

DOCTORAL  
PROGRAMMES 2025  
Assam Don Bosco University



*For the promotion of the human mind  
in the search for truth  
and the development of knowledge specialists  
for the evolution of culture  
and the betterment of life in all its myriad manifestations...*



ASSAM  
DON BOSCO  
UNIVERSITY

# ASSAM DON BOSCO UNIVERSITY

Assam Don Bosco University (ADBU) is established as the first State University of Assam in the private sector on 29 March 2008, and set up by Don Bosco Society in response to the felt educational needs of the people of North-East India. In a little over 10 years, Assam Don Bosco University has become one of the best Universities in the Northeast and has the distinction of being the only private University in Assam with an 'A' Grade from National Assessment and Accreditation Council (NAAC). The University has also been given a 12B status by the University Grants Commission, hence, becoming the first private University to attain this status in North East and the fourth in the country.

## Vision and Focus

Assam Don Bosco University has the vision of moulding intellectually competent, morally upright, socially committed and spiritually inspired persons at the service of India and the world of today and tomorrow, by imparting holistic and personalised education.

To achieve this vision, the University strives to ensure excellence in teaching, learning and evaluation process, in research, consultancy and extension programmes, in continuous and on-going evaluation of every process in the system, in a holistic approach to education geared to an all-round development of dependable human beings.

Envisioned as a centre for culture, knowledge, research and intellectual ferment, this university focuses its teaching, research and consultancy on three core areas: science and technology sector, service sector and social sector. These areas have been chosen because:

- they focus on cutting-edge technology at the service of contemporary fast developing knowledge-society and knowledge-economy
- they ensure the employability of our graduates and their capacity to become innovative entrepreneurs and
- equip the students with the skills necessary to impact and transform their society.



# PhD PROGRAMME

## Preamble

Higher education and research constitute the backbone of University systems as they focus on the promotion of the human mind, the search for truth, the development of knowledge specialists, the evolution of culture, and the betterment of life in all its myriad manifestations.

While graduate education is largely geared to raise the level of employability of students, training them to play leadership roles in providing the services on which a developed society depends, such as chemists, accountants, nurses, social workers, psychologists, professors, teachers, and business managers, research is central to our survival and advancement in a digitalized, knowledge-based, global economy.

Following the time-hallowed traditions of the great universities of the world, this University seeks to make itself a centre for culture, knowledge, research, intellectual ferment, for critical thinking and analysis of whatever shapes and impacts human life, a centre that influences thinking, planning and policy making on vital aspects of social life such as religion, culture, society, politics, governance, education, healthcare, etc. These objectives have been carefully enunciated to attract the right type of candidates for research programmes in the University – we are looking for bright young men and women with a passion for excellence and scholarship, and experienced guides and mentors with a flair for enthusing young minds with the thirst to take on challenging research projects and assignments in the University.

## Objective

The objective of the Ph.D programme of Assam Don Bosco University is to enable a scholar to undertake research which leads to a contribution to the body of existing knowledge characterized either by the discovery of new facts, solution of unsolved problems, development of new techniques or by reinterpretation of known facts or new solutions to problems. A research scholar who has completed the Ph.D programme of the University should be capable of undertaking independent research and with further experience, should be able to guide others in research.

## Eligibility and Admission

Candidates with at least 55% marks or a CGPA of 6.0 on a scale of 10 for Master's Degree in the concerned discipline or an allied discipline are eligible to be admitted to the Ph.D. programme.

Candidates are required to appear for a written test and/or an interview to be conducted by the Board of Research Studies of Assam Don Bosco University. Candidates shall be shortlisted for admission into the programme according to merit determined after giving suitable weightage to the following:

- marks/grades obtained in the Master's Degree
- performance in the test and/or personal interview

The final list of candidates for admission shall be declared on the basis of the number of seats available and the performance of the candidates.





# THRUST AREAS

The thrust areas for research in the University for the current session are as given below:

## Biochemistry

- Protein-Lipid and Protein-Protein Interactions, Macromolecular Crowding
- Fluorescence Spectroscopy, ERP Spectroscopy, Fluorescence Microscopy (FCS, TIRF, CONFOCAL)
- Phytochemistry of Medicinal and Aromatic Plants
- Plant – Microbe Interaction
- Sustainable Environment Management
- Gut Microbiome
- Plant Bioactives and Toxicogenomics
- Medicinal Plant & Bioinformatics, Climate Change & Bioremediation
- Faunal Diversity, Entomology and Pest Management, Host-Plant Interactions

## Biotechnology

- Cancer Biology, Tumor, Immunology
- Molecular and Cell Biology, Bio-film Biology
- Drug Discovery, Ethnomedicine, Antibiotics Resistance
- Environmental Biotechnology, Environmental Remediation
- Ecology, Biodiversity, Entomology, Plant-insect Interaction
- Microbial Biotechnology, Virology
- Medicinal Plants and Bioinformatics
- Biotechnology of Medicinal and Aromatic Plants, Fermentation and Metabolomics for Aroma
- Environmental and Food Biotechnology; Nanobiotechnology
- Bacteriophage, Infectious Disease, Mycoremediation, Mushroom Cultivation

## Botany

- Plant Microbiology
- Plant Ecology & Biodiversity Conservation
- Plant Systematics
- Plant Biochemistry
- Plant Molecular Biology
- Biowaste Valorization towards value added products and circular
- Economy
- Bioenergy and Biorefinery
- Plant Biotechnology
- Biotechnology
- Plant Stress Physiology

## Chemistry

- Biophysical Chemistry of Proteins
- Heterocyclic and Sustainable Chemistry
- Weak Interactions, Catalyst Design
- Catalysis, Adsorption and Environmental Chemistry
- Organic synthesis, Catalysis, C-H Activation
- Synthetic Organic Chemistry
- Nanomaterials, Sensors and Bioinorganic Chemistry

- Adsorption and Catalysis, Waste Management and Water Purification, Upgradation of Ores and Minerals
- Study of Non-covalent Interactions, Understanding the Mechanism of Water Splitting, and Designing Novel Materials for Water Splitting
- Simulations of Biomolecules and Biomolecular Interactions
- Computational Chemistry and Molecular Modelling of Non-Covalent Interactions
- Medicinal Chemistry
- Bio-catalysed Synthetic Investigations

## Civil Engineering

- Transportation Engineering and Water Resources
- Geo-informatics
- Seismic Safety and Vulnerability of Structures
- Fluid and Soil Structure Interaction
- Geotechnical and Structural Engineering
- Structural Engineering
- Environmental Engineering
- Remote Sensing & GIS
- Water Resources, GIS

## Commerce

- Accounting, Finance and Marketing
- Banking and Finance
- Entrepreneurship
- Investment and Portfolio Management
- Finance and Management
- Human Resource Marketing

## Comparative Religion

- Themes, Symbols, Myths and Rituals among the World's Religions
- Beliefs and Practices Regarding the Sacred, the Numinous, the Spiritual, the Divine

## Computer Science and Engineering

- Real Time Database Systems
- Digital Image/Signal Processing
- Speech Processing
- Human-Computer Interaction, Bio-Medical Image Processing
- Computer Network and Network Security
- Human-Computer Interaction, Artificial Intelligence
- Machine Learning, Decision Theory
- Applied Cryptography, Soft Computing
- Network on Chip, Network Security
- Incremental Learning, Open set recognition problem, Deep Learning
- Data Mining, Machine Learning, Bio-Informatics
- Net Security
- Cyber Security
- AI/ML/DL, NLP
- Wireless Sensor Network (WSN), IoT or any relevant areas

- Computer Vision, Algorithm

### Computer Applications

- Bio-inspired Computation
- Computer Vision
- Graph Theory
- Network security
- IoT related research in Agriculture
- Theoretical Computation
- Medical Image Processing, Web service,
- Service Oriented Computing,
- Software as a Service (SaaS)
- Data Science
- Machine Learning
- Soft Computing
- Artificial Intelligence
- Cyber Security
- Speech Processing
- Image Processing
- Distributed Computing
- Fog Computing
- Edge Computing
- Cloud Computing
- Health Informatics, Machine Learning, Data Privacy and Security
- Deep Learning
- Computer Vision, Pattern Recognition

### Economics

- Developmental Economics
- International Trade and Investment
- Macro-econometric Modelling
- Monetary, Fiscal and External Policies
- Agricultural Economics
- Economy of Regulation
- Environmental Economics
- Impact Evaluation
- Institutional Economics
- Natural Resources and Agricultural Economics
- Political Economy
- Public Policy
- Health & Labour Economics
- Social Safety Nets, Infrastructure

### Education

- Educational Leadership and Management
- Classroom Management, Teacher Supervision
- Curriculum Development
- Educational and Developmental Psychology
- Sociology of Education
- Adolescent Development
- Comparative Education
- Education for the Gifted and Creative
- Educational Administration and Management
- Educational Philosophy
- Life Skills education
- Research Methodology
- Teacher Education
- Population Education
- Environmental Education

- Behavioural Technology
- Inclusive Education
- Value Education
- Science Education
- Language Education
- Instructional Technology
- Educational Psychology and Service Learning
- ICT

### Electrical and Electronics Engineering

- Optoelectronics
- Renewable Energy Systems
- Disaster Forecasting
- Generation Prediction
- Solar Photovoltaic Systems
- Grid Integration of Renewable Energy
- Microwave Sensors
- Remote Sensing
- Machine Learning
- Signal Processing
- Condition Monitoring
- Photonics
- Thin Film Technology
- Electrical Sensors and Actuators,
- Microwave Remote Sensing
- Applications of AI and ML in Engineering
- Network Reconfiguration in Power Systems, Applications of AI and ML in Power Systems
- Optical Sensors, Optical Modelling, Micro-Fabrication
- Fault Detection and Identification, Sensors and Signal Processing
- Solar Photovoltaic Systems, Power Systems

### Electronics and Communication Engineering

- Nano-structured Sensors, Bio-sensors
- Dye-sensitized Solar Cells
- Biomedical Instrumentation
- Optoelectronics
- Embedded Systems
- Speech Processing
- Bioengineering, Bioinformatics, Terahertz Technology
- Nano Technology, Artificial Intelligence and Machine Learning
- High Frequency Communication, Next Generation Communication Networks, AI in Communication
- IoT and Embedded System, Embedded Vision
- Design and Evolution of Microstrip Patch Antennae, Smart Antennae and 5G Antenna Design
- Nano Technology Based Sensor Design, Semiconducting Materials and Devices
- Nano Science and Nano Technology, Nanoelectronics

### English

- Linguistics
- American Literature
- Postcolonial Literature
- Gender Studies

- Phenomenology
- Socio Linguistics
- Language Shift and Maintenance
- Gender Difference in Speech
- Popular Literature
- Cultural Studies
- Race and Body Politics
- North-East India Studies
- Language and Literature from North East India
- Diaspora Studies
- Indian Writing in English
- South Asian Literature
- Diaspora Literature
- English Language Education
- English Language Teaching
- Contemporary Theories in ELT
- Contemporary British Literature
- Ecocriticism

### Mechanical Engineering

- Hydrodynamics and Related Areas
- Product Design
- Industrial Design
- Bio Printing and 3D Printing
- Design Management
- Design Thinking
- UX-UI & User Centered Design
- System design for Sustainability
- Design and Design Management
- Industrial Design
- Bio-Mechanical Engineering
- Rapid Prototyping
- Innovation Thermal Engineering
- Renewable Energy
- Interdisciplinary Research

### Management

- Entrepreneurship, Marketing Management
- Human Resource Management, Corporate Governance
- Tourism, Finance, Entrepreneurship, Digital Marketing, Behavioural Sciences, Investment Behaviour, Marketing & Consumer Buying Behaviour, Workplace Motivation
- Tourism Management
- General Management
- HRM and Tourism Management
- Insurance Management
- Entrepreneurship, Banking and Insurance

### Mass Communication

- Society, Development and Communication, Tribal and Folk Media, Media, Religion and Culture, Media Ethics
- Global Media Issues, Media Management, Public Relations, Corporate Strategies, Advertisement, Internet and the Social Media
- Convergent Media, ICT in Higher Education and Knowledge Society
- Journalism, Gender studies
- Traditional media, Digital media, New media

- Mobile communication
- Television Production, Media Communication Research, Broadcast Media

### Mathematics

- Machine Learning
- Fuzzy Mathematics
- Number Theory
- Differential Equations
- Fluid Mechanics
- Optimization Techniques
- Pure and Applied Mathematics
- Analysis and Number Theory
- Numerical Analysis, IoT Anomaly
- Topology, Functional Analysis and Dynamical System
- Graph Theory and Algebraic Graph Theory
- Magnetohydrodynamics, Fluid Dynamics
- Algebra, Fuzzy Mathematics, Automation Theory

### Microbiology

- Microbial Biotechnology, Ecology, Biodiversity
- Antibiotics, Biofilm Biology
- Environmental Remediation, Environmental Microbiology
- Infectious Disease, Vector Biology and Host Parasite Interactions
- Arboviral Disease and Phage Therapy
- Microbial Interactions & Sociomicrobiology, Probiotics and Fermented Foods, Natural Antimicrobials & Biocosmetics

### North East India Studies

- Culture, Religious Beliefs and Post-Modern Society in North-East India
- Ethnicity, Ideology and Identity Formation in North-East India
- A Philosophy of Culture for North-East India
- Society in NE India
- People and Culture of NE India
- Development Process
- Food and Health Security Issues of People of NE India
- Issues Relating to Disability and Human Rights Issues

### Philosophy

- Classical and Tribal Interpretation of Life and Being
- The Sacred and the Profane
- Contemporary Debates in Moral Philosophy
- Philosophical Moorings of a Society - Land, Forest and Faith
- Intercultural Philosophy, Dialogue of Cultures and Ecosophy (Eco-philosophy)

### Pharmacy

- Natural Chemistry, Metabolic Disorders
- Analytical Method Development and Stability Studies of Pharmaceuticals
- Dosage Form Development and Particle

- Engineering
- Ethnobotany, Natural Product Development for Endocrine Diseases and Metabolic Diseases
- Development of Heterocyclic Compound, Natural Product and Nanoparticles

### Physics

- Condensed Matter Physics
- Electronics
- Nano Physics
- Plasma Physics
- Astrophysics
- Particle Physics
- High Energy Physics
- Nuclear Physics
- Computational Material Science
- Nanoelectronics/Nanosensors

### Psychology

- Culture, Heredity, Environment and Developmental Psychology; Psycho-spiritual Integration
- Psychology of Meaning and Psychology of Leadership
- Psychological Assessment and Counselling
- Trauma and Transformation
- Socio-Cultural Determinants and Behavioral Psychology
- Positive Psychology
- Learning Disability and Educational Psychology
- Social Psychology, Clinical Psychology, Psychological Research
- Addiction and Trauma Psychology
- Analytical Method Development and Stability studies of Pharmaceuticals

### Public Administration

- Urban, Rural and E-Governance
- Development Administration and Politics
- Social Accountability and Participation
- Public Policy, Local Governance
- Comparative Public Administrative Issues
- Personnel Policy
- Administrative Structures and Organizations
- Geo-politics and Administration
- Environmental Governance, ICT and Governance

- Issues of Women, Ethnicity
- Culture and Globalized Transition
- Women Studies, North East Governance, Local Governance, and Social Movement and Issues in North East India
- Community Development, Children & Childhood Studies, Social Development
- Indian Administration, Local Governance, and Tribal Studies

### Social Work

- Community Mobilization
- Disease Control
- Governance in Sixth Schedule
- Health Management
- Health Seeking Behavior
- Inclusive Development
- Infrastructure and Development Relations in North East India
- Maternal and Child Health
- Medical and Psychiatry
- Preventive and Social Medicine
- Rights-based Approaches to Development
- Social Work and its Psychosocial Correlates
- Sustainable Community Development
- Women Empowerment
- Child Centered Social Work Practice
- Human Resource Management( Social Work Perspective)
- Child Rights, NGOs, Human Rights
- Family and Child Welfare, Human Rights

### Zoology

- Cell and Molecular Biology
- Animal Physiology
- Biochemistry and Immunocytochemistry
- Aquatic fauna
- Entomology
- Medicinal plants
- Reproductive Biology, Natural Product, Toxicology
- Medical Biotechnology
- Herpetofauna
- Bioinformatics
- Ornithology, Ecology, Wildlife Conservation Ecology, RS & GIS, Wildlife Management, Climate Change, Behavioural Ecology, Fish and Fisheries

# Application Procedure

## Apply Online

1. Visit [www.dbuniversity.ac.in/a](http://www.dbuniversity.ac.in/a)
2. Register yourself. On registration you will receive a verification email. Verify your email.
3. Apply
4. Pay the application fee of Rs. 1,000/- online
5. Complete the admission process before notified date.

**NOTE: Non-paid application will not be processed nor shortlisted for entrance test/interview.**

## Written Test

A candidate who has qualified NET/GATE or similar national level tests is exempted from the written test.

Don Bosco University will test the aptitude of the candidates by holding a written test in the following areas:

- Research Methodology
- Subject Specific Area

## Interview

All candidates shall attend a personal interview at which he/she shall be required to discuss his/her research interest/area. At the interview the candidate shall present a research proposal, not exceeding 300 words, which will delineate the

- area of study chosen for research
- relevance of the proposed research
- reason for the candidate's interest in the area

## Document Verification

Original Documents to be produced at the time of interview for verification:

- Academic documents (mark sheets, certificates from class X onwards)
- Proof of previous research experience (if any)
- No objection certificate from the current employer (if employed)

## Coursework

Candidates admitted for the Ph.D programme are to complete a mandatory coursework of one semester (six months).

Candidates securing a minimum grade point of 6.00 in the coursework will be permitted to continue in the programme.

A candidate who is unable to complete the coursework during the allocated coursework session may be offered one more opportunity to do so during the subsequent coursework session conducted by

the University. Fresh admission formalities will have to be completed by candidates who fail to complete the coursework in two attempts.

## Registration

After successful completion of the coursework, a candidate shall prepare a detailed research proposal including the topic, scope of its study, tentative hypothesis and research methodology including sampling and design, where necessary and submit the same to the Director of Research through the Head of the Department for presentation and approval. After the approval of the research proposal, the candidate shall apply to the University for formal registration in the prescribed proforma. A candidate must complete his/her formal registration for Ph. D. programme within 18 months from the date of admission.

## Research Publication

The research scholar should have at least two research publications co-authored by the supervisor in UGC recognized journals with affiliation to Assam Don Bosco University. A research paper jointly published by two research scholars may be given equal weightage to both with justification about their contribution by the supervisor counter signed by the Head of the Department.

## Preparation of Thesis

The doctoral candidate will be required to prepare a thesis which will contain his/her research findings. The thesis should be a piece of research-work characterized either by the discovery of new facts or by fresh interpretation of facts or theories. In either case it should evince the candidate's capacity for critical examination of ideas, original thinking and judgment. It should also be satisfactory as far as its literary presentation is concerned.

## Submission of Thesis

On completion of the study the scholar prepares a draft thesis in accordance with the Ph. D. thesis format of Assam Don Bosco University and submit it to the Director of Research through the Supervisor and Head of Department for conducting a pre-submission seminar. After the successful presentation, the candidate submits the thesis for plagiarism check and subsequently submits his/her thesis for final examination..

- The candidate should have pursued research at the University for not less than two years from the date of registration for the Ph.D programme, before he/she is eligible to submit the thesis.
- The candidate is expected to submit his/her thesis within five years of the date of registration.



- At the time of thesis submission, if the second research publication is in press, a proof of acceptance must be submitted, prior to submission of thesis.
- The University will keep revising the norms for award of Ph D Degree, from time to time, in line with UGC guidelines and developments worldwide. The scholar must comply with the standards, procedures, requirements and norms in place for award of Ph D Degree at the time of submission of his/her thesis.

The Ph.D Degree will be awarded to the candidate based on the evaluation of the thesis by designated examiners and a Viva-Voce examination.

## FEE STRUCTURE

| Fee Type               | Students from India   | SAARC    | Other Asian/<br>African Countries | Other Countries |
|------------------------|---|----------|-----------------------------------|-----------------|
| Admission Fee          | INR 18,000  | USD 400  | USD 450                           | USD 550         |
| Caution Deposit        | INR 10,000  | USD 250  | USD 300                           | USD 350         |
| Semester Fee           |   |          |                                   |                 |
| Humanities             | INR 50,000  | USD 1000 | USD 1200                          | USD 1400        |
| Science and Technology | INR 60,000  | USD 1150 | USD 1350                          | USD 1600        |
| Registration Fee       | INR 1000  | USD 75   | USD 100                           | USD 150         |
| Thesis Examination Fee | as notified by the University - payable at the time of submission of thesis |          |                                   |                 |

Notes:

- Semester Fees are to be paid by 15 April and 15 October of each year.
- Fees once paid are not refundable.
- These Fees are prospective in effect, and the existing candidates will continue to pay the Fee prevalent at the time of their admission.
- Caution Deposit will be returned only on successful completion of the PhD.
- Any case by case permission granted for extension of time allotted for completing PhD will require payment of semester fees prevalent at the time of extension and not the semester fees at the time of joining the programme.
- Incentive for faculty members of Assam Don Bosco University - Rs. 10000.00 seed money per year.

## IMPORTANT DATES

- ▶ Last date for application online: 31 January 2025
- ▶ Entrance Test and Interview (tentative): 17 - 22 February 2025
- ▶ Commencement of Coursework (tentative): 21 April 2025

Exact dates for Entrance Test and Interviews and commencement of Coursework will be announced on our website.

## FURTHER INFORMATION

For further information, please contact

Director of Research: +91 91270 51222

Web: [www.dbuniversity.ac.in](http://www.dbuniversity.ac.in)

e-mails: [director.research@dbuniversity.ac.in](mailto:director.research@dbuniversity.ac.in)

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