



Department of Botany

Bhaskaracharya College of Applied Sciences
(University of Delhi)
Sec -2, Phase - 1, Dwarka, New Delhi -110075

The Department traces its origin back to 1995 where it supported the requirement of the Biology Department. It elevated itself to offer B.Sc. (Hons.) Botany since the year 2017. The emphasis on UG program at present is to give a comprehensive professional training in the field of Plant biology and Plant biotechnology. Botany is the branch of biology which deals with the scientific study of plants. It is one of the preferred choices of study among the science students in India. Botany focuses on an extensive plant study ranging from their structures, growth, uses, and processes of plant life- their evolution, ageing, decaying and death. The plants which range from the smallest bacterium to the largest Sequoia tree, provide food, clothing and shelter to mankind. Considering the current scenario, various factors like urbanisation, population explosion, pollution etc. are affecting the flora worldwide. Therefore, apart from in-depth study of flora, a botanist is needed to explore all the possible ways to deal with issues related to agricultural, horticulture and environment. Thus, career in Botany can be highly rewarding for those, who are allured with the aesthetic beauty of nature and flora.

Botany has become such an extensive research enterprise that now it is not only restricted to single discipline, but it encompasses a number of clustered sub-disciplines. The multi-disciplinary initiative is significant for several reasons. First of all, it represents the culmination of a long-cherished aspiration of the Institute. Equally significant is its historical moment, namely, the beginning of the new century that is aptly called the post-genome era. Botany is currently experiencing a golden age of research-driven discoveries. The application of plant sciences improves the yield and supply of medicines, food, fibres, building materials and other plant products. The knowledge of plant sciences is essential for development and management of forests, parks, waste lands, sea wealth etc.

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Careers in botany are vast and variable because of its interdisciplinary nature. After completing the course, one can be a part of any reputed organization as an academia, scientist, plant explorer, conservationist, ecologist, environment consultant, horticulturist, plant biochemist, molecular biologist, taxonomist, plant pathologist and farming consultant, sericulturist; Marine/freshwater biologist; forest service employee; Environmental impact specialist; Greenhouse specialist; Agricultural Research Service; Botanical gardens and arboretums such as the National Arboretum; Lumber and paper industries; Bio-technical regulatory agencies; National Park Service Employee; National forestry or conservation expert; Science columnist; Researcher in food based plants, Ayurveda; Entrepreneurs/startups in above mentioned fields, R&D; Forensic science; business and industry. One can be a part of more recent and interesting fields like space travel agriculture, artificial environments, hydroponics and various other interesting areas of research. The demand for botanists is increasing in areas such as medical plant research, plant diseases, plant breeding and plant genetics, molecular biology, plant biotechnology etc. Some botanists work in administration and also in marketing for biological supply in and from companies viz., seed companies, biotechnology firms and pharmaceutical manufacturers.

Vision of the Department is to think big and achieve the same with the vision of the faculty and hard work of the students, as told by his highness Dr. A.P.J. Abdul Kalam, the former President of India- "To explore and not to exploit the plant world". The objectives of the Department are to bring forth disciplined, competent, spiritually and socially committed, morally upright students through quality education and research. The department trains the students to face challenges with best teaching methods and strives to shape and mould students as worthy citizens, to build self-confidence in the students, to infuse ethics, values and responsibilities in them, to provide academic excellence, to develop an exemplary Department in the University and Country & to make the Department a centre of excellence in thrust areas of Biological Science. Additional inputs are inserted in curriculum with student centric thought provoking teaching aids with modern gadgets, modular course content,

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intensive field work for collection of local flora which help them to know about the area and familiarize them with distribution and other patterns of flora.

The Department of Botany has well equipped instruments and infrastructure for this course. The laboratories are designed in such a manner that it is well-illuminated and aerated with projector facility, latest instruments particularly PCR machine, Binocular microscope, B.O.D. incubator, PC-based UV-Vis-Spectrophotometer, Autoclave, Laminar flow, Refrigerated centrifuge, Growth chamber, pH-meter, Electronic balance, Vortex shaker, Electrophoresis and UV trans-illuminator, Ice Flaking machine, Refrigerated Centrifuge, Water purification system etc. The Department has a well maintained tissue culture room facility.

About the Department

The department has a botanical society “PHYTOMICS” which aims to organize lectures, seminars, workshops, conferences to provide information on up-to-date development in the field of science and technology. Under the botanical society, students were given exposure to visit various research institutions (NBPGR, NIPGR, IARI, NISCAIR and JNU etc.) to enlighten them about the current instrumentation techniques used in biological sciences as a part of their curriculum and widened their perspective and thoughts on the present scenarios in biological research. Field exposure to Aravalli Biodiversity Park was also conducted to generate awareness among students about the importance of their surrounding nature, environment and proper functioning of the society as a whole. Students were allowed to participate in National conferences/seminars/symposia/workshops/invited lectures organized in and out of the college to update their knowledge in the subject. This year the botanical society “PHYTOMICS” organized the annual departmental fest “**BLOSSOM-II**” on February 18, 2020. Two eminent intellectuals, Prof. K.S. Rao (Head of the Department) and Prof. Arun Jagannath from Department of Botany, University of Delhi delivered an interactive and informative talk on climate change and plant science without boundaries respectively during the inauguration of annual departmental fest. The lectures were followed by various events viz. poster making, science quiz, test your senses, slogan writing, plantastic, BCAS got talent and many fun activities. The annual departmental fest provides intra and inter-college interactions among students and helps students to engage in various extra-curricular activities that give them a platform to show-case their talents.

VARIOUS ACTIVITIES ORGANIZED BY THE DEPARTMENT IN 2019-20

Visit to Rashtrapati Bhawan and Mughal Garden

- Faculties and students visited to Rashtrapati Bhawan and Mughal Garden on March 06, 2020. The trip started with a tour of the Rashtrapati Bhawan and proceeded towards Mughal Garden, which is a historical garden within the Rashtrapati Bhawan Complex and is well known for its wide variety of flowers. Major attractions of the garden remain to be the Rose Garden, Bonsai Garden and Herbal Garden. The Rose Garden grows more than hundred different varieties of roses. The trip ended with the visit to the Herbal Garden where different species of medicinal plants are grown.

National Science Day celebration on 28 February 2020

- Faculties and students participated in an outreach program “**Aarohan: RCB Open Day**” on National Science Day organized by Regional Centre for Biotechnology on February 28, 2020. Ritu Kshatriya, a third year student of Botany Department, won **First Prize** in biotechnological innovations sketching competition.
- Faculties and students attended National Science Day Function held at VigyanBhavan on February 28, 2020 organized by Ministry of Science and Technology, where **The President of India** was the chief guest.
- Faculties and students attended a lecture series on “**A Search for Iconic Trees of India**” organized by Indian National Science Academy (INSA) as a part of National Science Day on February 26, 2020 held at India International Centre, Lodhi Road New Delhi.

Swachhata’s pledge ceremony

- Faculties and students took Swachhata’s pledge on January 16, 2020 at Department of Botany During Swachhata Pakhwada.

DBT International Summit

- Faculties and students participated in “**International Summit on Women in STEM- Visualizing the Future: New Skylines**” organized by Department of Biotechnology held at India Habitat Centre, Lodhi Road, Delhi on January 23-24, 2020.

Education Visit to various research Institute

- Faculty members organized an educational visit to **National Bureau of Plant Genetic Resources (NBPGR)** and **National Institute of Science Communication and Information Resources (NISCAIR)**, New Delhi on October 20, 2019. Students visited the museum of NBPGR and NISCAIR where they learned about various indigenous crops and forest plant species.
- An educational visit was organized to “**Advanced Instrumentation Research Facility**” (AIRF), Jawaharlal Nehru University (JNU) on September 24, 2019. Students acquired knowledge on various analytical techniques employed in plant sciences.

Field visit to Aravalli Biodiversity Park, New Delhi

- An educational visit was organized by faculty members to “**Aravalli Biodiversity Park**”, Vasant Kunj on October 24, 2019. The aim behind the trip was to bring students abreast with the natural environment, flora, fauna and to understand interactions and processes of the ecosystem.

International Ozone Day Celebration (Department of Environment, Government of NCT of Delhi)

- Students gave oral presentation on the theme “**32 Years and Healing**” on **International Ozone Day Celebration** held at Delhi Secretariat, Delhi organized by Department of Environment on September 16, 2019. Students also presented a play related to the theme.
- Department of Environment, Government of NCT of Delhi invited our students to present a play in an awareness workshop on “**River Yamuna**” held on October 4,

2019 at Delhi Secretariat. Students were facilitated with momentos and cash prize of **Rs.2000/-** for their outstanding performance.

Central Placement Cell (CPC) program

- A faculty and students participated in the Central Placement Cell (CPC) program, held at conference centre, University of Delhi (North Campus) on September 16, 2019. The meeting provided important information about the recruitment drive from various organizations and companies.

Workshop and hands-on-training on “Intellectual Property Rights

- One day Inter-college workshop and hands-on-training on “**Intellectual Property Rights**” was organized by The Botanical Society, PHYTOMICS on August 26, 2019. Two eminent speakers **Dr. Arun Kumar Maurya** and **Ms. Prity Khastgir** delivered an informative talk in their respective fields. Students learned the basic concepts of IPR, patents, copyrights, trademark, and protection of plant varieties, traditional knowledge and their claims.

Outstanding performance by the students

- **Khushboo Fulara**, a third year student, was awarded **Research Fellowship of Rs. 26,360** under the science academies project entitled “Validation of the expressions of genes showing up or down regulation in C_{fp300} zebra fish mutants obtained by Next Generation Sequencing” at Institute of Life Sciences, Bhubaneswar, Odisha from May-July, 2019.
- Riya Garain, a third year student, received **merit scholarship of Rs. 10,000** and **Rs. 15,000** from Indian Air Force Benevolent Association under Subroto Memorial Scholarship (SMS) scheme in 2019 and 2020 respectively.
- Ms. Shreevanee Sharma, a second year student has been awarded as “**Best Delegate**” in the United Nations Human Rights Council (UNHRC) committee at the Cogitate Model United Nations, Bilaspur on December 2019.

Admission Eligibility Criteria

Minimum requirements for the students who have passed the qualifying examinations and are seeking admission in Botany Department of Bhaskaracharya College of Applied Science, University of Delhi, is:

- ❖ For B.Sc. (Hons.) Botany, 55% or more marks in the aggregate of Physics, Chemistry, Biology/Biotechnology (PCB/PCBt) (Practical& Theory together) And **passing in one compulsory language i.e. English with 50% marks.**

Faculty Details

S.No	Name of Faculty	Qualifications	Specialization
1)	Dr. N. S. Abbas (Teacher-In-Charge)	Ph.D. (D.U.)	Plant Biotechnology
2)	Dr. Sujata Bhardwaj	Ph.D. (M.D.U.)	Ethnobotany and Ecology



Semester-wise distribution of Courses under CBCS (Revised)

SEMESTER I		SEMESTER II	
C1	Microbiology and Phycology	C3	Mycology and Phytopathology
C2	Biomolecules and Cell Biology	C4	Archegoniatae
AECC1	English/MIL Communication/Environmental Science	AECC2	English/MIL communication/Environmental Science

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GE1	Generic Elective	GE2	Generic Elective		
SEMESTER III		SEMESTER IV			
C5	Anatomy of Angiosperms	C8	Molecular Biology		
C6	Economic Botany	C9	Ecology		
C7	Genetics	C10	Plant Systematics		
SEC1	Skill-Enhancement Elective Course	SEC2	Skill-Enhancement Elective Course		
GE3	Generic Elective	GE4	Generic Elective		
SEMESTER V		SEMESTER VI			
C11	Reproductive Biology of Angiosperms	C13	Plant Metabolism		
C12	Plant Physiology	C14	Plant Biotechnology		
DSE1	Discipline Specific Elective	DSE3	Discipline Specific Elective		
DSE2	Discipline Specific Elective	DSE4	Discipline Specific Elective		
Abbreviations used for Course					
C	Core Course				
AECC	Ability Enhancement compulsory Course				
GE	Generic Elective course				
SEC	Skill Enhancement Elective Course				
DSE	Discipline Specific Elective course				
SEC: Skill-Enhancement Elective Courses <i>(any one paper per semester in semesters 3rd and 4th)</i>		<ol style="list-style-type: none"> 1. Ethnobotany 2. Intellectual Property Rights 3. Biofertilizers 4. Medicinal Botany 			
DSE: Discipline Specific Elective <i>(any two paper per semester in semesters 5th and 6th)</i>		<ol style="list-style-type: none"> 1. DSE-I Analytical Techniques in Plant Sciences 2. DSE-II Biostatistics 3. DSE-III Industrial and Environmental Microbiology 4. DSE-IV Bioinformatics 			
GE : Generic Electives <i>(any one paper per semester in semesters 1st to 4th.</i>		GE 1 : Biodiversity (Microbes, Algae, Fungi And Archegoniatae) (for 2020-21) GE-III: Environmental Biotechnology (For 2020-21)			
Category wise seat distribution					
Total Seats	UR	SC	ST	OBC	EWS
40	16	11	6	3	4

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