



ASSAM  
DON BOSCO  
UNIVERSITY

*Carpe Diem*

# DOCTORAL PROGRAMMES 2023

“

*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...*



9476 690 950 / 9435 545 754



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

# 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

## 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
- Metabolomics and fermentation technology for aromatic plants
- Medicinal Plants and Bioinformatics
- Nano-biotechnology

## Botany

- Plant Biotechnology (Plant tissue culture)
- Molecular Biology & Genetic Engineering
- Plant Ecology & Biodiversity Conservation
- Plant Microbiology and Molecular Biology
- Plant Systematics
- Plant Taxonomy
- Plant Physiology and Biochemistry
- Applied plant biology

## Chemistry

- Biophysical Chemistry of Proteins
- Heterocyclic and sustainable Chemistry
- Weak interactions, Catalyst design
- Catalysis, Adsorption and Environmental Chemistry
- Organic synthesis, Catalysis, C-H activation
- Nano-materials, Biosensor
- 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

## 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
- Remote Sensing
- Environmental Engineering

## Commerce

- Finance and Accounting
- Banking and Finance
- Entrepreneurship
- Investment and Portfolio Management
- Finance and Management

## 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
- 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

## Computer Applications

- Artificial Intelligence
- Bio-inspired computation
- Computer Vision
- Graph Theory
- Image processing
- Machine learning
- Network security
- IoT related research in Agriculture
- Data Science
- Theoretical Computation
- Speech Processing,
- Medical Image Processing, Web service,
- Edge Computing,
- Service Oriented Computing,
- Software As A Service (SaaS)

## 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

## 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

## Electrical and Electronics Engineering

- Power Systems, Embedded Systems
- Optoelectronics
- Microwave Remote Sensing
- Renewable Energy
- Microwave Sensors
- Renewable Energy
- Disaster Forecasting
- Generation Prediction
- Solar Photovoltaic Systems
- Grid Integration of Renewable Energy

## 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

## English

- Linguistic
- Indian English literature
- 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 Indian Literature

## Mechanical Engineering

- Hydrodynamics and related areas
- Product Design
- Industrial Design
- Bio Printing and 3D Printing
- Design Management
- Design Thinking
- UX / UI
- System design for Sustainability

## Management

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

## 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

## Mathematics

- Number Theory
- Graph Theory and NP-complete Problems
- Commutative Algebra
- Convex Optimization
- Data Mining and Analysis
- Fluid Dynamics, Plasma Dynamics
- Fuzzy Stochastic Approaches, Fuzzy Set Theory and soft Computing
- Mathematical Education and Modeling
- Matrix Differential Equations and Trigonometry
- Functional Analysis
- Topology
- Chaos Theory and Dynamical System
- Optimization
- Cryptography
- Function Spaces
- Integral Theory, Measure Theory, Differential equations

## 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

## 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

## 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

- Pharmaceutical Science

## Physics

- Astrophysics
- Condensed Matter Physics
- Nanophysics
- Neutrino Physics
- Physics of Microscopic Biological Structures
- Plasma Physics
- Superfluidity and Related Aspects
- Theoretical Physics, High energy Physics

## 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

## Public Administration

- E-Governance, E-Government, Public Policy, Local Government and Decentralisation
- Development Administration, Accountability, Participatory Governance, ICT Intervention
- Traditional Administration, Customary Laws, Socio-Cultural Studies
- Ecology and Environmental 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)

## Zoology

- Herpetofauna
- Fish and Fisheries
- Human-Animal Conflict
- Aquatic fauna
- Entomology
- Cell and Molecular Biology
- Medical Biotechnology
- Toxicity Studies
- Medicinal Plants
- Reproductive Biology

# 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.

**NOTE: Non-paid application will not be processed and shortlisted for entrance test/interview.**

5. Appear for DBU-ART (Don Bosco University 'Aptitude for Research' Test) and/or Personal Interview. All candidates will be required to attend a personal interview. The dates for the "Aptitude for Research" Test and the interview will be announced on our website.
6. Complete the admission process before notified date.

## Written Test

Don Bosco University 'Aptitude for Research' Test (DBU-ART) will test the aptitude of the candidates in the following areas:

- English Comprehension
- Logical and Analytical Ability
- Awareness of research in the chosen area of study

The written test is not mandatory for a person who

1. has been awarded a fellowship on the basis of a national level examination recognised by UGC
2. has completed at least one year of research in a research laboratory/university/institute of repute
3. has specialized knowledge in the proposed field of research and at least seven years experience of teaching and administration/management after Master Degree
4. is a teacher of this University

## 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

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

## Original Documents to be produced at the time of interview (for verification)

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

## Course Work

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

Only candidates securing a minimum grade point of 6.00 in the course work will be permitted to continue in the programme.

A candidate who is unable to complete the coursework during the allocated course work session may be offered one more opportunity to do so during the subsequent course work session conducted by the University. Fresh admission formalities will have to be completed by candidates who fail to complete the course work in two subsequent attempts.

## Registration

After successful completion of course work a candidate shall apply to the University for formal registration in the prescribed proforma. The application shall be accompanied by a detailed research proposal including the topic, scope of its study, tentative hypothesis and research methodology including sampling and design, where necessary. The candidate may also be required to make a presentation of the research proposal. The maximum permissible period between the date of admission and the date of formal registration for Ph.D programme is 18 months.

## 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

When the Supervisor is of the opinion that the thesis is in the final stage of completion, the scholar will be required to give a pre-submission seminar on his/her research findings. After the successful presentation of the pre-submission seminar, the candidate may submit the thesis.

- 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.
- The candidate shall be required to publish at least one research paper in a referred journal before the submission of the thesis and produce evidence for the same in the form of acceptance letter or the reprint at the time of submission of the 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/ 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 2023
- ▶ Entrance Test and Interview (tentative): 20 - 24 February 2023
- ▶ Commencement of Coursework (tentative): 24 April 2023

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)

[admissions@dbuniversity.ac.in](mailto:admissions@dbuniversity.ac.in)

## ASSAM DON BOSCO UNIVERSITY

Tapesia Gardens, Kamarkuchi Village, Sonapur - 782 402  
Ph: 09476 690 950 / 8011 403 982  
[contact@dbuniversity.ac.in](mailto:contact@dbuniversity.ac.in)  
[admissions@dbuniversity.ac.in](mailto:admissions@dbuniversity.ac.in)  
[www.dbuniversity.ac.in](http://www.dbuniversity.ac.in)

Airport Road, Azara, Guwahati - 781 017  
Ph: 09435 545 754 / 9435709585  
[contact@dbuniversity.ac.in](mailto:contact@dbuniversity.ac.in)  
[admissions@dbuniversity.ac.in](mailto:admissions@dbuniversity.ac.in)  
[www.dbuniversity.ac.in](http://www.dbuniversity.ac.in)