Design of Open Trench Barriers in Screening Steady-state Surface, Earthquake Engineering and Engineering Vibration (Accepted for pubnlication)

## COMPUTER SCIENCE AND ENGINEERING

(Year of Establishment: 1994)

The Department of Computer Science and Engineering is one of the oldest Departments of the University. The Department has been recently recognized as a Centre of Excellence in Machine Learning and Big Data Analytics by MHRD, Government of India under FAST. The Department is also recognized by UGC under UGC's Special Assistance Programme (SAP DRS Phase II). During 2005-2009 the Department received support from the Department of Science and Technology (DST), Govt. of India under its FIST programme. The UG (B.Tech. CSE) and PG (MCA and M.Tech. (IT)) programmes of the Department are approved by the AICTE. Eighteen students of M.Tech. (IT) programme received AICTE's GATE Scholarship. In addition to the academic programmes at the UG and PG levels, the Department has been carrying out active research in the fields of computational theory, computer networks, network security, mobile computing, soft computing & data mining, natural language processing, workflow management, qualitative spatial reasoning, web services, rehabilitation robotics, pattern recognition, bio informatics, image processing algorithms, computational geometry, machine learning, and remote sensing image analysis.

Currently, the Department has five sponsored research projects including UGC SAP/MHRD Centre of Excellence worth over Rs 6.05 crore.

### Programmes offered

1. B. Tech. in Computer Science and Engineering.
2. Master of Computer Application (MCA).
3. M. Tech. in Information Technology.
4. Ph. D.

### Faculty and Areas of Interest

#### Professors

* Dutta, M., Ph.D. (IITKnp)	<i>Optimization, Computational Theory.</i>
*Saikia, D.K., Ph.D. (IITKgp) -On lien as Director, NIT, Meghalaya	<i>Networks, Mobile Computing.</i>
*Bhattacharyya, D. K. Ph.D.(TU), Dean-SoE	<i>Data Mining, Network Security, and Bio-informatics.</i>
*Sinha, S.K., Ph.D. (TU)	<i>Workflow Automation, Web Theory.</i>
*Hazarika, S.M., Ph.D. (Leeds) -HoD	<i>Knowledge Representation &amp; Reasoning Rehabilitation Robotics.</i>
*Sharma, U., Ph.D. (TU)	<i>Natural Language Processing.</i>
*Sarma, N., Ph.D. (IITG)	<i>Wireless Networks and Mobile Computing.</i>

#### Associate Professors

* Saharia, S., Ph.D. (TU)	<i>Pattern Recognition</i>
*Borah, B., Ph.D. (TU)	<i>Data Mining, and Image Processing</i>
*Nath, B., Ph.D. (TU)	<i>Data Mining.</i>
Satapathy, S.S., M. Tech. (TU)	<i>Computational Biology and Bioinformatics, Wireless Sensor Network.</i>

#### Assistant Professors

Singh, S.I., MCA (MU)	<i>Service Oriented Systems, Trust and Reputation.</i>
Singh, L.B., M. Tech. (TU)	<i>Object Recognition, Trust and Reputation.</i>
*Sarmah, R., Ph.D. (TU)	<i>Data Mining, Bioinformatics, Image Processing.</i>
Deka, S. K., M. Tech. (TU)	<i>Cognitive Radio Network, Operating System.</i>
Boro, D., M. Tech. (TU)	<i>Network Security.</i>
Karmakar, A., Ph.D. (ISI, Kolkata)	<i>Algorithms, Computational Geometry.</i>
Nath, S., M. Tech. (TU)	<i>Speech Processing.</i>
Dash, D., Ph. D. (IITKgp)	<i>Sensor Network Algorithms</i>
*Patra, S., Ph. D (JU)	<i>Pattern Recognition Machine Learning and Remote Sensing Image Analysis</i>

### \*Recognized Supervisor

**LEGENDS:** TU-Tezpur University, MU-Manipur University, HoD-Head of the Department, JU- Jadavpur University, ISI- Indian Statistical Institute, IITK-Indian Institute of Technology, Kanpur- IITKgp- Indian Institute of Technology, Kharagpur, IITG- Indian Institute of Technology, Guwahati, Leeds- University of Leeds, England, SoE- School of Engineering, HoD-Head of the Department.

## Facilities

The Department has several state-of-the-art computer laboratories, viz.,

- Basic programming laboratories,
- Software engineering laboratory,
- Network security laboratories,
- Hardware laboratory
- Mobile computing Laboratory
- Natural language processing laboratory
- Biomimetic and cognitive Robotics laboratory
- Network laboratory
- Cognitive Radio Laboratory
- Malware Research Laboratory

These laboratories house a host of servers, workstations and a large number of PC terminals connected to the campus-wide LAN with access to the Internet. The network laboratory is equipped with wireless and wireline network equipment, wireless sensor network accessories, LAN trainers, internet security trainers etc. The hardware laboratory is equipped with various training kits, experimental setup, logic analyzer, embedded system kits, etc. The systems run on wide variety of operating systems including Linux, Windows 7/8, etc. The laboratories are equipped with up-to-date DBMS packages, graphics and animation packages, multimedia authoring packages, GIS packages, Web servers & browsers, Matlab, NS2 Qualnet, Mathematica, Matrox, in addition to the various state-of-the-art compilers and programming environments, and office automation software.

## Departmental Library:

The Department has a library with a collection of more than 1400 book volumes in the field of computer science and information technology. The library also receives 8 international and 3 national journals in the field of computer science in addition to those at the central library. The digital libraries of ACM, IEEE, are accessible to the Department.

## Research Activity:

No. of papers published in last one year (upto September): **52**

## Selected publications:

1. N Hoque, DK Bhattacharyya, JK Kalita, 'MIFS-ND: A mutual information-based feature selection method' Expert Systems with Applications 41 (14), 6371-6385. (Impact factor:2.254)
2. S Roy, DK Bhattacharyya, JK Kalita, Reconstruction of gene co-expression network from microarray data using local expression patterns, BMC Bioinformatics 15, 1-14 (Impact factor: 2.67)
3. Baruah, U. and Hazarika, S. M.: A Dataset of Online Handwritten Assamese Characters. Journal of Information Processing Systems, 2014. (Accepted).
4. S. Patra and L. Bruzzone, "A novel SOM-SVM based active learning technique for remote sensing image classification", IEEE Transactions on Geoscience and Remote Sensing, 2014, DOI: 0.1109/TGRS.2014.2305516, Impact factor 3.467.
5. Pritpal Singh and Bhogeswar Borah, "Forecasting stock index price based on M-factors fuzzy time series and particle swarm optimization", International Journal of Approximate Reasoning, Volume 55, Issue 3, March 2014, Pages 812-833.
6. Deka, S. Kr., Sarma, N. and Yarnagula, Hema Kr. 2014. A power allocation strategy for Underlay cognitive Radio Networks. (NWCDMA), IJPAM Springer (accepted).
7. Nath, Sanghamitra, Sarma, Himangshu and Sharma, Utpal. 2014. A Preliminary Study on the VOT Patterns of the Assamese language and its Nalbaria variety. LNCS, 8404.
8. I Hussain, N Sarma and D K Saikia, ;TDMA MAC Protocols for WiFi-based Long Distance Networks: A Survey", International Journal of Computer Applications, Vol. 94, No. 19, pp. 1-8, May 2014.
9. P Mahanta, HA Ahmed, DK Bhattacharyya, A Ghosh, FUMET: A fuzzy network module extraction technique for gene expression data, Journal of biosciences 39 (3), 351-364 (IF: 1.939)
10. Kakoty, N. M. and Hazarika, S. M. 2014: Towards Electromyogram based Grasps Classification. International Journal of Biomechatronics and Biomedical Robotics. (Accepted).

## CULTURAL STUDIES (Year of Establishment: 1996)

Established in 1996, the Department of Cultural Studies is one of the few Departments in the country devoted exclusively to the academic pursuit of Cultural Studies. Cultural Studies has evolved into a vibrant interdisciplinary approach in the understanding of society, culture and expressive forms associated with human behaviour across a wide range of disciplinary engagements. India is fast emerging as an important location where methods evolved in Cultural Studies are used to interrogate disciplinary approaches in an attempt to promote an understanding of various issues like ethnicity, migration, national and nationalistic assertion, gender and society, media generated cultural forms, environment and development and emerging lifestyle patterns. The Department of Cultural Studies at Tezpur University mediates global concerns and theoretical approaches of the discipline with issues that are of local importance and promotes an understanding of the rich cultural heritage and the ingrained plural nature of the region, the folk and oral inheritance and ethnic and cultural assertions amongst others. PhD scholars in the Department are drawn from an array of disciplines and include a number of UGC JRFs and NET qualified candidates.

### Programmes offered

1. M. A. in Cultural Studies (Modular)
2. Ph. D.

### Faculty and Areas of Interest

#### Professors

\*Mahanta, P.J., Ph.D. (GU), Dean-HSS *Cultural History, Old Assamese Literature, Performing Arts.*

\*Dutta, S.K., Ph.D. (VB) *Folklore Studies, Assamese Language and Culture.*

#### Associate Professor

\*Nath, D.P., Ph.D. (RGU)-HoD *Gender Studies, Comparative Literature, Translation, Critical Theory.*

#### Assistant Professors

#Goswami, M., Ph.D. (TU) *Sanskrit Poetics, Indian Classical Performing Arts.*

\*Dutta, P., Ph.D. (TU) *Heritage Studies, Folklore Studies, New Museology.*

\*Konwar, J. G., Ph.D. (DU) *Medical Anthropology, Anthropology of Food and Costume.*

Das, J.V., M.A. (TU) *Cultural Communication, Development Communication, Epistemology of Communication Studies.*

Baruah, M., Ph.D. (TU) *Gender Studies, Folklore Studies, Paremiology.*

Hashik, N.K., Ph.D. (HU) *Performance Studies, Community Studies, Research Methodology.*

#### \* Recognized Supervisor; #Co-Supervisor

*LEGENDS: GU-Gauhati University, VB- Visva-Bharati, Santiniketan, RGU- Rajiv Gandhi University, Itanagar, TU-Tezpur University, HU-Hyderabad University, DU-Dibrugarh University, HoD-Head of the Department, HSS- Humanities and Social Sciences.*

### **Facilities**

The Department has a well equipped seminar cum conference hall with projection facilities and audio-visual teaching aids and an archival centre cum edit suite. The student support infrastructure also includes the Pratibha Kath Hazarika Memorial Library and a cultural museum.

### **Research Activity**

No. of papers published in the year 2013-14 (up to September): **32**

No. of ongoing research project: **3**

The Department of Cultural Studies is a UGC SAP Department.

### **Selected Publications**

#### **A. Papers**

1. Nath, Debarshi Prasad, "Assam's Tale of Witch-hunting and Indigeneity", Economic and Political Weekly, Vol XLI No. 37. 2014
2. Dutta, Parasmoni and Dutta, Minakshi, "The Assamese Films of Bhabendra Nath Saikia: Another Parallel Stream of Indian Cinema" Journal of Creative Communications, Sage Publication, 2013

#### **B. Books published from the Department**

1. Konwar, J. G., *Warp and Weft: Textile Tradition of the Bodos*. Guwahati: Purbanchal Prakash, 2013.
2. Nath, D. P., *Jacques Lacan and The French Feminists: Theory and Praxis*. Guwahati: Purbanchal Prakash, 2013.
3. Mahanta, P. J. & Nath, D. P. (eds.) *Cultural Studies: Perspectives from North East India*. Guwahati: Purbanchal Prakash, 2013.
4. Nath, D.P., & Sarma, M.M., (ed), Lakshminath Bezbaroa: The Architect of Assamese Literature: Issues of Nationalizing and Beyond. Guwahati: Perfect Imagers, 2013.



## ELECTRONICS AND COMMUNICATION ENGINEERING

(Year of Establishment: 1997)

The Department started functioning with the first batch of students admitted in 1997 into the M. Tech. in Electronics Design and Technology course. This course has been designed with an aim to meet the industry requirements in the field of Electronics Design with emphasis on latest technological developments. From August, 2004 the Department has started a new programme "M. Tech. in Bioelectronics" approved by the UGC under its innovative programmes Teaching and Research in interdisciplinary and emerging areas. The courses, designed with interdisciplinary relevance, aims at producing professionals in the fields of medical, food safety, agriculture, defense, biotech and biosensor industries. Both courses have been recognized by AICTE. The Department has also started B. Tech. programme in Electronics and Communication Engineering from August 2006, and Electrical Engineering from 2014. The Department has also started career oriented programme "Advanced Diploma in Healthcare Informatics and Management" supported by UGC from September 2012. It is a DST-FIST, DeitY – MIT and UGC-SAP supported Department.

### Programmes offered

1. B. Tech. in Electronics and Communication Engineering
2. B. Tech in Electrical Engineering
3. M. Tech. in Electronics Design and Technology
4. M. Tech. in Bioelectronics
5. Advanced Diploma in Healthcare Informatics and Management.
6. Ph. D.

### Faculty and Areas of Interest

#### Professors

* Dutta, J.C., Ph.D. (JU)-HoD	<i>Bio-electronics, Biosensors, Neurobioengineering.</i>
*Bhuyan, M., Ph.D. (GU)	<i>Sensor Design, Image Processing, Machine Vision.</i>
*Sahu, P.P., Ph.D. (JU)	<i>Optical Networks and its Components, Wireless Communication.</i>
*Bhattacharyya, S., Ph.D. (DU)	<i>Microwave Antennas</i>

#### Associate Professors

*Sharma, S., Ph.D. (TU)	<i>MOSFET, Bioelectronic Device-ISFET, Vehicular Electronics</i>
*Roy, S., Ph.D. (TU)	<i>Neuroengineering</i>
*Deka, B., Ph.D. (IITG)	<i>Image Processing, Computer Vision, Compressive Sensing</i>
Nath, V. K., Ph.D. (IITG)	<i>Signal and Image Processing</i>

#### Assistant Professors

Chutia, R., M. Tech. (TU)	<i>E-nose</i>
Hazarika, D., M. Tech. (IITG)	<i>Signal Processing</i>
Kakoty, N.M., Ph.D. (TU)	<i>Robotics</i>
Barua, R.K., M. Tech. (TU)	<i>VLSI</i>
Mondal, B., M. Tech. (TU)	<i>VLSI &amp; MEMS Devices.</i>
Sonowal, D., M. Tech. (TU)	<i>Sensors</i>
Bonjyotsna, A., M. Tech. (TU)	<i>Signal Processing</i>
Kakoty, P., M. Tech. (TU)	<i>Intelligent Instrumentation</i>
Sharma, A., (Ad-hoc)	<i>Power System Engineering</i>

#### \* Recognized Supervisor

**LEGENDS:** TU-Tezpur University, MU-Manipur University, HoD-Head of the Department, JU- Jadavpur University, ISI- Indian Statistical Institute, IITK -Indian Institute of Technology, Kanpur- IITKgp- Indian Institute of Technology, Kharagpur, IITG- Indian Institute of Technology, Guwahati, Leeds- University of Leeds, England, SoE- School of Engineering, HoD-Head of the Department.

## Facilities

**Basic Electrical Engineering Laboratory:** In this laboratory experiments are based on Basic Electrical Engineering. The laboratory includes DC Motor-Generator set, 3 $\phi$  Power factor Trainer Kit, Series Motor Panel Kit, Synchronous Panel Motor, Shunt Motor and includes various trainer kit and Measuring instruments.

**Basic Electronics Laboratory:** Laboratory experiments are based on Switching Circuit and Digital Logic(SCDL), Biomedical Electronics(BE), Analog Electronics Devices & Circuit (AEDC), Integrated Circuits(IC), Electronics devices and circuits (EDC), Design of Digital Systems(DDS) are conducted in this lab. The lab is equipped with number of analog trainer kit, digital trainer kit, DSO, CRO, Function generator and various trainer kit.

**Design and Prototyping Laboratory (Workshop):** Physical and Industrial Design of Electronics Systems (PIDE) lab designed for the M.Tech. students is equipped with following machines: lathe machine, drilling machine, milling machine, grinding machine, welding machine, bending machine, spot welding, wood planner, miter shop, hand grinder, power hack-saw, etc.

**M.Tech Project Laboratory:** There are number of computers equipped with different software based on different projects. Computer systems are allotted to M.Tech. final year students to complete their M.Tech Dissertation.

**Computer Laboratory (Software):** Laboratory experiments based on Data and Computer Networks (DCN), VLSI, Modeling and Simulation (MS), Design and Technology of Electronics Devices (DTED), and Advanced Programming Language (APL) are conducted in this lab. Pentium based PCs attached to LAN server by powerful Pentium based Novel Netware consisting of about 25 terminals all connected to Internet Server. There are up-to-date office automation software, ORACLE, Web Server & browser, Circuit Simulator like MICROSIM, PCB layout, CPLD-FPGA Electronic Design Automation (EDA) software, High Performance Data acquisition- Control- Manipulation Software- GENIE Lab View, XILINX, ORCAD.

**Communication Laboratory:** In this laboratory experiments are based on Principles of Communication (PC), Digital Communication (DC), Control System (CS) and Microprocessor lab are conducted. It is equipped with CRO, DSO, function generator, trainer kit, measuring instruments, spectrum analyzer, etc.

**Microwave Laboratory:** The lab consists of 7 setup for different ultraviolet experiments. Power meter, VSWR meter, DMM, etc.

**DSP Laboratory:** The lab is equipped with (i) Software and (ii) Hardware with DSP Kit (For B.Tech Project works) (iii) FPGA Boards.

**Image Processing Laboratory:** The lab is equipped with (i) Software and (ii) Hardware with FPGA Kits for image processing.

**VLSI Laboratory:** It is equipped with computers for B.Tech. students.

**Instrumentation Laboratory:** The lab is equipped with temperature transducers – thermocouple, IC sensors, ti- channel temperature indicators, Load cell indicator, humidity sensor, sensor interfacing to PC, industrial type remote transmitter, PC based stepper motor, Servo motor driver, etc. it also includes CRO, FG various trainer kit and measuring instruments (**This lab is under MODROB, AICTE**).

**Bioelectronics Laboratory:** The lab is related with Robotics, vision development with lab view, E-nose, Insectronics, Device Simulator and also has number of computers.

**Neuroengineering Laboratory:** It is a power lab which includes instruments having capabilities of measuring and processing of ECG, EMG, EEG etc., computers, sensors, Robotic setup and various motors.

**Optical Fiber Laboratory:** Newly developed under MODROB, AICTE

**HIM Laboratory:** This lab is equipped with computers for the students of Advanced Diploma in Healthcare Informatics and Management programme.

**Micro fabrication/MEMS Laboratory:** The lab is equipped with PECVD, RIE, Photo Lithography unit, Thin Film depositor, oxidation furnace, clean room facility, etc.

**Research Laboratory:** This computer laboratory is exclusively for Ph.D students. It includes: Power electronics laboratory(Vehicular Electronics)

Microwave engineering laboratory  
Wireless Communication engineering laboratory  
E-nose laboratory  
ICT laboratory  
CVIP laboratory

**Hardware Laboratory:** It includes CRO, Function Generator, P/S equipment and trainer kit. This lab is allotted to M.Tech and B.Tech final year students to complete their hardware projects.

### Research Activity

No. of papers published in the year 2014 (up to August): **26**

### Research Areas:

1. Biosensors and Bioelectronics
2. Intelligent Instrumentation
3. Image and Signal Processing
4. Microwave
5. Vehicular Electronics

### Research Output:

1. Completed : **11**
2. Ongoing : **24**

**Nos. of completed research project : 07**

**Nos. of ongoing research project : 08**

### Selected publications

1. Md Abdul Barik, Jiten Ch. Dutta, "Fabrication and Characterization of Junctionless Carbon Nanotube Field Effect Transistor for Cholesterol Detection" International Journal of Applied Physics Letters, 7 August, 2014
2. Md Abdul Barik, Manoj Kumar Sarma, C. R. Sarkar, Jiten Ch. Dutta, "Highly Sensitive Potassium-Doped Polypyrrole/Carbon Nanotube-Based Enzyme Field Effect Transistor (ENFET) for Cholesterol Detection" International Journal (SPRINGER) of Appl Biochem Biotechnol, DOI 10.1007/s/12010-014-1029-5. 19 July, 2014.
3. Bonjyotsna, A.; Roy, S.; Correlation of Drowsiness with Electrocardiogram: A Review; Int. Jr. of Advanced Research in Electrical, Electronics and Instrumentation Engineering; Vol. 3, Issue 5, May 2014, pp 9538-9544, ISSN (Print) : 2320 - 3765, ISSN (Online): 2278 - 8875.
4. V. K. Nath, D. Hazarika, A. Mahanta, " Lapped transform based image denoising with the generalised Gaussian prior", International Journal of Computational Vision and Robotics, Vol.4, No.1/2, pp. 55 - 74 , 2014.
5. Saikia A, Sharma S "Suppression of Gate-Induced Drain Leakage in Bulk MOSFETs using a Non-Uniform Gate Oxide Thickness" International Conference on Emerging Trends in Electrical, Electronics, Instrumentation & Computer Engineering (ETEICE) 27th March, 2014.

## ENERGY

(Year of Establishment: 1996)

Department of Energy started in 1996, with an aim to produce manpower pool in the field of energy, develop new and efficient energy technologies, R & D and extension activities in diverse areas of energy. The department offers a two-year (four semesters) AICTE approved M. Tech. programme in Energy Technology, One year Post Graduate Diploma in Renewable Energy and Energy Management (under distance education mode) and Ph. D. in energy related areas. The thrust areas of research are Biomass energy, Solar energy, Energy-Environment interface, Energy Conservation and Management, Energy Efficiency, Climate Responsive Buildings, Hydrogen Energy, Fuel Cell and Rural Hybrid Energy. Apart from the teaching and research, the department also organizes training programmes, workshops and seminars in the relevant areas of energy. The department has received research support under Indo-UKIERI research collaboration. The Department has undertaken three International Collaborative research projects viz. i) Indo-UK ii) Indo-European and iii) Indo-Finland with National partners in the field of bioenergy. Research Scholars in the Department received Nehru-Fulbright Fellowship in 2013, CIMO fellowship at Abo Akademi University, Finland in 2013, ISCA young Scientist Award, Indo-French Sandwich Ph.D Fellowship. Swarna Jayanti Puraskar award for the best paper of National Academy of Science, India, 2010.

### Programmes offered

1. M. Tech. in Energy Technology
2. Ph. D.
3. Post Graduate Diploma in Renewable Energy and Energy Management (Distance mode)

### Faculty and Areas of Interest

#### Professors

*Deka, D., Ph.D., (TU) - HoD	<i>Biofuels, Biomass Assessment, Bioenergy and Environment</i>
*Baruah, D.C., Ph.D. (PAU)	<i>Biomass Energy, Energy Management and Mathematical Modeling and Farm Mechanisation</i>
*Samdarshi, S.K., Ph.D. (IITD) - On lien	<i>Solar Energy</i>

#### Associate Professor

*Kataki, R., Ph.D. (TU)	<i>Energy and Environment, Biomass energy</i>
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#### Assistant Professors

Mahapatra, S., M. Tech. (JU)	<i>Biomass Gasification, Climate responsive buildings, Decentralized Energy Options, Energy conservation.</i>
Choudhury, P.K., M. Tech. (TU)	<i>Energy Conservation and Management, Integration of Renewable Energy Systems.</i>
#Kalita, P., Ph.D. ,(IITG)	<i>Fluid Mechanics, Heat Transfer, Biogas Technology, Circulation fluidized bed combustion and gasification</i>
Kakati, B.K., Ph.D. (IITG), PDF(IC-London)	<i>Fuel cell, Hydrogen Technology and Redox Flow Battery</i>
Sarmah, N., Ph.D. (H-WU, Edinburgh),PDF(UE, UK)	<i>Solar Energy, Photovoltich, Energy systems</i>

#### \* Recognized Supervisor # Recognized Co-supervisor

**LEGENDS:** IITD-Indian Institute of Technology-Delhi, IITG- Indian Institute of Technology-Guwahati, PAU-Punjab Agriculture University, TU -Tezpur University, JU-Jadavpur University, PDF-Post Doctorate Fellow, IC -Imperial College , H-WU- Heriot – Watt University, UE- University of Exeter, HoD-Head of the Department .

## **Facilities**

### **Laboratory**

The Department is equipped with various equipments such as Gas Chromatograph, Computerized power meter, Bomb Calorimeter, Biomass gasifier system, Solar radiation measuring equipments, Wind speed direction measuring equipments, Wind electric generator, Briquetting Press, Single cylinder 4-stroke petrol engine Test Rig with electrical Dynamometer, Fibertech apparatus, Toxic Gas analyzer, Carbon-Hydrogen analyzer, UV-visible spectrophotometer, TOC Analyser, Petrol and Diesel Engine Test set-up, Hydrocarbon type Analyser, Pyrolyser, Adiabatic Bomb Calorimeter, TBP Apparatus, Dual Fuel Engine, Vacuum Distillation Apparatus, Microhydel test set-up, Research Radiometer, Solar thermal collector test set-up, Solar Dryer, Peristaltic Pump, Ultrasonicator, Programmable Muffle Furnace, Biodiesel Plant and various renewable energy systems.

### **Departmental Library**

A good number of books, video cassettes and CDs on Energy and related areas are available for the students. A number of national and international journals related to different areas of energy are also being subscribed by Central Library of the University.

### **Scholarship**

Ministry of New and Renewable Energy (MNRE), Government of India offers fellowship for M. Tech. and Ph. D. students under its National Renewable Energy Fellowship Schemes on the basis of GATE score. MHRD fellowships are also available for GATE qualified candidates. NEC fellowships are available for the students from North East regions. ONGC has also offered scholarship to M. Tech. student of the Department. UGC offered scholarship to SC/ST students.

### **Research Activity**

No. of ongoing sponsored research projects: 07

No. of papers published in referred journals in 2013 and 2014 (Upto September): 50

### **Selected Publications**

1. Bora P, Konwar LJ, Boro J, Phukan M M, Deka D and Konwar B K. Hybrid biofuels from non-edible oils: A comparative standpoint with corresponding biodiesel. *Applied Energy*, 135, (450–460, 2014).
2. Dutta PP and Baruah DC. Gasification of tea (*Camellia sinensis* (L.) O. Kuntze) shrubs for black tea manufacturing process heat generation in Assam, India. *Biomass and Bio-energy* 66, 27-38, 2014.

## ENGLISH AND FOREIGN LANGUAGES

(Year of Establishment: 1994)

The Department, which was established in 1994, aims to provide instruction and carry out research in American Literature, English Language Teaching, English Literature, Indian Writing in English, Linguistics, New Literature in English and Women's Writing in English. The Department of English and Foreign Language is a UGC SAP Department.

### Programmes offered

1. M.A. in English
2. Integrated B.A.B.Ed. (English Major)
3. Integrated M.A. Programme
4. M.A. in Linguistics and Language Technology
5. One Year Certificate Course of Chinese (Full Time)
6. Ph. D.

**Note: The Department of English and Foreign Languages does not wish to take Ph.D. students during Spring Semester 2015.**

### Faculty and Areas of Interest

#### Professors

*Sarma, M.M., Ph.D., (DU)	<i>Applied Linguistics, Literature in English, ELT</i>
*Danta, B.K., Ph.D., (UU)	<i>American Literature, Critical Theory, Fiction Studies</i>
*Danta, F., Ph.D., (DU)	<i>American Literature, Cultural Studies, Modernist Poetics</i>
*Das, P. K., Ph.D., (GU)-HoD	<i>American Literature, Indian Writing in English</i>
*Barbora, M., Ph.D., (TU)	<i>Linguistics (Syntax, Psycholinguistics)</i>

#### Associate Professors

*Borah, G.K., Ph.D., (NTNU, Trondheim, Norway)	<i>Linguistics, Cognitive Semantics, Philosophy of Language.</i>
*Biswas, S., Ph.D., (NEHU)	<i>Critical Theory, Indian Writing in English</i>
*Mohapatra, D., Ph.D. (EFLU, Hyderabad)	<i>Curriculum Development, Materials Production, Language Policy</i>

#### Assistant Professors

Medhi, H.M., M.Phil., (DU <sup>^</sup> )	<i>Gender and Literature, New Literatures in English</i>
Chakraborty, R., M.Phil. (Chinese), (JNU)	<i>Chinese Language &amp; Literature.</i>
Narzari, R., M.A., (NEHU)	<i>Women's Writing, Commonwealth Literature, Indian Writing in English</i>
Jha, P., M.Phil., (HU)	<i>Children's Literature, Popular Culture and Literature, Postcolonial Writing</i>
*Sahoo, S., Ph.D., (TU)	<i>Indian Writing in English, Ecocriticism, Travel Writing</i>
Gogoi B., M. Phil. (EFLU, Shillong)	<i>Critical Theory, Indian Writing in English</i>
*Nath A.K., Ph.D. (JNU)	<i>Language Typology, Morphology, Language Endangerment, Multilingualism, Sociolinguistics</i>
Patgiri B., M.Phil. (JNU)	<i>Phonology (Prosody, Dialectology, Language Typology and Syntax)</i>
Daimari E., M.Phil. (GU)	<i>South Asian Literature</i>
Kumar P., Ph.D. (JNU)	<i>Language Description &amp; Documentation, Endangered Languages and Lesser known Languages, Language</i>
Zingjarwon, N., M.Phil (JNU)	<i>Chinese Language and Literature</i>
Medhi, B. K., M.Phil(JNU)	<i>German language and literature</i>

#### \* Recognized Supervisor; \$Associate Supervisor

**LEGENDS:** **DU**- Dibrugarh University, **UU**-Utkal University, **GU**-Gauhati University, **TU**-Tezpur University, **DU<sup>^</sup>**-Delhi University, **HU**-Hyderabad University **VB**-Visva-Bharati, **HoD**- Head of the Department. **NEHU**- North Eastern Hill University, **EFLU**- English and Foreign Language University, Hyderabad, **JNU**- Jawaharlal Nehru University, New Delhi, **NTNU**-Norwegian University of Science and Technology.

## **Facilities**

### **Digital Language Laboratory**

The Department has a digital multimedia, multipurpose language laboratory with fifteen booths. Students can improve their pronunciation of English and Foreign Languages (Chinese and French) and develop interactive language skills by utilizing the software and other facilities available in the Laboratory.

### **Departmental Library**

Selected books and photocopied materials relating to literature, linguistics and ELT are available in the Departmental Library. The Department also has a collection of audio cassette of English Pronunciation and spoken English and number of Video CDs on library texts.

The Department has a small Computer Laboratory for the use of students and research scholars.

### **Research Activity**

No. of papers published in the year 2014 : **14**

No of ongoing projects : **04**

### **Selected Publications**

1. Nath, A K, "CSM Induced Phonetic Changes in Modern Assamese". Indian Journal of Applied Linguistics (IJOAL), 2014.
2. Sarma, MM. "Indian Oral Narrative in Postmodern Historiography: A Reading of Midnight's Children. Tradition" Joel Kuortti (Ed). Critical Insights: Midnight's Children. Ipswich, Massachusetts: Salem Press, 2014. 151-165.

## ENVIRONMENTAL SCIENCE (Year of Establishment: 2004)

Initially established as a centre for Environmental Science in 2003, the centre was converted to the Department of Environmental Science in 2004, with the objective of imparting education on regional and global environmental issues. The curriculum for the M. Sc. programme focuses on all important aspects of Environmental Science covering contemporary problems of natural resource conservation and environmental quality. Areas of research include Environmental pollution, Greenhouse gas emission, Riverine hazards, Climate, Geomorphology, Atmospheric processes, Vulnerability & Adaption, Hydrogeochemistry, Vermicomposting, Pollution remediation and Biodiversity conservation.

### Programmes offered

1. M. Sc. in Environmental Science
2. Ph. D.

### Professors

*Baruah, K.K., Ph.D. (PAU)	<i>Environmental Plant Physiology and Biochemistry</i>
*Sarma, K.P., Ph.D. (NEHU)	<i>Water and Soil Pollution, Hydro-geochemistry, Remediation of Toxic substances</i>

### Associate Professors

*Hoque, R.R., Ph.D. (JNU)	<i>Air pollution and Environmental Monitoring and Assessment</i>
*Das, A.K., Ph.D. (JNU)-HoD	<i>Geomorphology, Regional Climate</i>

### Assistant Professors

*Devi, A., Ph.D. (NEHU)	<i>Forest Ecology, Wildlife and Biodiversity conservation</i>
*Gogoi, N., Ph.D. (DU)	<i>Stress Physiology &amp; Biochemistry</i>
*Bhattacharya, S. S., Ph.D.(VB)	<i>Vermiculture, Plant Nutrition &amp; Soil Fertility Management</i>
*Kumar, M., Ph.D. (UT)	<i>Hydro-geochemistry, Groundwater modeling, Contaminant transport, Heavy metal speciation; Isotope fingerprinting, Soil and water pollution.</i>
Handique, S., M.Sc. (JNU)	<i>Geochemistry</i>
*Prakash, A., Ph.D. (JNU)	<i>Atmospheric Processes; Air and Noise pollution monitoring and modelling Environmental System modelling; Urban Climate.</i>
*Mitra, S., Ph.D. (IARI)	<i>Environmental Science - Environmental Chemistry</i>

### \*Recognized Supervisor

*LEGENDS: PAU-Punjab Agricultural University, DU-Dibrugarh University, VB-Visva-Bharati, Santiniketan, UT-The University of Tokyo, HoD- Head of the Department, NEHU-North Eastern Hill University, JNU-Jawaharlal Nehru University, IARI-Indian Agricultural Research Institute, New Delhi.*

### Facilities

The Department has a sophisticated instrumentation laboratory to facilitate research and other academic activities. The laboratory has the following equipments: ICP-OES, Laser Leaf Area Meter with Root Measurement Attachment, Light Meter, Portable Photosynthesis Systems, Gas Chromatographs, Ion Chromatograph, TOC Analyzer, Continuous Air Pollution Monitoring Station, UV-Visible Spectrophotometer, Ion meter, Repairable dust sampler and Flame Photometer, GIS laboratory and plant culture house.

### Research Activity

No. of papers published in the year 2013-14 : 40

No. of ongoing research projects : 16



## Selected Publications

1. Deka P and Hoque RR (2014). Incremental effect of festive biomass burning on wintertime PM10 in Brahmaputra Valley of Northeast India. *Atmospheric Research*, 143, 380–391.
2. Handique S and Senapati N (2014). Grain size and texture determination of the Brahmaputra River and 6 of its tributaries. *Geochemistry International*. DOI: 10.1002/gi.1587.
3. Devi A, Rakshit K, Sarania B, and Adi, Apatani, Monpa, Nyishi Community (2014). Ethnobotanical notes on Allium species of Arunachal Pradesh, India. *Indian Journal of Traditional Knowledge*, 13 (3), 606-612.
4. Paul S, Gogoi N, Sharma B, Baroowa B (2014). Biochemical changes in potato under elevated temperature. *Indian Journal of Plant Physiology*, 19(1), 36-42.
5. Basak S, Ramesh AM, Kesari V, Parida A, Mitra S, Rangan L (2014). Genetic diversity and relationship of Hedychium from Northeast India as dissected using PCA analysis and hierarchical clustering. *Meta Gene* 2,459-468.
6. Borbora J and Das AK (2014). Summertime Urban Heat Island study for Guwahati City, India. *Sustainable Cities and Society*, 11, 61-66.
7. Goswami L, Sarkar S, Mukherjee S, Das S, Barman S, Raul P, Bhattacharyya P, Mandal NC, Bhattacharya S, Bhattacharya SS (2014). Vermicomposting of Tea Factory Coal Ash: Metal accumulation and metallothionein response in Eiseniafetida (Savigny) and Lampitomaoritii (Kinberg). *Bioresource Technology* 166, 96–102.
8. Kumar M, Singh G, Chaminda T, Quan P V, Kuroda K (2014). Emerging Water Quality Problems in Developing Countries. *The Scientific World Journal*, DOI: dx.doi.org/10.1155/2014/215848.
9. Saikia P and Baruah KK (2014). Carbon fixation, partitioning and storage in field plant with wheat at different moisture regimes. *Climate change and environmental sustainability*, 2(1), 39-47.
10. Sharma P and Sarma KP (2014). In Vitro propagation of *Bambusapallida* on commercial scale in Assam. *J. Environmental Research and Development*, 8(4), 995-902.

## FOOD ENGINEERING AND TECHNOLOGY

(Year of Establishment: 2006)

The Department was established in the year 2006 with the name of Department of Food Processing Technology for imparting Post Graduate education in the area of food processing and engineering. With the introduction of B.Tech programme in Food Engineering and Technology (FET) in the year 2010, it was renamed as the Department of Food Engineering and Technology. The vision of the Department is to create trained and skilled human resources to cater to the needs of the rapidly growing food processing sectors in India. The programmes offered at the Department aim at imparting the students both with skills and knowledge to succeed as entrepreneurs and professionals. The students are exposed to the rigors of working environment of Food Processing industries through training and visits as a part of their course work.

The Department has the support of the Ministry of Food Processing Industries (MoFPI), Govt. of India, under HRD grant for establishing laboratories to conduct PG and UG courses in Food Engineering and Technology, and for establishing a Quality Control Laboratory. The Department of Science and Technology (DST), Govt. of India has granted support to strengthen the Post Graduate teaching and Research under its FIST programme. AICTE has supported running AICTE-approved courses at the Department through the scheme of AICTE/NEQIP. GATE qualified M.Tech. students receive PG Scholarship of MHRD. One of the bright B.Tech. students is considered for Scholarship from GE Foundations.

Research activities at the Department are supported by various sponsoring agencies like MoFPI, DST, DBT, UGC, and DRDO etc. Various projects carried out at the Department aims at developing effective and low cost technologies for the society. Some developed food products have also been patented by the faculties. Workshops and seminars are organized regularly in the Department for knowledge sharing among peers as well as for motivating local youths to start their own enterprises.

### Programmes offered

1. B. Tech. in Food Engineering & Technology
2. Integrated M. Tech. (4 year post B. Sc.) in Food Engineering and Technology
3. M. Tech. in Food Engineering and Technology
4. Ph. D.

### Professors

\*Mahanta, C.L., Ph.D. (CFTRI, Mysore) *Rice Science & Technology, Product Development and Food Quality.*

\*Deka, S.C., Ph.D. (CCS HAU, Hisar) *Food Biochemistry and Food Quality, Fermented Foods.*

### Associate Professors

\*Hazarika, M.K., Ph.D. (IITKgp)-HoD *Food process modeling, product technology development, Transport Processes in Food Engineering.*

\*Srivastava, B., Ph.D. (IITKgp) *Process and Food Engineering, Fruits and Vegetable Processing and Machineries, Drying and Dehydration, Unit Operations in Food Engineering.*

Sit, N., Ph.D. (TU) *Food Engineering, Biochemical Engineering, Oils and Fats, Food and Biotechnology.*

### Assistant Professors

Mishra, P., Ph.D. (TU) *Food Technology*

Badwaik, L.S., Ph.D. (TU) *Food Engineering and Technology, Fermentation Technology, Cereals and Pulses Technology, Fruits and Vegetables Technology, Food Packaging, Food and Safety and Laws.*

Seth, D., M. Tech. (IITKgp) *Dairy and Food Engineering, Dairy Technology, Unit Operations in Food Engineering, Emerging Trends in Food Process Engineering.*

*Duary, R.K., Ph.D. (NDRI, Karnal)	<i>Isolation and establishment of probiotic organism, Probiotic food formulation and development, Fermentation, Human Cell culturing.</i>
#Dash, K.K., Ph.D. (IITKgp)	<i>Food process Modeling, Transfer process in Engineering, Optimization in Food Engineering.</i>
Das, A.B., M.S. (IITKgp)	<i>Food process Modeling, Optimization in Food Engineering, Product Technology Development.</i>

**\* Recognized Supervisor; #Co-Supervisor**

*LEGENDS: IITKgp-Indian Institute of Technology- Kharagpur, CFTRI-Central Food Technological Research Institute, CCSHAU-Haryana Agricultural University, HBTI- Haycourt Putler Technological Institute, GBPUAT-G. B. Pant University of Agricultural Technology, SLIET-St. Longowal Institute of Engineering and Technology, NDRI- National Dairy Research Institute, TU-Tezpur University.*

**Facilities**

The Department is well equipped with processing and analytical equipments and is in the process of procuring many more equipments to make the state of the art facilities. Great emphasis is laid on practical for processing of foods and for analyzing their quality. List of some major equipments available with department are as follows: HPLC, Texture Analyser, Hunter Lab Color Spectrophotometer, Rapid Visco Analyser, UV-Vis Spectrophotometer, Binocular Microscope, Deep Freezer, BOD Incubator, Rotary Vacuum Evaporator, Photoflurometer, Biohazard Safety Cabinet, Lab. Scale Spray Drier, Tray Drier, Drum Drier, Fluidized Bed Drier, Baking Oven, Canning Unit, Food Processing Equipments, Packaging Equipments, Hammer Mill, Ball mill, Laboratory Pasteurizer, Paddy Huller, Paddy Sheller, Laminar Flow, Fruit Crasher, etc.

**Research Activity**

**No. of papers published in the year 2013 : 19**

**No. of ongoing research projects: 13**

**Selected Publications**

1. Dutta, H., and Mahanta, C.L. Laboratory process development and physicochemical characterization of a low amylose and hydrothermally treated ready-to-eat rice product requiring no-cooking. *Food and Bioprocess Technology*, 2013, DOI: 10.1007/s11947-012-1037-9.
2. Sit, N., Misra, S., and Deka, S.C. Physicochemical, functional, textural and colour characteristics of starches isolated from four taro cultivars of North-East India. *Starch/Stärke* 2013, DOI 10.1002/star.201300033.

## HINDI (Year of Establishment: 2010)

The Department of Hindi, which was established in January, 2010, offers a Ph.D. programme (in Hindi Literature/ language), M.A. Programme in Hindi, Post Graduate Diploma Programme in Translation (Hindi), CBCT and Modern Indian Language (MIL) for integrated B.A. B.Ed. programme. The Department also offers a Certificate Course in Official Hindi (Level-1) to the employees of the University in order to help them to develop their skill and self-confidence in speaking and writing in Hindi Language.

### Programmes offered

- 1.M.A.
- 2.Ph.D.
- 3.Post Graduate Diploma in Translation (Hindi)
- 4.Certificate Course in Official Hindi

**Note: The Department of Hindi does not wish to take Ph.D. students during the Spring Semester 2015**

### Professor

\*Nath, A.K., Ph.D. (MU) *Medieval Poetry, Folkloristic, Comparative Literature.*

### Associate Professor

\*Tripathi, S.K., Ph.D. (BHU)-HoD *Applied Linguistics, Indian Poetics and Folkloristic.*

### Assistant Professors

Anjulata., M. Phil. (JNU) *Fiction.*

Anushabda., Ph.D. (DU) *Poetry, Poetics, Media and Linguistics.*

### \* Recognized Supervisor

LEGENDS: **MU**-Manipur University, **BHU**-Banaras Hindu University, **JNU**-Jawaharlal Nehru University, **DU**-Delhi University, **HoD**-Head of the Department

### Facilities

The Department has a small Departmental library.

### Research Activity

No. of papers published in the year 2014 : 6

### Selected Publications

1. Nath, A.K., *Arunachal Pradesh mein Hindi Dasha Aur Disha, Samsamayik Hindi Sahitya : Vividh Ayam (Dr.Malatlal Patel Abhinandan Granth)*, Shanti Prakash, Gujrat, March 2012.
2. Tripathi, S.K. *Lok ka Awalokan (Book)*, Arya Prakashan, Gandhi Nagar, New Delhi, 2013.

## MASS COMMUNICATION AND JOURNALISM (Year of Establishment: 2001)

The Department established in 2001, is engaged in teaching and research in Media and Communication studies. It has been undertaking research in tune with emerging trends in media and communication locally and globally. The thrust areas of the Department are Social Communication, New Media and Audience Studies with laying emphasis on critical understanding of theory and practice.

### Programmes offered

- 1.M. A. in Mass Communication and Journalism
- 2.Post Graduate Diploma in Mobile and Multimedia Communication
- 3.Ph. D.

### Faculty and Areas of Interest

#### Professor

\* Dutta, S. K., Ph. D. (VB) , HoD *Folklore Studies, Assamese Language and Culture.*

#### Associate Professors

\*Bora, A., Ph.D. (GU) *Print Journalism, Community Radio, Development Communication, Analytical Journalism, Media Studies, Specialized Reporting, Science Communication.*

Anbarasan, P., Ph.D. (JNU) *Media Studies, Cultural and Subaltern Studies, International Communication, Film Studies.*

#### Assistant Professors

\* Chakraborty, J., Ph.D. (UH) *ICT for Development, Development Communication, Women and Media; Traditional Media.*

# Pegu, U.K., Ph.D. (JMI) *ICT Implications on Society, Science Communication, Film Studies, and Media Analysis etc.*

Nagaraju, A., M. A. (UH) *Electronic Media Production, Documentary Filmmaking, Television Production and Advertising.*

Borah, A., M.A. (T U) *Development Communication, Television and Traditional Media.*

Daimari, P.J., M.A. (TU) *Film Studies, Development Communication*

Malakar, K., M. A. (JMI) *New Media for Development, Multimedia Journalism, Political Communication, Online Journalism, Media Studies, Film Studies*

# Lakhendra, B., Ph.D. (TU) *Radio, Youth and Rural Development, Traditional Media, Public Relation and Development Communication, Coastal Environment.*

### \*Recognized Supervisor #Co-supervisors

LEGENDS: VB- Visva—Bharati, Santiniketan ,GU- Gauhati University, JNU-Jawaharlal Nehru University, UH- University of Hyderabad, TU-Tezpur University, JMI- Jamia Millia Islamia, AU- Assam University, HoD- Head of the Department.

**Facilities**

The Department has a spacious exclusive three-story building and is endowed with specialized high-end equipments for print, TV, Radio and web journalism. These include industry grade HD digital video cameras, linear and non-linear editing suites, all in broadcast quality. Students get hands-on experience in multi-camera production in the well-equipped studio. An exclusive multimedia lab with latest software enables students to gather expertise in the nuances of different media productions. A very good screening room with a 100-seat capacity is available for screening and discussion.

**Productions**

Students as part of their academic curriculum, regularly produce laboratory journals, audio programmes, web designs, brochures, TV news bulletin, corporate videos, documentary films and traditional communication programmes like puppet shows and street plays on a regular basis.

**Research Activity**

No. of papers published in the year 2013 : **12**

**Selected publications**

1. Bora, A., "Through the looking glass" *VIDURA – Quarterly journal of the Press Institute of India (Research in Newspaper Development)*, Chennai ISSN No 0042-5303, July-August, 6(3), 2014.
2. Anbarasan, P., "European Union and Media: Constructing Identity Beyond Borders", *Trans-knowledge Publishers, New Delhi*, (ISBN 978-81-902931-0-3), 2014.

## MATHEMATICAL SCIENCES (Year of Establishment: 1994)

The Department was started in July 1994 with the objective of producing trained manpower for undertaking research and teaching in mathematics and allied branches of basic or applied sciences. The Department carries out research in the areas of probability distributions, Optimization theories, Number theory (Algebraic and Analytic), Operator theory, Fuzzy topology, Finite element method, Algebraic graph theory, Algebra (Group Theory and Ring Theory) etc. The Department is currently supported by the UGC under its SAP (DRS-I) scheme and DST-FIST grant .

### Programmes offered

1. Integrated M.Sc. in Mathematics
2. Integrated B.Sc. B. Ed. in Mathematics
2. M.Sc. in Mathematics
3. M.Sc. In Mathematics (Distance Mode)
4. Ph.D. in Mathematical Sciences

### Faculty and Areas of Interest

#### Professors

*Borah, M., Ph.D. (GU)	<i>Discrete Distribution, Combinational Optimization, Genetic Algorithms, Numerical Analysis.</i>
*Baruah, N.D., Ph.D. (TU)	<i>Number Theory, Ramanujan's Mathematics.</i>
*Hazarika, D., Ph.D. (JMI)-HoD	<i>General Topology, Fuzzy Sets and Applications.</i>
*Hazarika, M., Ph.D. (TU)	<i>Functional Analysis, Operator Theory.</i>

#### Associate Professors

*Nath, M., Ph.D. (IITG)	<i>Ordinary Graph Spectra, Inverse Eigen Value Problem.</i>
Sarmah, B.P., Ph.D. (GU)	<i>High Energy Astrophysics, Relativity.</i>
*Deka, B., Ph.D. (IITG) (on lien)	<i>Numerical Functional Analysis.</i>
*Dutta, S., Ph.D. (TU)	<i>Statistics (Non-parametric).</i>
*Basnet, D. K., Ph.D. (DU)	<i>Algebra.</i>
*Sen, S., Ph.D. (IITG)	<i>Computational Fluid Dynamics.</i>

#### Assistant Professors

\$Haloi, R., Ph.D. (IITK)	<i>Abstract Differential Equations.</i>
Sarmah, B.K., Ph.D. (TU)	<i>Theory of Partition, Ramanujan's Mathematics.</i>
#Nath, R.K., Ph.D. (NEHU)	<i>Theory of Finite Groups.</i>
Kalita, D., Ph.D. (IITG)	<i>Algebraic Graph Theory.</i>
Medhi, P., Ph.D. (G U)	<i>Queuing Theory.</i>
Goswami, D., Ph.D. (IITB)	<i>Finite Element Method.</i>

#### Assistant Professor (Ad-hoc)

Paul, S., Ph.D. (TU)	<i>Spectral Graph Theory</i>
Bose, S. M.Sc. (AU)	<i>Spectral Graph Theory</i>

### \* Recognized Supervisor; # Recognized Co-supervisor; \$Associate Supervisor

*LEGENDS: GU-Gauhati University, TU-Tezpur University, JMI-Jamia Millia Islamia, SoS- School of Science, DU-Dibrugarh University, HoD-Head of the Department, IITK- Indian Institute of Technology, Kanpur, NEHU- North Eastern Hill University, IITB- Indian Institute of Technology, Bombay, IITG- Indian Institute of Technology, Guwahati, AU-Anna University.*

**Facilities**

The Department has a computer laboratory established with financial assistance from the DST and UGC. Various Mathematical software are available in the laboratory. The laboratory is fully networked and it is linked with the Central Computer Center via LAN with access to the INTERNET. One Systems Analyst and one Technical Assistant look after the computational and networking facilities of the department. The laboratory is being fully upgraded under DST-FIST grant.

**Research Activity**

No. of papers published/accepted in referred journals in 2014: **31**

No. of ongoing research projects: **03**

**Selected publications**

1. Deka Baruah, N. and Nath, K. "Infinite families of arithmetic identities for self-conjugate 5-cores and 7-cores", *Discrete mathematics*,. 321, 57-67, 2014.
2. Kalita, J.C. and Sen, S, "Unsteady separation leading to secondary and tertiary vortex dynamics: the sub- $\alpha$  and sub- $\beta$  phenomena", *Journal of Fluid Mechanics*, 730, 19-51, 2013



## MECHANICAL ENGINEERING (Year of Establishment: 2006)

The Department of Mechanical Engineering was established in the year 2006 under the School of Engineering for offering B. Tech degree in Mechanical Engineering. Subsequently, M.Tech and Ph.D. programmes were started in the year 2013. The vision of the department is to emerge as a centre of excellence producing quality engineers and contributing innovative research for the greater benefit of the society and the corporate world.

### Programmes offered:

1. B. Tech in Mechanical Engineering
2. M. Tech in Mechanical Engineering (Specialization: Applied Mechanics)
3. Ph.D.

Associate Professors	
*Datta, D., Ph.D.(IITK)-HoD	<i>Design, Optimization and Operational Research</i>
*Gogoi, T. K., Ph.D. (TU)	<i>Thermal, Energy and Environment Engineering</i>
Assistant Professors	
Dutta, P. P., M. Tech. (TU)	<i>Energy and Thermal Engineering</i>
Kalita, P., M. Tech., (BHU)	<i>Computational Fluid Dynamics , High speed flows</i>
Dutta, P. P., M. E. (BIT Mesra)	<i>CAD, Laser forming, Mechatronics, soft computing</i>
Kirtania, S., M. Tech (IITG)	<i>Composite materials, Carbon nanotubes, Carbon nanotubes-based composites, Finite element method, Fracture mechanics.</i>
Haloi, P., ME (GU)	<i>Fluid and Thermal Engineering</i>
Singh, S. K., Ph.D. (IITG)	<i>Acoustics, Vibration, Machinery condition monitoring</i>
*Banerjee, S., Ph. D. (IITG)	<i>Materials and Manufacturing</i>
Bardalai, M., ME(GU)	<i>Thermal Engineering, Renewal Energy Conversion.</i>
Kashyap, S., M.Sc. (Engg.) (University of Alberta, Canada)	<i>Manufacturing and Materials Science</i>
Kalita, Z., ME (AIT)	<i>Mechatronics</i>
Bhadra, R. ME (BESUS)	<i>Manufacturing, Production Engineering</i>

### \*Recognized Supervisor

**LEGENDS:** **HoD**- Head of the Department, **TU**-Tezpur University, **BHU**- Banaras Hindu University, **GU**-Gauhati University, **AIT**- Asian Institute of Technology, Bangkok, **IITK**-Indian Institute of Technology Kanpur, **BIT**- Birla Institute of Technology, **IITG**- Indian Institute of Technology Guwahati, **BESAS**—Bengal Engineering and Science University , Shibpur

### Facilities

#### CAD Laboratory:

This laboratory is equipped with computers having server based installed software such as ANSYS -FLUENT combo, FLUENT 6.3 teaching version and Pro-E Wildfire 3.0 version. At present the laboratory has two servers and 25 computers for use of both students and academic staff.

#### Fluid Mechanics Laboratory:

This laboratory is equipped with hydraulic bench, discharge through orifice apparatus, Bernoulli's apparatus, flow meter apparatus, impact of jet apparatus, discharge over weir and notch attachments, energy losses in pipelines, Reynolds apparatus, and Multi-function measuring instrument (pressure, temperature, velocity, relative humidity, CO, CO<sub>2</sub> concentration) with relevant sensors.

#### Theory of Machine Laboratory:

This laboratory is equipped with universal governor apparatus, static and dynamic balancing equipment, whirling of shaft apparatus, apparatus for influence of inertia upon velocity and acceleration, and gyroscope apparatus.

#### Strength of Materials Laboratory:

This laboratory is equipped with Rockwell hardness tester, Brinell hardness tester, Vickers hardness tester, impact testing machine, universal testing machine with computer interfacing, digital torsion testing machine, rotating fatigue

machine, creep machine, thin cylinder testing machine, metallurgical polishing machine and digital LCD microscope.

**Material Science Laboratory:**

This laboratory is equipped with metal melting furnace, metallographic cutting machine, metallographic sample mounting machine, metallographic automatic polishing machine, injection molding machine, optical microscope, muffle furnace, and hot air oven.

**IC Engine/Automobile Laboratory:**

This laboratory has three setups - computerized single cylinder 4 stroke diesel engine, diesel smoke-meter, and a petrol car (Model ESTEEM).

**Kinematics Laboratory:**

In this laboratory, there are various types of models of different mechanisms, like shaper model, clutch model, Oldham coupling model, gear drive, belt drive, chain drive, etc.

**Turbo-Machinery Laboratory:**

This laboratory is equipped with centrifugal pump unit, plunger pump, turbine service unit and Francis turbine, all with computer interface.

**Vibration Laboratory:**

This laboratory has a universal vibration apparatus, in which thirteen numbers of experiments can be performed.

**Metrology laboratory:**

Instruments available in this laboratory are plunger type dial indicator, lever type dial indicator, external micrometer, universal bevel protractor, vernier caliper, sine vice, slip gauge, surface plate, surface roughness tester, different types of digital micrometers of various ranges, depth gauge, filler gauge, pitch gauge, and radius gauge.

**Thermal and Renewable Energy Laboratory:**

The equipment available in this laboratory are biodiesel manufacturing unit, bomb calorimeter, viscometer, density meter, flash and fire point apparatus, distillation apparatus, carbon residue apparatus, pour point and cloud point apparatus, copper strip corrosion apparatus, various cut section models (diesel engine, gear box, differential gear, steam engine models, pneumatic cylinder model), fixed bed pyrolysis oil production set-up, biomass gasifier, 100% producer gas engine generator test rig, gas chromatograph, hot wire anemometer, micro-manometer, fluidized bed dryer, pitot tube, and different energy efficient solar air heater.

**Central Workshop:**

This is a central facility well equipped with CNC lathe machine, CNC milling machine, high speed precision lathe machine, conventional lathe machines, shaping machine, vertical milling machine, horizontal milling machine, universal milling machine, high precision surface grinding machine, universal tool and cutter grinder, radial drilling machine, pillar drilling machine, double ended pedestal grinding machine, slotting machine, arc welding machine, oxyacetylene gas welding setup, TIG welding and MIG welding machine, power hacksaw, sheet bending roller machines, manual shearing machine, cutting force dynamometer, etc.

**Research Activity**

Number of journal papers published in last one year (2013): **18**

**Selected publications:**

1. Datta, D. Unit commitment problem with ramp rate constraint using a binary-real-coded genetic algorithm. *Applied Soft Computing*, **13**(9), 3873-3883, 2013.
2. Gogoi, T.K. Exergy analysis of a diesel engine operated with koroch seed oil methyl ester and its diesel fuel blends. *Int. J. Exergy*, **12**(2), 183-203, 2013.

**Research Projects:**

A number of R&D projects of total approximate amount of Rupees 1 crore, funded from external agencies are currently running in the Department.

## MOLECULAR BIOLOGY AND BIOTECHNOLOGY

(Year of Establishment: 1997)

The Department of Molecular Biology and Biotechnology (MBBT) was established in the year of 1997 with the objectives to create quality human resource and to engage in quality research work in the challenging and frontier areas of modern Biotechnology. The Department has close linkage with the industry and academic institutes of the country.

The current research activities of the Department include molecular genetic analysis of various human diseases/disorders, microbial, environmental and petroleum biotechnology, snake venom biochemistry, enzymology and enzyme technology, medicinal plants, immunology, immune genetics and evolutionary genetics, computational biology, nano-biotechnology, plant microbe interactions, cancer genetics and chemoprevention, and molecular virology.

### Programmes offered:

1. M. Sc. in Molecular Biology and Biotechnology
2. Integrated M. Sc. in Biosciences and Bioinformatics
3. Ph. D. in Molecular Biology and Biotechnology

#The students admitted to the M.Sc. Programme are eligible for monthly fellowship of Rs. 3000/- only (for detailed information please visit: [http:// www.tezu.ernet.in/dmbbt](http://www.tezu.ernet.in/dmbbt)) by the DBT supported M.Sc. Biotechnology teaching programme.

### Faculty and Areas of interest:

#### Professors

- |  |  |
|--|--|
| *Konwar, B.K., Ph.D. (IC), On-lien as V.C of NU    | <i>Petroleum Biotechnology, Plant Biotechnology, Genetic Engineering and Metagenomics, Bioenergy.</i>                                    |
| *Buragohain, A.K., Ph.D. (IC) On-lien as V.C of DU | <i>Drug discovery from medicinal plants, Diatom nanotechnology, Plant Biotechnology, Evolutionary Genomics, Petroleum Biotechnology.</i> |
| *Mukherjee, A.K., Ph.D. (BU)                       | <i>Snake venom biochemistry and Microbial biotechnology.</i>   |
| *Baruah, S., Ph.D. (PGIMER- Chandigarh)            | <i>Innate Immunity and Immunogenetics ((heterogeneity and evolution of immune responses).</i>  |

#### Associate Professors

- |                                |  |
|--------------------------------|--|
| *Ray, S.K., Ph. D. (CCMB)- HoD | <i>Molecular Plant -Microbe Interactions, Molecular evolution.</i>         |
| *Mandal, M., Ph.D. (IGIB)      | <i>Probiotics and nutrition, Microbial biofilm, Bioenergy</i>              |
| *Ramteke, A., Ph.D. (JNU)      | <i>Cancer Genetics and Chemoprevention.</i>                                |
| *Doley, R., Ph.D. (TU)         | <i>Anti-haemostatic proteins from snake venom and Hematophagus insect.</i> |

#### Assistant Professors

- |                                     |   |
|-------------------------------------|---|
| *Medhi, T., Ph.D. (IITKgp)          | <i>Enzymology and Bioprocess Engineering.</i>   |
| *Kalita, E., Ph.D. (NIPGR-GU)       | <i>Nanobiotechnology and Plant Functional Biology.</i>  |
| *Ponnam, S.P.G., Ph.D. (LVPEI-HU)   | <i>Molecular Genetics and disease biology of various human diseases/disorders.</i>                                |
| *Jha, A. N., Ph.D. (IISc)           | <i>Computational Biophysics, Bioinformatics.</i>  |
| *Mukhopadhyaya, R., Ph.D. (ISCS-JU) | <i>Cellular and Molecular Biology (Sub Areas: Inflammation, Cardiovascular disease), Microbial Biotechnology.</i> |
| *Saha, S., Ph.D. (IISc)             | <i>Cellular and Molecular Biology (Protein arginylation and its role in cellular function, Obesity).</i>          |
| Namsa, N.D., Ph.D. (IISc)           | <i>Molecular Biology of Rotavirus.</i>  |
| Dasgupta S., Ph.D. (VB)             | <i>Insulin resistance and type 2 diabetes.</i>  |
| *Satish Kumar, M.V., Ph.D. (IITG)   | <i>Computational Biotechnology and Bioinformatics.</i>  |
| Saikia, J. P., Ph. D (TU)- Ad-hoc   | <i>Plant Biotechnology</i>  |

#### \* Recognized Supervisor

**LEGENDS:** IC- Imperial College, London, NU-Nagaland University, DU-Dibrugarh University, BU-Burdwan University, CCMB-Centre for Cellular and Molecular Biology, IGIB-Institute of Genomics and Integrated Biology, JNU-Jawaharlal Nehru University, GU- Gauhati University, TU-Tezpur University, VB- Visva Bharati, DU^ - Delhi University, HU: University of Hyderabad, JU: Jadabpur University, PGIMER- Post Graduate Institute of Medical Education and Research, IITG- Indian Institute of Technology, Guwahati, IITKgp- Indian Institute of Technology, Kharagpur, NIPGR-National Institute of Plant Genome Research, LVPEI-L.V. Prasad Eye Institute, IISc- Indian Institute of Science, IACS-Indian association of Cultivation Sciences, HoD-Head of the Department.

## Facilities

The Department has several sophisticated instruments like Automated DNA sequencer, UHPLC, FPLC, HPLC systems, Real Time PCR Bioanalyzer, Spectrofluorimeter, Immunofluorescence Microscope, GC mass spectrometer and Fermenter. Department is equipped with a cold room, animal and plant cell culture facilities, animal experimentation laboratory and Bioinformatics facility. Apart from these individual; faculty research laboratories are well equipped to carry out advance research.

## Research Activity

No. of papers published in the year 2014 (April 2013-March 2014): 109

No. of ongoing research projects : 22

The Department of MBBT is supported by UGC SAP (DRS-1/DRS-2), DST-FIST and DBT strengthening project. Department also houses Bioinformatics infrastructure facility (DBT-BIF) for computational research and DBT-HUB to impart training on molecular biology to students and faculty members. The Department has ONGC-Centre for Petroleum Biotechnology.

## Selected Publications :

1. Gogoi B., Chatterjee P., Mukherjee S., Buragohain A. K. , Bhattacharya S., Dasgupta S., 2014. A polyphenol rescues lipid induced insulin resistance in skeletal muscle cells and adipocytes. *Biochemical and Biophysical Research Communications (In Pres)*.
2. Bordoloi, N. K., Rai, S. K., Chaudhuri, M. K., Mukherjee, A. K. 2014. Deep-desulfurization of dibenzothiophene and its derivatives present in diesel oil by a newly isolated bacterium *Achromobacter sp.* to reduce the environmental pollution from fossil fuel combustion. *Fuel Processing Technology* 119, 236–244.
3. Mahanta A., Kakati, S., Baruah, S. 2014. The association of IL8-251 T/A polymorphism with complicated malaria in Karbi Anglong district of Assam. *Cytokine* 65, 210–216.
4. Mandal, T., Venkata Satish Kumar M., Maiti P. K. 2014. DNA assisted self-assembly of PAMAM Dendrimers. *Journal of Physical Chemistry B (Accepted)*.

## PHYSICS

(Year of Establishment: 1998)

Department of Physics offers studies in various fields of physics leading to postgraduate and doctoral degree. The research interests of the faculty falls in various areas of condensed matter physics, photonics, high energy physics, microwaves, plasma physics, astrophysics, neutrino physics and nanoscience & technology. The Department also working in association with other institutes like IUCAA, Pune; CMACs, Bangalore, IIT, Guwahati, CAT, Indore, VECC, Kolkata, SAMEER, Mumbai and others.

The department provides a conducive and rigorous research environment. Course work in the chosen research areas is mandatory for all the doctoral students.

### Programmes offered

1. Integrated M. Sc. in Physics
2. Integrated B. Sc. B. Ed.
3. M. Sc. in Physics
4. M. Sc. in Nanoscience and Technology
5. Ph. D.

### Faculty and Areas of Interest

Professors	
Sirohi, R.S., Ph.D. (IITD), Bharat Ratna Lokapriya Gopinath Bordoloi Chair Professor	<i>Optics, optical Instrumentation, laser application, optical metrology.</i>
*Choudhury, A., Ph.D. (OU), Pro V.C.	<i>Condensed matter physics, Laser physics, Quantum electronics, Nano-science.</i>
*Kumar, A., Ph.D. (IITK)	<i>Condensed matter physics, Solid state ionics.</i>
*Sarma, J. K., Ph.D. (GU)	<i>Theoretical high energy physics, Particle physics.</i>
*Bhattacharyya, N. S., Ph.D. (DU <sup>^</sup> )- HoD	<i>Microwave Devices and EMI Shielding materials.</i>
*Das, N., Ph.D. (GU)	<i>Plasma Physics.</i>
Associate Professors	
*Ahmed, G. A., Ph.D. (GU)	<i>Laser physics, Optoelectronics.</i>
*Mohanta, D., Ph.D. (TU)	<i>Condensed matter physics and Nanoscience.</i>
*Deb, P., Ph.D. (JU)	<i>Nano science and Nano technology, Physics of materials.</i>
*Karmakar, P. K., Ph.D. (GU)	<i>Plasma physics, Astrophysics and Nonlinear dynamics.</i>
*Das, M. K., Ph.D. (GU)	<i>Theoretical High Energy Physics, Nuclear Physics.</i>
*Nath, P., Ph.D. (GU)	<i>Fiber optic sensors &amp; system, SERS, Biomedical instrumentation.</i>
Assistant Professors	
Francis, Ng. K., Ph.D. (GU <sup>+</sup> )	<i>Particle Physics Phenomenology and Particle Cosmology.</i>
#Biswas, R., Ph.D. (DU)	<i>Fiber Optic Instrumentation, PCFs; Geophysical instrumentation.</i>
*Pathak, A., Ph.D. (GU <sup>^</sup> )	<i>Molecular Astrophysics of Polycyclic Aromatic Hydrocarbons (PAHs), Interstellar Dust (Cosmic Dust), UV Astronomy.</i>
*Gogoi, R., Ph.D. (GU)	<i>Infrared Astronomy, High Energy Physics.</i>
#Borah, D., Ph.D. (IITB)	<i>Elementary Particle Physics and Cosmology.</i>
*Das, S.K., Ph.D. (IISc)	<i>Materials Science.</i>
Choudhury, A.J. Ph.D. (GU), DST Inspire Faculty	
Sarmah, R. Ph.D. (IISc)	

### \* Recognized Supervisor, # Recognized Co-supervisor

*LEGENDS: OU- Oxford University, GU-Gauhati University, DU<sup>^</sup>-Delhi University, TU-Tezpur University, JU-Jadavpur University, DU- Dibrugarh University, GU<sup>+</sup>-Gauhati University, GU<sup>^</sup>-Gorakhpur University, IISc-Indian Institute of Science, IITK-Indian Institute of Technology, Kanpur, IITB-Indian Institute of Technology, Bombay, IITD Indian Institute of Technology, Delhi*

## Facilities

The Department has state-of-art instruments and facilities for both experimental and theoretical research. Some of the equipments housed in the department are high vacuum coating, X-band microwave bench, electrochemical workstation, LCR HiTester meter, SEM, XRD, Double Distilled water treatment plant, material developing facilities, semiconductor characterization set-up, UV-VIS spectrophotometer, Millipore water purification system, LBM film deposition unit, FT-IR, spectrophotometer, vector network analyzer, spin wave instability characterization system, antenna parameter measurement facility, hydraulic press and other systems. The Department also has high ended computational facility to carry theoretical and astrophysics research work in addition to a departmental library. The department also offers its facilities to the students of other institutes and inter-departments.

The research activity in the department is supported by University's Sophisticated Instrument and Analytical Centre (SAIC) and an upto date library

## Research Activity

No. of papers published in the year 2014 (up to September) : 98

No. of ongoing research projects : 18

## Selected publications

1. Biswajit Choudhury, Pawan Chetri and Amarjyoti Choudhury, Oxygen defects and formation of  $Ce^{3+}$  affecting the photocatalytic performance of  $CeO_2$ , *RSC Advances*, DOI: 10.1039/C3RA44603D, 2013
2. A. K. Nath and A. Kumar, Swift heavy ion irradiation induced enhancement in electrochemical properties of ionic liquid based PVdF-HFP-layered silicate nanocomposite electrolyte membranes, *J. Membrane Sci.* 453 (2014) 192-201.
3. R. S. Sirohi, Digital shear speckle pattern interferometry with holo-elements, *Asian Journal of Physics*, 23(4), 509-515 (2014).
4. M. Devee and J. K. Sarma, Nonlinear GLR-MQ evolution equation and  $Q^2$ -evolution of gluon distribution function, *Euro. Phys. J. C* (2014) 74:2751.
5. K. Borah, A. Phukan, N. S. Bhattacharyya and S. Bhattacharyya, Design of light weight microstrip patch antenna on dielectric and magnetodielectric substrate for broadband application in x-band, *PIER B*, vol 60, pg no. 157-168 (2014).
6. Saurav Bhattacharjee and Nilakshi Das, Ion wake formation with dust charge fluctuation in complex plasma, *Phys. Plasmas*, 20, 113701, 2013.

## SOCIOLOGY

(Year of Establishment: 2006)

The Department of Sociology of Tezpur University was established in 2006 with a Masters programme. Subsequently, it launched a Ph.D. programme in 2008. The Department is dedicated toward nurturing competent and socially sensitive graduates through rigorous teaching and research activities. The faculty members of the Department have a wide range of interests and expertise and are currently engaged in research in areas such as Development, Education, Environment, Ethnic Conflicts, Governance, Health, Migration, Social Movements, Science Studies, etc. The curriculum lays emphasis on teaching and learning of general concerns of sociology as well as issues of sociological significance in northeastern India which constitute a special focus of the teaching and research of the Department. The students pursuing their Masters in the Department not only have to learn critical approaches and perspectives in the classroom but are also encouraged to participate in short field visits during vacations as part of their mandatory research projects. The Department also makes an effort to expose the students to the prevailing social realities through activities such as outreach programmes, regular film screening, seminars and other programmes in collaboration with other social organisations.

### Programmes offered

1. M. A. in Sociology
2. Ph. D.

### Faculty and Areas of Interest

#### Professors

Kalam, M.A., Ph.D.(UM)                      *Migration, Identity Politics, Ethnicity, Environment and Society.*

\*Sharma, C.K., Ph. D(DU<sup>^</sup>)                      *Social Development, Culture and Media Studies, Environmental Sociology, Nationalism.*

#### Associate Professors

\*Deka, R., Ph.D. (DU)                      *Sociological theories, Sociology of Movement, Agrarian Sociology.*

\*Kikhi, K., Ph.D. (NEHU)-HoD                      *Research Methodology, Gender and Society, Sociology of Northeast India, Tribal Studies.*

#### Assistant Professors

Das, A.K., M. Phil. (DU<sup>^</sup>)                      *Sociology of Development, Sociology of Health and Illness, Sociology of Governance.*

\*Sumesh, S. S., Ph.D. (UK)                      *Research Methods, Social Stigma and Exclusion, Community Health, Environmental Movements.*

Goswami, N., Ph.D. (IITK)                      *Sociology of Education, Identity of Politics, Multiculturalism.*

Das, S., M. Phil. (JNU)                      *Gender Studies, Sociology of North East India.*

Ray, S. M. Phil. (DU<sup>^</sup>)                      *Sociology of Science and Sociology of India*

Shimreiwung, A.S. Ph.D. (JNU)                      *Sociology of Religion, Environmental Sociology, Sociology of Music*

#### \* Recognized Supervisor

*LEGENDS: UM-University of Madras, DU<sup>^</sup>-Delhi University, DU-Dibrugarh University, UK-University of Kerala, HoD-Head of the Department, NEHU-North Eastern Hill University, IITK-Indian Institute of Technology, Kanpur, JNU-Jawaharlal Nehru University*

**Facilities**

The Department has a seminar cum screening hall with projection facilities and audio-visual teaching aids. Selected books and photocopied materials of seminal contributions in sociology are available in the Departmental Library. The Department also has a small Computer Laboratory for the use of students and research scholars.

**Research Activity**

No. of papers published in the year 2014 : **09**

No. of ongoing research projects: **06**

**Selected Publications**

1. Sharma, C.K. & Sarma, I, 2014. "Issues of Conservation and Livelihood in a Forest Village of Assam", *International Journal of Rural Management*, Vol. 10, No. 1pp 47-68, SAGE Publication
2. Kalam, M.A. 2014 "Indian Model Managing Diaspora (Non-resident Indians)" in *Potentials and Prospects of Pakistani Diaspora*, Islamabad Policy Research Institute, Pakistan and Hanns Seidel Foundation, Germany, pp 160-173.



**ANNEXURE- I**

**IMPORTANT DATES**

1	Online portal opens on	8th November 2014
2	Online application closes on	5th December 2014
3	Publication of shortlisted names	12th December 2014
4	Date of written test and interview	18th-19th December 2014
5	Date of admission and course registration	16th and 19th January 2015

\* No complaint shall be entertained after the specified date

## ANNEXURE II

### Fees Structure for the Ph.D. Programme w.e.f. SPRING SEMESTER, 2014

Particular Fee	Mode	Ph.D. Full time	Ph.D. (Part Time/ Spon.)
Admission	Once on admission	500	500
Registration	Once on admission	150	150
Identity card	Once on admission	50	50
Convocation	Once on admission	500	500
Provisional certificate	Once on admission	100	100
Alumni Association	Once on admission	500	500
Caution deposit (Library and Laboratory)	Once on admission	2000	2000
Hostel Caution deposit	Once on admission	3000	3000
Hostel Mess Advance	Once on admission in case of Hostel boarder	1500	1500
Hostel admission/re-admission (Single seater for Ph.D. students)	Per semester in case of Hostel boarder	3000	3000
Enrollment	Per semester ( <i>w.e.f. 2<sup>nd</sup> sem. Onward</i> )	500	500
Tuition	Per semester	1500	2000
Library	Per semester	350	350
Students' activity	Per semester	500	500
Medical	Per Semester	250	250
Transport	Per semester	1000	1000
Laboratory (including computer usage)	Per semester	1000	1000
Research Fee	Per semester	3000	4000
Infrastructure and amenity	Per semester	1000	1000
Fan, Electricity and Water charge	Per semester	300	300
Students' Welfare Fund	Per semester	150	150
Development Fund	Per semester	1500	1500
Thesis Examination Fee	At the time of submission of thesis	5000	5000
Consumable Charge  <i>(Additional fee for the students of the Depts. of Chem. Scs., MBBT, Physics, Env. Sc. and FET)</i>	Per semester	2000	2000
** Health Insurance	Per annum <i>(Students above 35 yrs. of age are not covered in this scheme)</i>	406	406

\* Candidates admitted to the Ph.D. programme in the Departments of Chemical Sciences, Molecular Biology and Biotechnology, Physics, Environmental Science and Food Engineering and Technology will be required to pay an additional fee of **Rs. 2,000/- (Rupees Two thousands)** per semester on account of consumables .

N.B: SC/ST students are exempted from paying hostel seat rent.

## ANNEXURE III

### Prescribed Format of OBCNCL Certificate

#### **FORM OF CERTIFICATE TO BE PRODUCED BY OTHER BACKWARD CLASSES APPLYING FOR APPOINTMENT TO POSTS/ ADMISSION TO CENTRAL EDUCATIONAL INSTITUTIONS (CEIs), UNDER THE GOVERNMENT OF INDIA**

This is to certify that Shri/Smt./Kum.....  
Son/Daughter of Shri/Smt.....  
of Village/ Town .....District/Division.....  
inthe.....Community which is recognized as a backward  
class under:

- (i) Resolution No. 12012 / 68 / 93-BCC(C) dated 10 / 09 / 93 published in the Gazette of India Extra ordinary Part I Section I No. 186 dated 13 / 09 / 93.
- (ii) Resolution No. 12012 / 9 / 94-BCC dated 19 / 10 / 94 published in the Gazette of India Extra ordinary Part I Section I No. 163 dated 20 / 10 / 94.
- (iii) Resolution No. 12012 / 7 / 95 BCC dated 24 / 05 / 95 published in the Gazette of India Extra ordinary Part I Section-I No. 88 dated 25 / 05 / 95.
- (iv) Resolution No. 12012 / 96 / 94-BCC dated 9 / 03 / 96.
- (v) Resolution No. 12012 / 44 / 96 -BCC dated 6 / 12 / 96 published in the Gazette of India Extra ordinary Part I Section I No. 210 dated 11 / 12 / 96.
- (vi) Resolution No. 12012 / 13 / 97-BCC dated 03 / 12 / 97.
- (vii) Resolution No. 12012 / 99 / 94-BCC dated 11 / 12 / 97.
- (viii) Resolution No. 12012 / 68 / 98-BCC dated 27 / 10 / 99.
- (ix) Resolution No. 12012 / 88 / 98-BCC dated 06 / 12 / 99 published in the Gazette of India Extraordinary Part-I Section-I No. 270 dated 06 / 12 / 99.
- (x) Resolution No. 12012 / 36 / 99-BCC dated 04 / 04 / 2000 published in the Gazette of India Extraordinary Part-I Section-I No. 71 dated 04 / 04 / 2000.
- (xi) Resolution No. 12012 / 44 / 99-BCC dated 21 / 09 / 2000 published in the Gazette of India Extraordinary Part-I Section-I No. 210 dated 21 / 09 / 2000.
- (xii) Resolution No. 12015 / 9 / 2000-BCC dated 06 / 09 / 2001.
- (xiii) Resolution No. 12012 / 1 / 2001-BCC dated 19 / 06 / 2003.
- (xiv) Resolution No. 12012 / 4 / 2002-BCC dated 13 / 01 / 2004.
- (xv) Resolution No. 12012 / 9 / 2004-BCC dated 16 / 01 / 2006 published in the Gazette of India Extra ordinary Part I Section I No. 210 dated 16 / 01 / 2006.

Shri/Smt./Kum. .... and/or his family ordinarily reside(s)  
in the .....District/Division of ..... state. This is also  
to certify that he/she does not belong to the persons/section (Creamy Layer) mentioned in Column 3 of the Schedules  
of the Government of India. Department of Personnel & Training O.M.No.36012/22/93-Estt.(SCT) dated 08/09/93  
which is modified vide OMNo.36033/3/2004Estt.(Res.) dated 09/03/2004.

Dated:.....District Magistrate/Deputy Commissioner/  
Competent Authority

Seal

#### **NOTE :**

- (a) The term ordinarily used here will have the same meaning as in Section 20 of Representation of the People Act. 1950.
- (b) The authorities competent to issue Caste Certificates are indicated below:
  - (i) District Magistrate/Additional Magistrate/Collector/Deputy Commissioner/Additional Deputy Commissioner/Deputy Collector/1stClassStipendiaryMagistrate/Sub Divisional Magistrate/Taluka Magistrate/Executive Magistrate/ExtraAssistantCommissioner(notbelowtherankof1stClass Stipendiary Magistrate)
  - (ii) Chief Presidency Magistrate/Additional Chief Presidency Magistrate/Presidency Magistrate.
  - (iii) Revenue Officer not below the rank of Tehsil darand
  - (iv) Sub-Divisional Officer of the area where the candidate and/or his family resides.

## ANNEXURE -IV

### AFFIDAVIT BY PARENT/GUARDIAN

- I, Mr./Mrs./Ms. .... (full name of parent/guardian) father/mother/guardian of..... (full name of student with admission/registration/enrolment number), having been admitted to .....(name of the institution), have received a copy of the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, (hereinafter called the "Regulations"), carefully read and fully understood the provisions contained in the said Regulations.
2. I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
3. I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against my ward in case he/she is found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
4. I hereby solemnly aver and undertake that
- a) My ward will not indulge in any behaviour or act that may be constituted as ragging under clause 3 of the Regulations.
  - b) My ward will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulations.
5. I hereby affirm that, if found guilty of ragging, my ward is liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against my ward under any penal law or any law for the time being in force.
6. I hereby declare that my ward has not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, the admission of my ward is liable to be cancelled.

Declared this \_\_\_day of \_\_\_\_\_ month of \_\_\_\_year.

\_\_\_\_\_  
Signature of deponent

Name:  
Address:  
Telephone/Mobile No.:

#### VERIFICATION

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.

Verified at .....(place) on this the ....(day) of ....(month) , ..... (year) .

\_\_\_\_\_  
Signature of deponent

Solemnly affirmed and signed in my presence on this the (day) of (month), (year ) after reading the contents of this affidavit.

**OATH COMMISSIONER**

**ANNEXURE -V**

**AFFIDAVIT BY THE STUDENT**

1. I, ..... (*full name of student with admission/registration/enrolment number*) s/o d/o Mr./Mrs./Ms. ...., having been admitted to ..... (*name of the institution*), have received a copy of the UGC Regulations on Curbing the Menace of Ragging in Higher Educational Institutions, 2009, (*hereinafter called the "Regulations"*) carefully read and fully understood the provisions contained in the said Regulations.
2. I have, in particular, perused clause 3 of the Regulations and am aware as to what constitutes ragging.
3. I have also, in particular, perused clause 7 and clause 9.1 of the Regulations and am fully aware of the penal and administrative action that is liable to be taken against me in case I am found guilty of or abetting ragging, actively or passively, or being part of a conspiracy to promote ragging.
4. I hereby solemnly aver and undertake that
  - a) I will not indulge in any behaviour or act that may be constituted as ragging under clause 3 of the Regulations.
  - b) I will not participate in or abet or propagate through any act of commission or omission that may be constituted as ragging under clause 3 of the Regulations.
5. I hereby affirm that, if found guilty of ragging, I am liable for punishment according to clause 9.1 of the Regulations, without prejudice to any other criminal action that may be taken against me under any penal law or any law for the time being in force.
6. I hereby declare that I have not been expelled or debarred from admission in any institution in the country on account of being found guilty of, abetting or being part of a conspiracy to promote, ragging; and further affirm that, in case the declaration is found to be untrue, I am aware that my admission is liable to be cancelled.

Declared this \_\_\_day of \_\_\_\_\_ month of \_\_\_year.

\_\_\_\_\_  
Signature of deponent

Name:

**VERIFICATION**

Verified that the contents of this affidavit are true to the best of my knowledge and no part of the affidavit is false and nothing has been concealed or misstated therein.  
Verified at .....(place) on this the .....(day) of .....(month),..... (year) .

\_\_\_\_\_  
Signature of deponent

Solemnly affirmed and signed in my presence on this the (day) of (month), (year ) after reading the contents of this affidavit.

**OATH COMMISSIONER**

## CONTACT ADDRESSES

All enquiries about academic programmes and requisite qualification should be directed to the office of the Department concerned.

**Enquiries relating to receipt of applications, entrance examination centre and other matters relating to the entrance examinations should be directed to the Controller of Examinations at 03712-267114.**

**Controller of Examinations,  
Tezpur University, Napaam,  
Tezpur-784028  
Telephone: +91 3712 267114  
                  +91 3712 273332  
                  +91 3712 273141  
E-mail : boral@tezu.ernet.in**

Department/Office	Office number (03712)	Mobile number * (HoDs)	e-mail
Business Administration	275000	9435015074	hod_ba@tezu.ernet.in
Chemical Sciences	275050	9957184354	hod_chem@tezu.ernet.in
Civil Engineering	275950	9435085338	hod_civil@tezu.ernet.in
Computer Science and Engineering	275100	9435084468	hod_cse@tezu.ernet.in
Cultural Studies	275150	9954449460	hod_cul@tezu.ernet.in
Electronics and Communication Engineering	275250	9954449462	hod_ece@tezu.ernet.in
Energy	275300	9957184356	hod_ene@tezu.ernet.in
English and Foreign Languages	275200	9954449463	hod_efl@tezu.ernet.in
Environmental Science	275600	9435490582	hod_env@tezu.ernet.in
Food Engineering and Technology	275700	9435700993	hod_fet@tezu.ernet.in
Hindi	275751	9435384799	hod_hin@tezu.ernet.in
Mass communication and Journalism	275450	9435185424	hod_mcj@tezu.ernet.in
Mathematical Sciences	275500	9957191528	hod_ms@tezu.ernet.in
Mechanical Engineering	275850	9435170182	hod_mech@tezu.ernet.in
Molecular Biology and Biotechnology	275400	9954471151	hod_mbbt@tezu.ernet.in
Physics	275550	9435084076	hod_phy@tezu.ernet.in
Sociology	275800	9954449471	hod_soc@tezu.ernet.in

***\*Mobile Number should be used during office hours and only in case of emergency.***