

DEPARTMENT OF BIOINFORMATICS

CENTRE FOR POST GRADUATE STUDIES

ORISSA UNIVERSITY OF AGRICULTURE & TECHNOLOGY

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ABOUT US

The Orissa University of Agriculture & Technology (Estd. 1962) is a multi-faculty technical university with an earned reputation of being a leader in teaching, research & extension. OUAT, nurtures the students to face impediments, meet challenges and varying needs of IT career in today's world along with the objective to disseminate advanced knowledge by providing instructions and research facilities. The Center for Post-Graduate studies forms the indispensable part of this university.

Bioinformatics is the application of computer science and information technology to the field of biology and medicine. Bioinformatics deals with algorithms, databases and information systems, web technologies, artificial intelligence and soft computing, information and computation theory, software engineering, data mining, image processing, modeling and simulation, signal processing, discrete mathematics, control and system theory, circuit theory, and statistics, for generating new knowledge of biology and medicine, and improving & discovering new models of computation. With this in view, the department of bioinformatics was started in the year 2002 with the student intake capacity of 32 per year. It offers full-time two year courses in computational and biological sciences leading to award of M.Sc.(Bioinformatics) degree. The students work on varied areas like Genomics (Structural, Functional & Comparative), Proteomics, Molecular Modeling & Drug designing, Genetic Algorithms, Data Mining, Development of Computational tools and software. They carry out research in IVth semester as part of their course curricula. The course curricula are designed as per the recommendation of ICAR, New Delhi to develop the professional skill for I.T, Biotech

& Pharmaceutical industries. The department is accredited by the Indian Council of Agriculture Research, New Delhi in the year 2007-08.

The department hosts modern technology, services and all the required facilities such as Class Rooms equipped with Audio Visual aids, Computer Laboratories, Experimental Laboratory, Sophisticated Computer Laboratory sponsored by DBT, New Delhi for carrying out the research, and a Library, etc.

FACULTY

The Department is organized and nicely maintained by experienced, well trained and dedicated faculty members.

<p>Mr. S. K. Pradhan Head of the Department <i>ksukantapradhan@gmail.com</i></p>	
<p>Area of Research: Comparative Genomics of different field crops, Computational Proteomics of Membrane bound proteins. Area of Teaching: Biostatistics, Biological Databases, Networking, Data Mining and its application in Bioinformatics. Work Experience: 4 years of Research & Development in Agriculture and 5 years of Teaching in Bioinformatics Seminar/ Workshop/ Training: 1(International); 5 (National); 3(Training cum Workshop) Publications: 4(Journals)</p>	

<p>Miss. S. Balabantray Assistant Professor <i>sucharita_bioinfo@yahoo.co.in</i></p>	
<p>Area of Teaching: Biochemistry, Immunology, Genetic Engineering, Proteomics, Computational & System Biology. Work Experience: 6 years of Teaching Seminar/ Workshop/ Training: 1(International); 5 (National); 1(Training cum Workshop)</p>	

Mr. S. N. Rath
Assistant Professor
snr_bioinfo@rediffmail.com



Area of Research: Computational Phylogenetics, Molecular Dynamics Simulation, In Silico Protein Structure Prediction, Protein-Protein Interaction Study, Quantitative Structure and Activity Relationship Study.

Area of Teaching: Mathematics for Bioinformatics, Programming Languages in Bioinformatics(C, Java, Bioperl), Concepts in Computing (Linux Operating system), Molecular Modeling and Drug Designing.

Work Experience: 1.5 years of Research & 4 years of Teaching

Seminar/ Workshop/ Training: 1(International); 5 (National); 3(Training cum Workshop)

Publications: 2 (Book Chapters); 3(Journals)

Miss. S. R. Martha
Assistant Professor
sushma.martha@gmail.com



Area of Research: Comparative and l Genomics, Genetic Algorithms, Computational Phylogenetics, Microarray Techniques

Area of Teaching: Molecular Biology, Comparative and Functional Genomics, Biomolecular Sequence Analysis, Introduction to Database System, Pharmacogenomics and IPR.

Work Experience: 1 year of Research & 4 years of Teaching

Seminar/ Workshop/ Training: 3(International); 4(National); 5(Training cum Workshop)

Publications: 2(Book Chapters); 3(Journals)

Mr. S. K. Das
Practical Teaching Associate
das.sujitkumar@gmail.com



Area of Research: Computational Proteomics, Comparative Genomics

Area of Teaching: Proteomics, Genomics, Computer Languages.

Work Experience: 1.5 years of Research & 4 years of Teaching

Seminar/ Workshop/ Training: 1(International); 3 (National); 2(Training cum Workshop)

Publications: 4(Seminar/Workshop)

Other Staffs of the Department are as follows:-

- Mrs. Sudipta Mohanty, Assistant Computer Operator.
- Mrs. Deepanjali Mohapatra, Junior Clerk cum DEO.
- Mr. Mahesh C. Patra , Research Associate, DBT Project.

ADMISSION

Orissa University of Agriculture & Technology is the 1st University in India introducing the two years PG (M.Sc.) program in Bioinformatics.

For admission into M.Sc. (Bioinformatics) a candidate must have passed

- (i) +2 Science from CHSE, Odisha or its equivalent with mathematics and /or Biology as one of the subjects
- (ii) B.Sc. (Hons.)/ B.Sc. (Ag.)/B.Sc.(Forestry)/ B.Sc.(Hort.)/ B.V.Sc. & AH/ B.Tech(Dairy Science/Technology) B.Tech.(Ag. Engg.)/ B.F.Sc/ B.C.S/ B.A.M.S/ MBBS/ B.Pharma/ BDS/ BIT/ BITM/ BHMS/B.Tech./ B.Sc.(Biotech) from any recognized University with at least 50% of marks in aggregate for General & 45% of marks in aggregate for SC/ST/PH candidates.

The **Intake capacity and Reservation** of seats are as follows:

Intake capacity: 32

Reservation of seats: 32 (SC-5, ST- 3, PH-1, DP/DPP-1, Unreserved-22).

NOTE: The seats reserved for SC and ST candidates falling vacant shall be filled up by the general candidates from the merit list.

How to apply?

Application forms for admission can be obtained from the SBI, OUAT Campus Branch by depositing requisite fees. Application forms may also be obtained through post or else downloaded from the internet. The detailed information regarding the admission will be available at our website before the admission period.

COURSES OFFERED

The Master's program in Bioinformatics is a vigorous 2 yrs course consisting of 4 semesters including theory, practical as well as research papers:

Semester I	Semester III
Biological Chemistry Statistics for Bioinformatics Basic Molecular Biology Mathematics for Bioinformatics Comparative & Functional Genomics Library & Information Services Intellectual Property & its Management in Agriculture Basic Concepts in Laboratory Techniques Basic Mathematics	Computational & System Biology Dynamic Web-Design Biological Databanks & Data Mining Molecular Modeling & Drug Design Pharmacogenomics & IPR Minor Research
Semester II	Semester IV
Concepts in Computing Programming Languages for Bioinformatics Genetics & Immunology Introduction to Database Systems Biomolecular Sequence Analysis Technical Writing & Communication Skills Disaster Management	Master's Seminar Master's Research

INFRASTRUCTURE

Department is well furnished with theory Classroom equipped with Audio Visual aids, State-of-the-art Computing facilities are available in the Computer labs with internet facilities. These are supported by the 32 desktop computers, three powerful servers. Laser Printers, Scanners and CD Writers. Software resources include MySQL, C, C++, VB.NET, JAVA, PERL, SAS etc with other developmental tools and packages.



The experimental laboratory of the department is equipped with sophisticated equipments, kits and chemicals required to meet the curriculum. The laboratory is also engaged in isolation of genomic DNA, r-DNA of plants, bacteria and other microbes.

The project on “Creation of Bioinformatics Infrastructure Facility (BIF) for the promotion of Biology Teaching through Bioinformatics (BTBI) scheme of BTIS net” was implemented on 3rd November, 2006 in the P.G Department of Bioinformatics, Orissa University of Agriculture & Technology, Bhubaneswar with 100% support from the Department of Biotechnology, Government of India, New Delhi.



A well furnished computer laboratory (DBT) with internet facility is established with two high end servers and one medium end server; ten desktops with needful software, one scanner, one HP Laser Jet 3055 printer, one HP DeskJet D2360 printer & one photo copier. **Discovery Studio 3.1** (DS Modeller & Protein Families-Homology Modelling modules) is purchased during the year 2010-11 to facilitate the research works.

The library of the department is resourced with 536 number of books comprising Bioinformatics, Molecular Biology, Biochemistry, Genomics, Proteomics, Computer Science, Statistics, Mathematics etc. The students can also avail the Central Library of the University which is the stock house of several updated books of different subjects with National and International Journals



RESEARCH

Major Research Activities of the department include

- Computational Evolutionary Biology Study
- Computational Comparative Genomics
- Genome Annotation and Gene function
- Computational Proteomics
- Structure Prediction and Protein-Protein Interaction Study

PLACEMENT

Congratulations to our students who has created an amicable track record of placements in reputed Universities and Companies from different strata. Many students of this department are pursuing Ph.D. and Post Doctorate programmes in renowned Universities in India and abroad, few of which are enlisted here:

- Max Planck Institute, West Germany
- California State University
- University of Tennessee Health Science Centre Memphis, USA
- Pondicherry University, Puducherry
- Anna University, Chennai
- IGIB, New Delhi.
- IASRI, Delhi
- IARI, New Delhi
- SGPGI, Lucknow
- Jaipur National University, Rajasthan
- BISR, Rajasthan
- ISI, Kolkata
- MGIMS, Wardha
- Assam Agriculture University, Assam
- IICT, Hyderabad
- IIIT, Hyderabad
- NEHU, Silong
- BITS, Goa
- North Orissa University, Baripada
- Orissa University of Agri.culture & Technology, Bhubaneswar
- CIFA, Bhubaneswar
- IMMT, Bhubaneswar

- BJB College, Bhubaneswar
- Berahmpur University
- BHMS, Jagatsingpur
- MIITS, Rayagarha
- GIST, Berhampur
- Allahabad Bank
- IDBI Bank
- Punjab National Bank

Students of this department are employed in R&D unit of various reputed national research institute, Biotech Companies, Software firms, Pharmaceutical Companies, etc:

- Appolosoftware, Hyderabad
- GVK Bioscience, Hyderabad
- Novartis India Pvt. Ltd., Hyderabad
- Accenture India Pvt. Ltd
- Paraxel India Pvt. Ltd., Hyderabad
- Sai Adventium, Pune
- Consortium Clinical Research Pvt Ltd. , Coimbatore
- Google, Hyderabad
- IBM, Bangalore
- Mahindra-Satyam, Hyderabad
- Computer Science Corporation, Chennai
- Synkrom Healthcare Pvt. Ltd, Chandigarh

List of few Bioinformatics companies in India providing placement opportunities are as follows:

Name	Location	Name	Location
HH Biotechnologies Pvt.Ltd	Agra, India	Liatris Biosciences	Cochin, India
Xcelris labs	Ahemdabad, India	BioMed Informatics	Hyderabad, India
Metahelix Life Sciences Pvt Ltd	Bangalore, India	BioAxis DNA Research Centre	Hyderabad, India
Strand Genomics	Bangalore, India	Biointelligence	Indore, India
Biobase Inc	Bangalore, India	Rishi Biotech	Mumbai, India
ADI Biosolution	Chandigarh, India	IBI Biosolutions Pvt. Ltd	Panchkula, India
Center for Bio Informatics Research Institute (CBRI)	Chennai, India	Rishi Biotech	Thane, India
Barat Bioinformatics Research Institute	Chennai, India	SooryaKiran Bioinformatics (P) Ltd	Trivandrum, India

EXTRA CURRICULAR

Traditional festive like Ganesh Puja, Saraswati Puja, etc. and National festivals like Independence day, Republic day are celebrated by the students of the college in very organized manner. The students also actively participate in different competitions and functions may it be a Play, Dance or song, Acting, Anchoring competition or may it be debate, quiz or rangoli competition or it may be any kind of sports Competition like running, long jump, high jump, discuss throw, tennis, carom board, etc.

ALUMNI NETWORK

Success of any institute lies on the success of the students or alumni members. So, we are proud to see our students climb up the ladder of success in their endeavors. Our alumni website can be visited at <http://www.bioalumnas.com/> which forms a small niche of young enthusiastic Bioinformaticians joined in network to communicate each other's success stories.

CONTACT US

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