



**POLICY GUIDELINES
FOR
RESEARCH COLLABORATION**
(as approved in the 11th Academic Council dated 16th September 2022)

**BODOLAND UNIVERSITY
RANGALIKHATA, DEBORGAON
KOKRAJHAR-783370**

Policy Guidelines for Research Collaboration

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Introduction

Bodoland University aims to achieve an excellent in-house and extension research environment through judicious combination of teaching and research. The University encourages innovation and technological development to all its faculties and students through a number of research promotional activities, schemes and encourages faculties for collaborative research in areas of research relevant to the area and the nation as a whole. It has plans to cultivate academic and research collaborations with national and international universities, government agencies and industries cater to the immediate needs of society and the industry. The University also remains committed to long-term research as the foundation for future development.

The Need for Collaboration

Collaboration with various university/ institutions / organizations/ laboratory provide opportunities for mutual enhancement and upgradation of ideas, infrastructure and overall improve the academic and research environment in both the organizations. This shall also provide opportunities for development of human resource by helping the faculties and students pursue high-end research work in their fields.

Objectives:

1. To motivate and encourage faculty to pursue research projects in science, arts and humanities through sharing ideas and infrastructure for mutual upgradation in academics benefitting the host institution in the long run.
2. To encourage, guide and motivate faculties to procure research funds from various national and international funding agencies.
3. To enhance the research culture by organizing discussions, meetings, brainstorming sessions, conferences, workshops, seminars and symposia with eminent researchers and resource persons as experts.
4. To set up the Incubation Centres, research centres and start-ups in collaboration with various stakeholders.
5. To adopt Collaborative Research with premier institutes in India like the IISc, IIT, etc and also with relevant R&D industries.
6. To mentor research-based start-ups and industry projects.
7. To identify key areas and themes where the university can have collaboration with other institutes/universities for research and innovation.

8. To produce good publications/patents/products of high impact.
9. To produce skilled manpower for various start-ups and employers (industries/pharmaceutical companies/govt./private companies etc.)

Research Collaboration Guidelines

This policy guidelines have been formulated to be followed by the faculty and researchers of this university in proposing and implementing any research collaboration with national, international, private or government universities, industries or agencies. Any type of collaboration shall be initiated and implemented under the following guidelines.

1. All the collaborative research project in the University shall be monitored by a 'Research Collaboration Committee'(RCC) under the leadership of a chairman, duly appointed by the honorable VC to look into matters related with policy planning and guidelines for proposal, sanction and implementation of any collaboration by any faculty/researcher or employee of the university. The honorable VC shall be the final authority in case of any dispute arises and his/her decision shall be final.
2. This policy and guidelines may be applicable for both intra University Collaboration among different departments and also inter institutional collaborations.
3. The RCC encourages faculties for both intra and inter institutional collaboration for pursuing high quality research.
4. Any such collaboration would be implemented on mutually agreed terms and conditions.
5. The SOPs laid down by the RCC will be strictly maintained for smooth implementation of these projects.
6. Details regarding cost, timeline of activities, beneficiaries involved, human resources engaged and financial details of such projects should be submitted in time to the concerned authorities of the University.
7. Progress of such projects may be submitted to the University and/or other involved institutions every six months.
8. Any publication, patents, or finished products resulting from such projects should duly acknowledge the University. Terms and agreements laid down by the Bodoland University IPR cell may be followed as and when the case arises.
9. The RCC also encourages and appreciates inter institutional collaboration with external participants (local/state/national/international/government/non-government

institution/ universities/ industries/ NGOs/ agencies) for multi-disciplinary, trans-disciplinary and inter-disciplinary research collaborations to promote high end research through sharing of advanced research facilities and expertise of both partners.

10. Such interinstitutional projects may be initiated by signing MoU between the partners mentioning all terms and conditions. The MoU should be duly signed by the officials of both the parties.
11. The RCC shall monitor and review the collaborative work and it is mandatory to submit the progress report of the project every six months until the completion of the project. The RCC shall ensure that all the collaborators shall strictly follow the terms and conditions mentioned in the MoU and finish the project fulfilling all objectives within the sanctioned timeframe.
12. After successful completion of the project, all the project closure documents including detail completion report, Utilization certificate etc. and any other relevant documents shall be submitted to the concerned authority of the University with a copy to the RCC.
13. All records pertaining to the project shall be maintained in both soft and hard copies for five years after the completion of the project.
14. The guidelines may be revised by the RCC from time to time in accordance to the latest developments and norms applicable.

Role of Deans of Faculty/Schools

The University at present has 6 Faculties/schools, each headed by a Dean. The deans would be responsible for encouraging faculties of his/her respective faculty/school to pursue high end research in collaboration with premier national and international institutes.

Based on the expertise, infrastructure and resources at Bodoland University, the following areas have been identified for probable collaboration with BU and other institutions.

1. The university is situated at a location rich in biodiversity and natural resources. Research collaborations with institutes like CSIR NEST, IBSD in field of exploring bioresources for natural products like phytochemicals and phytonutrients may be undertaken.
2. Collaboration with ICAFR, institute for development of research in the field of fisheries, aquaculture and aquaponics.

3. In fields of Pharmacology, Parasitology and Bioinformatics, the Department of Zoology can have collaboration with Northeastern Hill University (NEHU). With rich instrumental and expertise available in the University, several collaborative works can be carried out with the University. Department of Zoology and Biochemistry is working on various works on Pharmacological aspects of medicinal plants. Moreover, the institution-wise collaboration will significantly enhance the research of both institutions. Our research scholars and PG students can avail the central facilities of the University.
4. Gauhati University, Cotton University, IASSTGuwahati, College of Veterinary Science Guwahati are some other institutions with which the department of Zoology, Bodoland University intends and can have collaborations in many areas like fisheries science, toxicology, wildlife science and pharmaceutical sciences which the department is actively pursuing.
5. CSIR-IIIM, Jammu: Indian Institute of Integrative Medicine is one of the most important CSIR institutes in India. Several kinds of research related to the medicinal properties of plants and animals are ongoing at the institute. With rich instrumental facilities in the institute, our research scholars can benefit from the collaboration between the two institutes.
6. In many directions, material science researchers from chemistry can collaborate with material science researchers from physics. Both are branches of science dealing with matter and energy.
7. Quantum physics provides the base from which the properties of chemical molecules arises. There are several areas such as understanding the atomic structure and Line spectra of elements, we use quantum mechanics. This subject is common to both physics and chemistry.
8. Quantum mechanical model of an atom helps us understand the concepts of atomic and molecular orbitals, bonding, hybridization, and in turn the chemistry of various elements and compounds and their relationship with atomic and molecular structure. Physics also deals with the same subject, quantum theory, though from a different approach, we just don't apply it to understand atomic structure mostly, we use it in many other fields such as understanding how matter came into existence, fundamental interactions of nature etc.
9. The physical properties of a chemical materials can be determined by applying the laws of physics, while the chemical properties of the same molecule can be

determined by applying laws of chemistry. So, in determining the physical and chemical properties of chemical compounds chemistry and physics researchers can collaborate with each other.

10. Again, the nanomaterials and supramolecular materials design by chemists can be used in designing conductors, semi-conductors and electrical switches. Nanomaterials can also be use in designing astrophysical instruments.
11. Typical inorganic elements, especially metals, are responsible for important biological functions, including cell signaling, metabolism, energy production, and the immune response. The introduction of inorganic probes of biological structure and function and the expanding role of metals in medicine constitute another major component at the interface between inorganic chemistry and zoology. The different animal cells can be studied by the instruments designing with chemical compounds. Various drugs can be delivered by porous materials to respective targets for treatment of diseases.
12. India is a agricultural country and it is very important to ensure that every crops get sufficient nutrients and minerals to grow. In the recent years with the development of material chemistry, many fertilizers have been designed to ensure the sufficient growth and development of crops and plants. With the collaboration with botany, chemists can design suitable fertilizer to ensure the growth and development of plants. Chemists can also design insecticides to inhibit the growth of insect that stop the growth of essential plants and crops. To study the plant tissues various chemical compounds can also be designed. The age of older plants can also be determined by using various chemical materials.
13. Many metal nanoparticles possess antimicrobial activities. The antimicrobial properties of the nanoparticles can be studied with the collaboration with biotechnology.
14. Porous materials can be design so that it can bind suitable drugs which can stops the growth of pathogens. Chemist can also design various materials which will be helpful in DNA designing. Nanomaterials can be used to treat damaged or death cells. In the development of new plant species, chemical materials can be used.
15. In quantum chemistry many difficult differential equations are arise, which can be solved with the collaboration with mathematics researchers. With the help of mathematician, by solving various complex equations, the binding energy, crystal field energy, activation energy of the chemical compounds can be determined. The

cation exchange capacity of mesoporous and microporous materials can be calculated with the collaboration with mathematics.

16. With NITs, IITs and IIITs for collaboration in the field of thrust areas in computer technology research and innovations with the Computer Science and technology department of the University.
17. The university has a well-established Technology Incubation Centre in mushroom culture. Collaboration with institutes in related fields for advanced research and resource sharing.
18. The region is the global centre of the rich culture and tradition of the Bodo tribal community. The university has established a Centre for Bodo studies to preserve this rich cultural heritage of the Bodos. The University is open for any institute or organisation enthusiastic to learn and study the rich culture of the Bodos and also to undertake collaborative research in the area.
19. The department of Physics, Bodoland University intends to have collaboration with the following institutions based on the possible facilities and expertise required for our research areas. Some of the research area that is going on in the department of Physics, BU are highlighted below and names of institutions/universities/industries/organizations for collaborative research activity.

Research Area	Department/Laboratory	Collaborator institutions/universities/industries/organizations
A. Condensed Matter Physics: (i) Material Science (ii) Nano Energy Materials (iii) Thin films B. Spectroscopy	Sophisticated Analytical Instrument Facility, Department of Physics, Department of Energy Engineering	NEHU, Shillong
	Sophisticated Analytical Instrument Center	IASST, Guwahati
	Material Science and Technology Division, Chemical Science and Technology Division	CSIR NEIST, Jorhat
	Central Instrument Facility, Department of Physics, Department of Energy	IIT Guwahati, Guwahati
	Sophisticated Analytical Instrumentation Center, Department of Physics, Department of Energy	Tezpur University, Tezpur
	Research Institute for Sustainable Energy	TCG Crest, Kolkata, West Bengal
	Department of Physics, Department of Chemistry	CIT, Kokrajhar

	Research Facilities	UGC DAE consortium institutes Indore, Kolkata, Mumbai, Kalpakam
	Department of Physics	NIT Nagaland, NIT Silchar
	Department of Physics	Dibrugarh University, Dibrugarh
	Department of Physics, Instrumentation & USIC Department	Gauhati University, Guwahati
	Department of Physics	Manipur University, Manipur
	Department of Physics, Central Instruments Facility, Centre for Nanotechnology	University of Hyderabad, Hyderabad
Plasma Physics	Plasma Laboratory	Centre for Plasma Physics, Sonapur, Guwahati
	Physical Science	IASST, Guwahati
	Plasma Laboratory	Institute for Plasma Research, Gandhinagar
	Department of Physics	IIT Delhi
	Department of Physics	Sikkim Central University
	Department of Physics	IIT Jammu, Jammu
Nuclear and High Energy Physics	Experimental High Energy Physics and Application Division	Variable Energy Cyclotron Center, Kolkata
	Department of Physics	Gauhati University, Guwahati
	School of Physical Science	NISER, Bhubaneswar
	Department of Physics	IIT, Indore
	Department of Physics	IIT, Bombay
	High Energy Nuclear & Particle Physics Group	SINP, Kolkata
	Experimental High Energy Physics Group	TIFR, Mumbai
	Department of Physics	Tezpur University, Tezpur
Department of Physical Science	BARC, Mumbai	