Faculty Details proforma for DU Web-site

Title	Dr.	First Name	**RATUL**	Last Name	**BAISHYA**	Photograph
Designation		ASSISTANT PROFESSOR				
Address		Department of Botany University of Delhi Delhi-110007				
Phone No	Office	011-27667573				
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Web-Page		**www.du.ac.in** **www.botany.du.ac.in**				

Educational Qualifications

Degree	Institution	Year
Ph.D.	North Eastern Hill University- Shillong	2012
M.Phil. / M.Tech.		
PG	North Eastern Hill University- Shillong	2004
UG	North Eastern Hill University- Shillong	2002
Any other qualification	UGC-NET (JRF)	2004

Career Profile

Organisation / Institution	Designation	Duration	Role
Department of Botany, University of Delhi	Assistant Professor	Nov 2009 till date	Teaching and Research

Administrative Assignments

Member, Committee of Courses,
Member, Swachata Abhiyaan Committee
Member, Gender Sensitization committee
Member, Committee to prevent racial discrimination and harassment of students from North-Eastern Region of India.
Member, Furniture sub-committee
Member, UGC Journal Uploading Committee
Member, Project Implementation Group for DST-FIST-II
Member, M.Phil/Ph.D. Course reform committee
Member, Foreign Students' Registry
Member, Students' Lounge committee
Member, Internet restoration committee and others assigned by the Department.

Areas of Interest / Specialization

My research interest involves biodiversity conservation, ecology and ecosystem function, biomass and carbon sequestration research in different ecosystems, climate change effects, productivity, soil and plant nutrition.

Subjects Taught

M.Sc. Botany
M. Sc. II, C-VIII-Plant Ecology
BOT 202. Systematics, Evolution & Environmental Science
BOT 304. Principles of Ecology
BOT 306. Bioinformatics, Computational Biology and Biostatistics
BOT 405. Agricultural Ecology: Principles and Applications
M.Phil. course Paper - Population Biology (8A) and Ecological Adaptations (9A)
Ph.D. course work Group 3 (Methods of Field Biology)
M.Phil/Ph.D. course work (2018 onwards Revised). RM-2. Statistics for Biologists, EL-2. Community Ecology, EL-16. Population Ecology

Time table of the subjects taught during the current semester

S.No.	Subject	Days	Time	Classroom	
1	**BOT 202: Systematics, Evolution and Environmental Science**	**(i) Wednesday** (Theory & Practical) **(ii) Friday** (Theory & Practical) **(iii) Tuesday** (Extra Theory Class)	**Theory: 9:40 – 10:35** **Practical: 10:35 – 5:00** **Extra Theory Class 9:40 – 11:30**	**Theory: Room 37** **Practical: Lab. 22**	
2	**BOT 304: Principles of Ecology**	(i) Friday (Theory & Practical)	**Theory: 11:30 – 12:25** **Practical: 1:20 – 5:30**	**Theory: Room 37** **Practical: Lab. 22**	Click here to enter te
3	**BOT 306: Bioinformatics, Computational Biology & Biostatistics**	(i) Thursday (Theory & Practical)	**Theory: 1:20 – 2:15** **Practical: 9:40 – 12:25**	**Theory: Room 37** **Practical: Lab. 22**	Click here to enter te
4	**BOT 405: Agricultural Ecology – Principles and Applications**	(i) Monday (Theory & Practical)	**Theory: (9:40 – 10:35)** **Practical: 10:35 – 5:00**	**Theory: Room 207** **Practical: Lab. 22**	Click here to enter te
5	**M.Phil. /Ph.D. Course Work** **RM 2. Statistics for Biologists** **EL-2. Community Ecology** **EL-16. Population Ecology**	(i) **Monday** (Theory & Practical) (ii) **Tuesday** (Theory & Practical) (iii) **Thursday** (Theory & Practical)	**Theory: 10 am -1:00 pm** **Practical: 2:00 – 5:00**	**Theory: Committee room** **Practical: As per the location of equipments/ computer lab.**	
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Research Guidance

1. **Supervision of Doctoral Thesis (Under Progress)**
   - i. **Shikha Prasad (Regd. 2014)** is working on the "Effect of Climate Change on vital ecosystem processes and functions".
   - ii. **Urvashi Tomar (Regd. 2014)** is working on "Understanding the mechanism of soil carbon sequestration in the ridge forest ecosystem of Delhi NCT".
   - iii. **Siddhartha Kaushal (Regd. 2016)** is working "Quantification of total ecosystem level carbon sequestration potential of different forest ecosystem along an elevational gradient in Uttarakhand, Western Himalaya in different climate scenarios
   - iv. **Prachi (Regd. 2016**) is working on "To study the effect of Macronutrient amendments in ameliorating salt stress in few medicinal plants.
2. **Supervision of M.Phil. dissertation with tentative titles (Ongoing)**

   Ravi Kumar (2017-2018). Forest vegetation and biomass estimation in temperate and tropical forests using GIS and RS technology**.**
3. **Supervision of M.Phil. dissertation with titles (Completed)**

   Rhituporna Saikia (2018). Isolation, identification and characterization of phosphate solubilizing bacteria from different agricultural crop soils of Delhi.

   Rajan Rathore (2018). Carbon and nutrient dynamics in different agricultural crops of Delhi.

   Ekta (2014) Ecological study of the Delhi Ridge Forest Ecosystem.

   Aftab Hassan (2014) Soil carbon pool and CO2 efflux studies in the Delhi Ridge Forest Ecosystem.

Publications Profile

Saikia, R. and Baishya, R. 2018. Phosphate Solubilizing Bacteria in certain agricultural crop soils of Delhi. International Journal of Plant and Environment. Vol. 4, No. 1 (January, 2018): 70-75.

Saikia, R. and Baishya, R. 2018. Phosphate Solubilizing Bacteria isolated from crop soils of Delhi shows mineral phosphate solubilizing ability. (Accepted for publication as a book chapter in Book entitled *Plants for Commercial Values*, Write and Print Publications, New Delhi.)

Sharma, P and Baishya, R. 2018. Plant growth promoting bacteria as a potent tool in amelioration of salinity stress: A Review. (Accepted for publication as a book chapter in Book entitled *Plants for Commercial Values*, Write and Print Publications, New Delhi.)

Prasad, S and Baishya, R. 2017. Nitrogen Mineralization in Terrestrial Ecosystem. The Botanica 67: 61-66.

Kaushal, S and Baishya, R. 2017. Old-growth Forests as Carbon Reservoirs: A Review of Garhwal Himalayas. The Botanica 67: 97-105.

Sharma, P and Baishya, R. 2017. Phosphate Solubilizing Bacteria-Assisted Salinity Tolerance in Plants: A Review. The Botanica 67: 77-83

Tomar, U and Baishya, R. 2017. Land Use Changes and Soil Carbon Sequestration in Mitigation of Climate Change. The Botanica 67: 87-93.

Saikia, R and Baishya, R. 2017. Mechanisms and Genetics of Mineral and Organic Phosphate Solubilization by Phosphate Solubilizing Bacteria. The Botanica 67: 47-53.

Kathal,R., Chaudhary, V., Kumar,L., Puri, A., Baishya, R. and Uniyal, P.L. 2016. Pollution Status of Yamuna River in India : A national concern. *International Research Journal of Environmental Sciences* 5 (12): 1-6.

Hasan, A. & Baishya, R. (2016). An allometry-based approach for understanding the biomass and carbon distribution in Delhi ridge forest Ecosystem. *In: Biodiversity and Environmental Conservation* (Krishna Upadhaya ed.) pp.14-28.

Kathal,R., Chaudhary, V., Kumar,L., Puri, A., Baishya, R. and Uniyal, P.L. 2016. Pollution Status of Yamuna River in India : a national concern. *International Research Journal of Environmental Sciences* 5 (12): 1-6.

Sharma, D and Baishya, R. 2016: Plant Canopy Architecture and Models: A Review. Botanica 66: 42-52.

Baishya, R. & Barik, S.K. 2015. Ecosystem level carbon and net primary productivity of old-growth and regenerating humid tropical forest of North-Eastern India. *International Journal of Plant and Environment 1(1)* DOI: http://dx.doi.org/10.18811/ijpen.v1i1.7117

Baishya, R. (2015). REDD^{+} and its concerns in Indian Prospective. The *Botanica* 64 &65:15-16.

Baishya, R. and Barik, S.K. 2011. Estimation of tree biomass, carbon pool and net primary production of an old-growth *Pinus kesiya* Royle ex. Gordon forest in north-eastern India. *Annals of forest Science*. 68: 727-736.

Thapa, N., Upadhaya, K., Baishya, R. and Barik, S.K. 2011. Effect of Plantation on Plant Diversity and Soil Status of Tropical Forest Ecosystems in Meghalaya, Northeast India. *International Journal of Ecology and Environmental Sciences* 37 (1): 61-73.

Barik, S.K. Lakadong, N.J., Baishya, R., Chettri, A., Das, P. Kayang, H. and Marbaniang, D. 2009. A new record of *Monotropa hypopitys* L., a mycoheterotropic plant for India. *Journal of Bombay Natural History Society* 106(1): 127-129.

Baishya, R., Barik, S.K. and Upadhaya, K. 2009. Distribution pattern of aboveground biomass in natural

and plantation forests of humid tropics in northeast India. *Tropical Ecology* 50(2): 295-304.

Upadhaya, K., Barik, S.K., Adhikari, D., Baishya, R. and Lakadong, N.J. 2009. Regeneration ecology and population status of a critically endangered and endemic tree species (*Ilex khasiana* Purk.) in north-eastern India. *Journal of Forestry Research* 20(3): 223-228.

Khar Lyngdoh, E. and Baishya, R. 2009. People's perception on climate change: A case study from Meghalaya *In:* Reflections of Climate Change Leaders from the Himalayas. Organized by British High Commission-New Delhi and LEAD India, pp. 115-136.

Publications in the Last one year

Saikia, R. and Baishya, R. 2018. Phosphate Solubilizing Bacteria in certain agricultural crop soils of Delhi. International Journal of Plant and Environment. Vol. 4, No. 1 (January, 2018): 70-75.

Saikia, R. and Baishya, R. 2018. Phosphate Solubilizing Bacteria isolated from crop soils of Delhi shows mineral phosphate solubilizing ability. (Accepted for publication as a book chapter in Book entitled *Plants for Commercial Values*, Write and Print Publications, New Delhi.)

Sharma, P and Baishya, R. 2018. Plant growth promoting bacteria as a potent tool in amelioration of salinity stress: A Review. (Accepted for publication as a book chapter in Book entitled *Plants for Commercial Values*, Write and Print Publications, New Delhi.)

Prasad, S and Baishya, R. 2017. Nitrogen Mineralization in Terrestrial Ecosystem. The Botanica 67: 61-66.

Kaushal, S and Baishya, R. 2017. Old-growth Forests as Carbon Reservoirs: A Review of Garhwal Himalayas. The Botanica 67: 97-105.

Sharma, P and Baishya, R. 2017. Phosphate Solubilizing Bacteria-Assisted Salinity Tolerance in Plants: A Review. The Botanica 67: 77-83

Tomar, U and Baishya, R. 2017. Land Use Changes and Soil Carbon Sequestration in Mitigation of Climate Change. The Botanica 67: 87-93.

Saikia, R and Baishya, R. 2017. Mechanisms and Genetics of Mineral and Organic Phosphate Solubilization by Phosphate Solubilizing Bacteria. The Botanica 67: 47-53.

Conference Organization/ Presentations (in the last three years)

- Saikia, R. and Baishya, R. 2017. Characterization of Phosphate Solubilizing Bacteria (PSB) isolated from agricultural crop soils of floodplains of Yamuna, Delhi. 86th Conference of Society of Biological Chemists. Emerging Discoveries in Health and Agricultural Sciences, School of Life Science, JNU during 16th -19th November, 2017
- Saikia, R. and Baishya, R. 2017. Use of Phosphate Solubilizing Bacteria as a potent biofertilizer in agriculture. XXVII Annual conference of Indian Association for Angiosperm Taxonomy &

International Symposium on “plant systematics: priorities and challenges”, held in Department of Botany, University of Delhi during 10-12 November, 2017.

- Tomar, U. and Baishya, R. 2017. Seasonal Dynamics of Soil Respiration and its Dependence on Temperature and Moisture in Semi-Arid Forest Ecosystem of Delhi, NCT. XXVII Annual conference of Indian Association for Angiosperm Taxonomy & International Symposium on “plant systematics: priorities and challenges”, held in Department of Botany, University of Delhi during 10-12 November, 2017.
- Prasad, S. and Baishya, R. 2017. Impact of climatic factors on soil nitrogen mineralization rates across native and non-native tree species of Delhi-ridge. XXVII Annual conference of Indian Association for Angiosperm Taxonomy & International Symposium on “plant systematics: priorities and challenges”, held in Department of Botany, University of Delhi during 10-12 November, 2017.
- Tomar, U. and Baishya, R. 2016. Effect of different moisture regimes on soil carbon pool in semi-arid ridges of Delhi, NCT. *Young Ecologist Talk and Interact (YETI.* Amity University Campus, Sec-125, Noida, U.P-201301 held on 19th January, 2016.
- Prasad, S. and Baishya, R. 2016. Seasonal variation in nitrogen mineralization under two tree species of semi-arid region of North-India. *Young Ecologist Talk and Interact (YETI.* Amity University Campus, Sec-125, Noida, U.P-201301 held on 19th January, 2016.
- Tomar, U. and Baishya, R. 2016. Effect of different moisture regimes on the pool size of soil carbon and microbial biomass carbon in semi-arid ridges of Delhi. Society for Plant Research (VEGETOS) and Department of Botany, University of Delhi held in Department of Botany, University of Delhi, 5 – 7th February, 2016.
- Prasad, S. and Baishya, R. 2016. Effect of native and non-native tree species on vital ecosystem functions and processes under semi-arid region of North-India. Society for Plant Research (VEGETOS) and Department of Botany, University of Delhi held in Department of Botany, University of Delhi, 5 – 7th February, 2016.
- Hassan A. and Baishya R. 2014. The dynamics of soil organic carbon (SOC) pool with land-use change in Delhi ridge forest ecosystem. *National conference on random waste disposal: Socioeconomic impacts and concerns*. 12th January, 2014. Mohammad Ali Jauhar University, Rampur – 244901, Uttar Pradesh.

Research Projects (Major Grants/Research Collaboration)
1. Diversity and performance of key forest tree species and bryophytes in gap and non-gap areas along an altitudinal gradient in Uttarakhand (2018-2021) (Ongoing). Funding Agency DST-SERB, Co-Principal Investigator. **2.** Quantifying the total ecosystem level carbon sequestration potential of different forest ecosystem along an elevational gradient in Uttarakhand, Western Himalaya in different climate scenarios. (2017-2021) (Ongoing). Funding Agency DST-SERB, Principal Investigator. **3.** Dynamics of Soil Microbial Communities in Response to Projected Changing Temperatures due to Climate Change and Influence of Plants in Various Agro-climatic Regions" DU-DST-PURSE Grant 2nd Phase. 2014-2018 (Ongoing), Co-P.I. ***4.*** Soil carbon sequestration in the Ridge forest Ecosystem of Delhi NCT (Nov. 2013- Oct. 2016), Funding Agency DST-SERB. (Completed), Principal Investigator.
Awards and Distinctions
University Grant Commission National Eligibility Test (NET-JRF) 2004-2007 University Grant Commission National Eligibility Test (NET-SRF) 2007-2009 DST-Young Scientist 2013
Association With Professional Bodies
Life member of Delhi University Botanical Society (DUBS), Delhi, India
Other Activities