

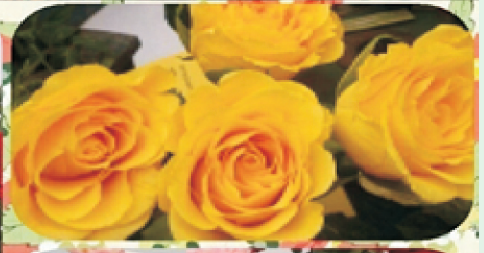
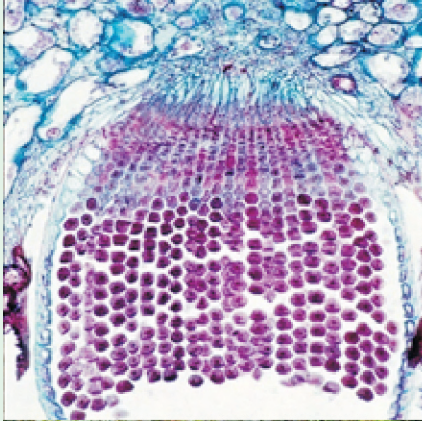
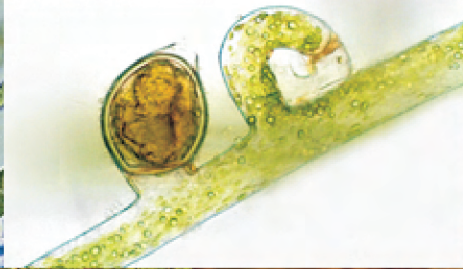
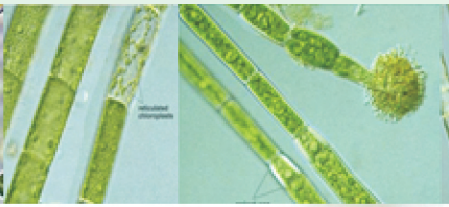
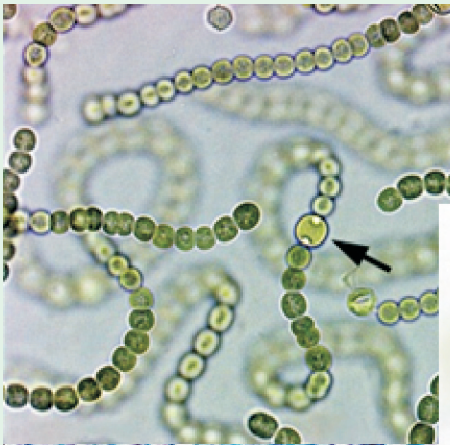


# DEPARTMENT OF BOTANY



MIRANDA HOUSE  
UNIVERSITY OF DELHI





DEPARTMENT OF BOTANY



## The Department



- The Department of Botany was established in 1948.
- Botany Honours course was transferred to the college in 1973.
- UG courses offered are B.Sc. (H) Botany and B.Sc. Life Sciences.
- For M.Sc. Botany the students are admitted to the college but taught in the Department of Botany, DU.
- The Add-on Certificate Course Bioinformatics and *in silico* Medicine is conducted in collaboration with the Department of Zoology.



# Profile



Name	Qualification	Designation	Specialization	Exp (yrs)	Research guidance
Dr. S. Moitra	Ph.D.	Associate Professor	Plant Tissue Culture	37	M.Phil.: 1, Ph.D.: 1
Dr. J. Subramanyan	M.Phil. Ph.D.	Associate Professor	Physiology of Reproduction in Seed Plants	25	
Dr. M. Bajaj	Ph.D.	Associate Professor	Reproductive Biology of Higher Plants	25	
Dr. S. Bahri	Ph.D.	Assistant Professor	Plant Tissue Culture	16	
Dr. R. Shakya	Ph.D.	Assistant Professor	Plant Reproductive Biology and Biochemistry	10	
Dr. E. Geetanjali	Ph.D.	Assistant Professor	Algae in Carbon Sequestration	03	
Dr. Deepali	Ph.D.	Assistant Professor	Microbiology and Phycology	08	Ph.D.: 1 <sup>[O]</sup>

• J. Subramanyan and S. Bahri received the **Australian Leadership Awards Fellowship (ALAF)**: Building Leadership Capacity in Undergraduate Science Teaching in India (host organization: University of Sydney), 2013.

• R. Shakya was awarded a Fellowship under the **Faculty Training Programme** for pursuing Masters in Systems and Synthetic Biology at the University of Edinburgh, Scotland, UK, 2012-13.

• A. Sehgal<sup>[R]</sup> received the **UGC Career Award**, 1993-96.

• M. Sethi<sup>[R]</sup> was a **Mombusho Fellow**, Japan Science Foundation, 1980-81.



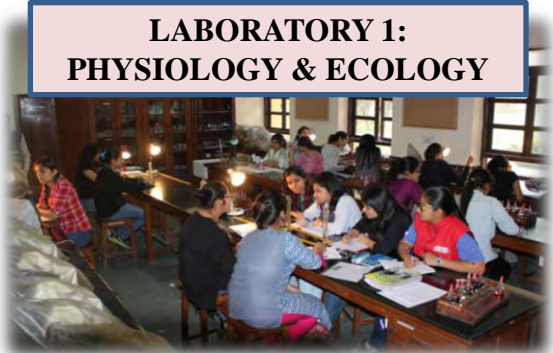
# Infrastructure

The Department has two faculty rooms, two laboratories for teaching purposes, and a museum. The museum houses the herbarium. The Department also has a well stacked library with over 800 books. We grow all the plants that we require for the practical classes in the Botanical Garden.

**THE DEPARTMENT**



**LABORATORY 1:  
PHYSIOLOGY & ECOLOGY**



**LABORATORY 2:  
PLANT DIVERSITY**



**MUSEUM**



**HERBARIUM**



**DEPARTMENTAL  
LIBRARY**



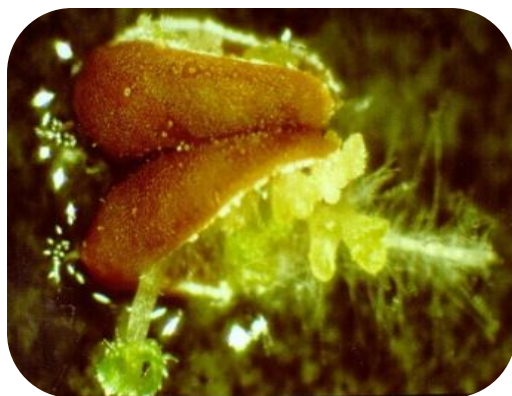
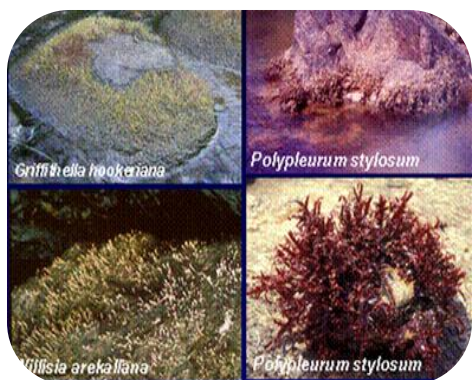
**BOTANICAL GARDEN**



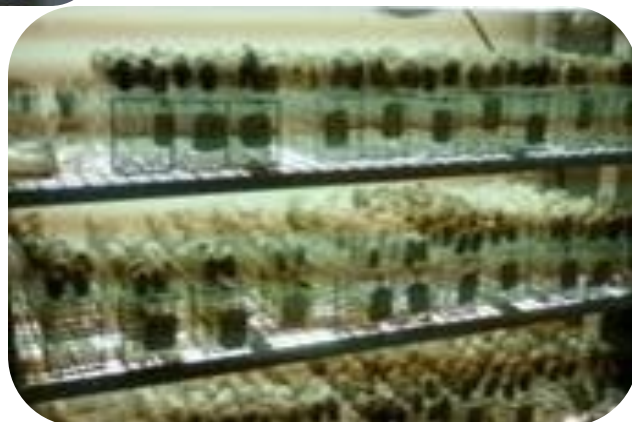
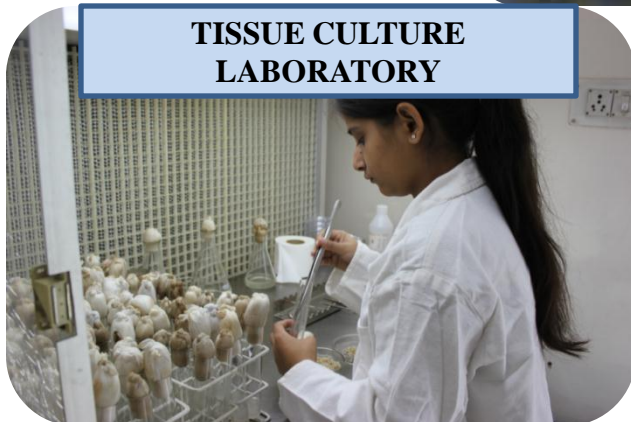


## Infrastructure—UG Research

Students conduct research in the tissue culture laboratory and the DSKC undergraduate research facility. The Podostemaceae, a unique angiosperm family, has been an important material for research. Projects on nanoparticles and phytoremediation have been conducted. Students also work on other subjects.



### TISSUE CULTURE LABORATORY



### DSKC UG RESEARCH FACILITY





## Departmental Activities



Antheia, the Botanical Society organizes lectures and the annual festival Koshika.

*Quisqualis* is our departmental annual magazine.

The Department also organizes the annual Manasi Ram Memorial lecture. So far, 18 lectures have been organized.





## Some of Our Speakers



Prof. Pradeep K. Burma (left) and Prof. C. R. Babu (right) delivering lectures for the Botanical Society.



Left: Prof. Jitendra P. Khurana delivering the 18<sup>th</sup> Manasi Ram Memorial Lecture; right: Prof. V. P. Singh at the IPR workshop for college teachers.



# NASI Award Lectures Organized

**On 04 November 2016**

**P. Sheel Memorial Award Lecture by**  
Dr. Shelly Praveen

**Title of Award Lecture:** Virus  
propagation: host fitness trade off and  
resistance development

**On 16 September 2014**

**Shri Ranjan Memorial Lecture by Prof.**  
Akhilesh K. Tyagi

**Title of Award Lecture:** Plant genomes  
for forward and reverse genetics

**Prof. B.K. Bachhawat Memorial Lecture**  
by Prof. Debi Sarkar

**Title of Award Lecture:** Gene therapy of  
jaundice using animal virus



**The National Academy of Sciences, India (NASI)**

and  
**Miranda House**

present

**P. SHEEL MEMORIAL AWARD LECTURE**

**Virus Propagation: Host Fitness Trade Off  
and Resistance Development**

by



**Laureate**

**Dr. Shelly Praveen**

Head, Division of Biochemistry  
Indian Agricultural Research Institute, New Delhi

**Presided by**



**Dr. Manju Sharma**

Padma Bhushan  
Former Secretary, Department of Biotechnology  
Past President, The National Academy of Sciences, India (NASI)



**Professor Ajoy K. Ghatak**

Chairman, NASI-Delhi Chapter  
Former Professor, IIT Delhi



**04 November 2016**

**11.30 am to 01.15 pm**

**Sanyukta Chaudhri Seminar Hall  
Miranda House, University of Delhi**



**National Academy of Sciences, India (NASI)**

and  
**Miranda House**

present

**NASI AWARD LECTURES**



**Title: Plant Genomes for Forward and Reverse Genetics**  
**Professor Akhilesh K Tyagi**

Director, National Institute of Plant Genome Research  
Laureate, National Bioscience Award and J.C. Bose National Fellow



**Title: Gene Therapy of Jaundice Using Animal Virus**  
**Professor Debi P Sarkar**

Department of Biochemistry, University of Delhi South Campus  
Laureate, Shanti Swarup Bhatnagar Award 1998

**Chaired by**



**Professor Vinod P Sharma**

Padma Bhushan  
Founding Director, National Institute of Malaria Research  
Meghnad Saha Distinguished Fellow NASI, IIT Delhi



**Dr. Manju Sharma**

Padma Bhushan  
Former Secretary, Department of Biotechnology  
Government of India



**16 September 2014**

**01.30 pm to 5.30 pm**

**Miranda House Auditorium**

Participants are requested to pre-register via email to [secretary@mirandahouse.ac.in](mailto:secretary@mirandahouse.ac.in)

## College Garden Committee

- All Botany teachers are a part of the Garden Committee of the college.
- The college participates in the Annual Delhi University Flower Show.
- Every year the college wins many cups. This year we were placed second at the 59<sup>th</sup> Annual Flower Show 2017 and won 3 cups, viz.

The  
Platinum  
Jubilee  
Cup

The  
Registrar's  
Cup

The  
Department  
of Zoology  
Cup





# Workshops and Courses for Students and Teachers

- Bridge Course on Basic Laboratory Techniques for I Year B.Sc. (Hons) Botany and B.Sc. Life Sciences students.
- Workshops on Molecular Biology and Tissue Culture for III Year B.Sc. (Hons) Botany students.
- Workshops conducted for students under DU Innovation Projects.
- Workshops for school and college teachers.
- INSPIRE Workshops for school students on The Cell: Life's Playground, Designing Life: Small Experiments, and DNA: Close Encounters.

	 <p><b>Miranda House</b>  <b>DBT Star College Project</b>  <b>From Symptom to Identification: Diagnosing</b>  <b>Viral Disease in Plants</b>  <b>Workshop for B.Sc. (H) Botany III Year</b>  <b>March 31- April 1, 2016</b>          by  <b>Prof. Sudeshna Mazumdar-Leighton, Department of Botany,</b>  <b>University of Delhi</b>          at          Department of Botany &amp; DSKC Life Sciences Laboratory,          Miranda House</p>  <p>Sponsored by          Department of Biotechnology, Ministry of Science and Technology</p> <p><b>Dr. Madhu Bajaj</b>      <b>Dr. Sushma Moitra</b>      <b>Dr. Pratibha Jolly</b>  <b>Dr. Remika Agrawal</b>      <b>Coordinator</b>      <b>Principal</b>  <b>Workshop Coordinators</b>      <b>DBT Star College Project</b>      <b>PI, DSKC</b></p>
 <p><b>Miranda House organizes</b>  <b>One Day Workshop on</b>  <b>Green Nanotechnology for Beginners</b>  <b>Under the Aegis of</b>  <b>DU Innovation Project 310</b></p> <p><b>Date :</b>      28 January, 2016</p> <p><b>Venue :</b>      Room No. 145,          Miranda House,          University of Delhi</p> <p><b>Time :</b>      9.00 a.m. to 5.00 p.m.</p>	  <p><b>MIRANDA HOUSE IN COLLABORATION WITH MHRD IPR CHAIR</b>  <b>UNIVERSITY OF DELHI</b></p> <p><b>Training the Trainers: IPR Workshop</b>          (UNDER THE AEGIS OF DBT STAR COLLEGE PROJECT &amp; MHRD IPR CHAIR)</p> <p><b>DATE: JANUARY 15<sup>TH</sup>, 2016 ( FRIDAY )</b>  <b>TIME: 9:30 AM TO 5.00 PM</b>  <b>VENUE: SEMINAR HALL, MIRANDA HOUSE</b></p>
<p><b>Chairperson</b>  <b>Dr. Pratibha Jolly</b>  <b>Principal, Miranda House</b></p> <p><b>Convener</b>  <b>Dr. Saloni Bahri</b>  <b>Department of Botany</b></p> <p><b>Coordinators</b>  <b>Dr. Kalawati Saini</b>  <b>Dr. Smriti Sharma Bhatia</b>  <b>Department of Chemistry</b></p>	<p><b>Registration Details</b>          Registration form available at  <a href="http://www.mirandahouse.ac.in">www.mirandahouse.ac.in</a></p> <p><b>No Registration Fee</b></p> <p>Last date: 27 January 2016</p> <p>Send your queries and          registration form to:  <a href="mailto:saloni3bahri@gmail.com">saloni3bahri@gmail.com</a></p> <p><b>Limited seats only</b></p>

## Educational Visits

The recent **local** educational visits have been to

- Sulabh International Social Service Organization on 28 September 2016
- Yamuna Biodiversity Park (YBP), on 28 October 2015
- *Sakura* (cherry blossom) Plantation Ceremony on 11 February 2016
- Orchid Exhibition on 07 February 2014

**Outstation** trips to

- Kulu-Manali, 31 October to 04 November 2016
- Mussoorie, Dehradun, Dhanaulti and Haridwar, 31 October to 03 November 2015

**FRI, DEHRADUN**



**SULABH**



**YBP**



**SAKURA PLANTATION CEREMONY**



**ORCHID EXHIBITION**





## Research Projects

- The Department has successfully completed nine projects. Of these seven are DU Innovation (interdisciplinary) projects, one is a UGC-funded project, and the last is the DBT Star College Project.
- The DBT Star College Project has been given further extension of 3 years. The Department has been granted the **Star Status** by the DBT.
- There are two ongoing Star Innovation projects. The titles are
  - ❖ Eureka! MyLab Developing Resources and Hands-on Science Activities and an Adaptation Accessible for Visually Impaired: Grant amount Rs 37.5 lakh.
  - ❖ Therapeutic potential of medicinal plants: culture, extraction, physicochemical characterization and testing their cytotoxic or immunostimulatory properties: Grant amount Rs 26.67 lakh.
- The Department has completed 19 summer projects under the D. S. Kothari Centre for Research and Innovation in Science Education, Miranda House.

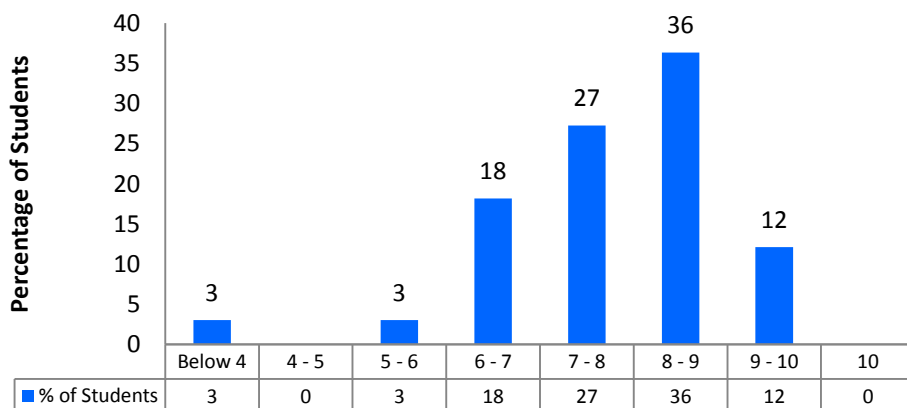


# Results

## B.Sc. (Hons) Botany

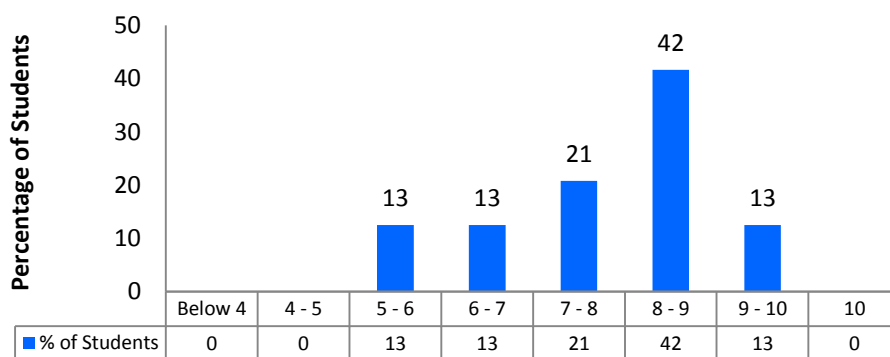
### Academic Performance Semester Exam November-December 2016

**BSc (H) Botany CBCS (I Yr I Sem)**



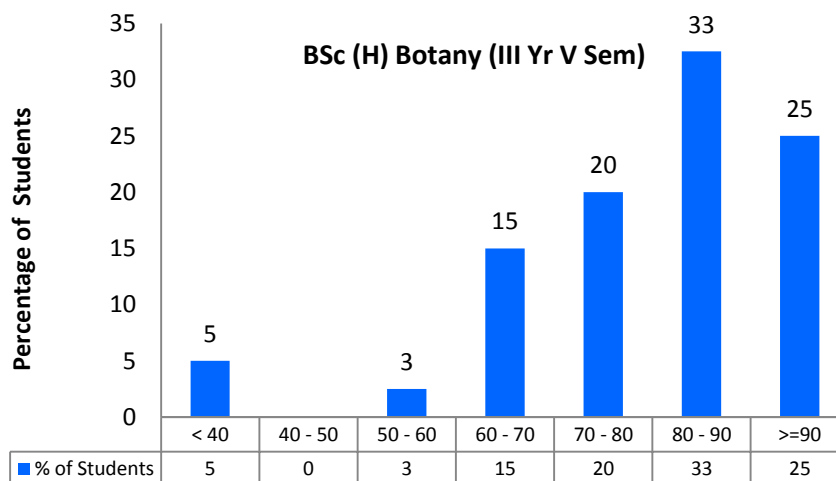
**SGPA**

**BSc (H) Botany CBCS (II Yr III Sem)**



**SGPA**

**BSc (H) Botany (III Yr V Sem)**



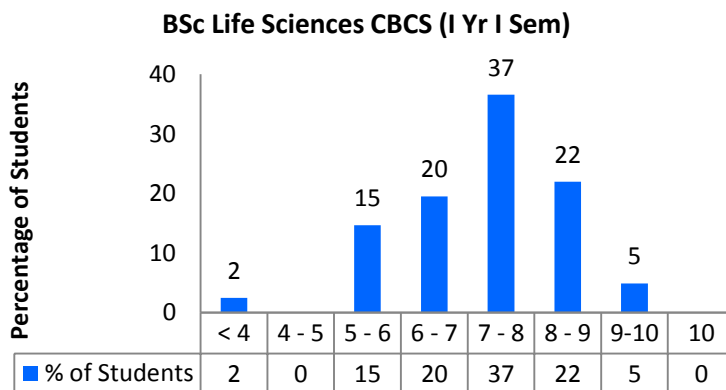
**Percentage of Marks**



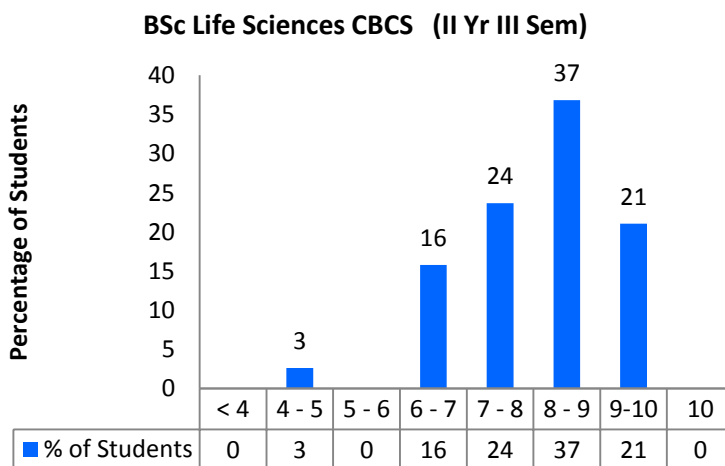
# Results

## B.Sc. Life Sciences

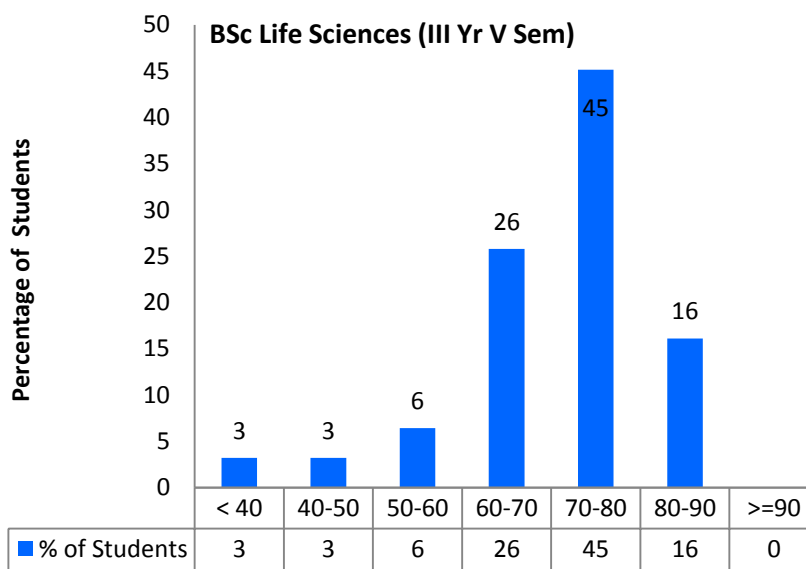
### Academic Performance Semester Exam November-December 2016



SGPA



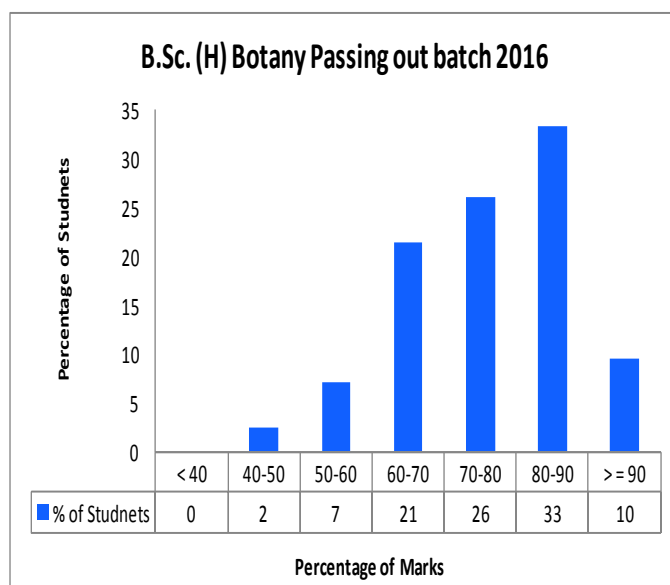
SGPA



Percentage of Marks

# Results

## Academic Performance of the passing out batch of B.Sc. (Hons) Botany 2016, FYUP restructured course



- Our students pursue post-graduation in Botany and other disciplines.
- Following post graduation, many students continue at DU for their doctoral work. Currently 11 students are working for their Ph.D. at the Department of Botany, DU.
- Some students move on to other premier institutions for pursuing their Ph.D. We have students at JNCASR, NIPGR, IITs, IISER Mohali, TERI, FRI, Jamia Millia Islamia, Jamia Hamdard, and Lady Hardinge Medical College.
- Former students after successful completion of their Ph.D. are serving as college and school principals and teachers, as scientists, in civil services, and other fields.
- Some of our former students are in foreign universities for post-doctoral work. Ninadini Sharma is pursuing her M.Sc./Ph.D. in Molecular Biology at the International Max Planck Research School, Gottingen, Germany.



## Some Notable Alumnae

### B.Sc.(Hons) Botany

- **Dr. Neelam Sharma** (1978) and **Dr. Anuradha Aggarwal**, Principal Scientists, NBPGR, New Delhi
- **Ms. Anju Chandna Puri** (1978), Principal, DAV School, Vasant Vihar, Delhi
- **Ms. Rohini Kapur Ghalaut**, (1987), was in NIIT for the last 13 years. Currently among the top 10 finalist teams in the Intel and DST Innovate for Digital India Challenge
- **Dr. Saman Habib** (1989), Principal Scientist, Central Drug Research Institute, Lucknow; INSA Young Scientist Awardee
- **Dr. Meenu Kapur** (1989), Associate Professor, GGSIP University, New Delhi
- **Dr. Payal Mago**, Principal, Shaheed Rajguru College of Applied Sciences for Women, DU
- **Prof. Sudeshna Mazumdar-Leighton** (1989), Department of Botany, DU
- **Dr. Himani Pandey**, (1991), Indian Administrative Service, Jharkhand cadre
- **Dr. Shruti Rai** (1996), Joint Director, Ministry of Environment & Forests
- **Dr. Parul Khurana** (2000), Assistant Professor of Biology, School of Natural Science and Mathematics, Indiana University
- **Dr. Geetanjali Kaushik** (2003), Associate Professor in Management and Campus Director of Mahatma Gandhi Mission Medical College, Aurangabad
- **Ms. Aryaka Akhoury** (2006), Indian Administrative Service, UP cadre. Currently Assistant Secretary, Ministry of Drinking Water and Sanitation
- **Ms. Shashi Meena** (2011), Scientist, Indian Agricultural Research Institute, New Delhi
- **Ms. Sweta** (2011), Assistant Professor, Department of Sociology and Social Anthropology, Mahatma Gandhi Central University, Motihari, Bihar

### B.Sc. General Group B and B.Sc. Life Sciences

- **Prof. Ashima Anand** (1969), Principal Investigator, Vallabhbhai Patel Chest Institute, University of Delhi, and INSA Young Scientist Awardee
- **Ms. Harsh Kumari**, Headmistress, CIE Experimental School, DU
- **Dr. Jugnu Jain**, Co-Founder and Chief Scientific Officer, Sapien Biosciences, Hyderabad
- **Ms. Pooja Mathur**, Senior Manager (Head), Human Resources & Organization Development, Plan International (India Chapter)
- **Ms. Subbudhi Bantia**, Head-Microscale and Technical Expert, The Gold Standard Foundation
- **Ms. Anupama Rai** (2007), Teaching Assistant and pursuing Ph.D. at IIT Kanpur
- **Ms. Shirin Ashraf** (2007) pursuing Ph.D. at the University of Cambridge, Cambridge, UK
- **Ms. Anupama Rai** (2007), Teaching Assistant and pursuing Ph.D. at IIT Kanpur
- **Ms. Rupam Jha**, at the London Research Institute, London, UK
- **Ms. Nilu Mishra**, Business Consultant, Infosys Consulting, Bengaluru

## Future Plans

- **Research Project Applied for:** Dr. Saloni Bahri, Dr. Sushma Moitra and Dr. Smriti Sharma Bhatia have applied for a research grant of Rs. 17.3 lakh for a UGC Major Research Project titled Detailed *in silico* and *in vitro* analysis of the effect of TiO<sub>2</sub>, Fe and Al nanoparticles on *Polypleurum stylosum* (Podostemaceae).
- **Molecular Biology Workshop** on RuBisCo: From sequence to protein expression for students of B.Sc. (Hons) Botany III ear (20-21 March 2017) under the DBT Star College Project.
- **Ecology Summer School** for teachers of undergraduate course (July 2017).

**Carl Linnaeus (1707-1778)**, Botanist from Sweden, and **Father of Plant Taxonomy**. *Linnaea borealis* (**twinflower**), is a commemorative genus with a single species and three subspecies, one for each of the continents of the northern hemisphere. The genus was earlier placed under Caprifoliaceae. Recent reclassifications have placed the genus in the commemorative family Linnaeaceae.



**Charles Robert Darwin (1809-1882)**, was an English naturalist, geologist and biologist, best known for his contributions to the science of evolution. *Darwiniothamnus* is a genus of flowering plants in the sunflower family. All three species of the genus are endemic to the Galápagos Islands.

*It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change.*

--Charles Darwin

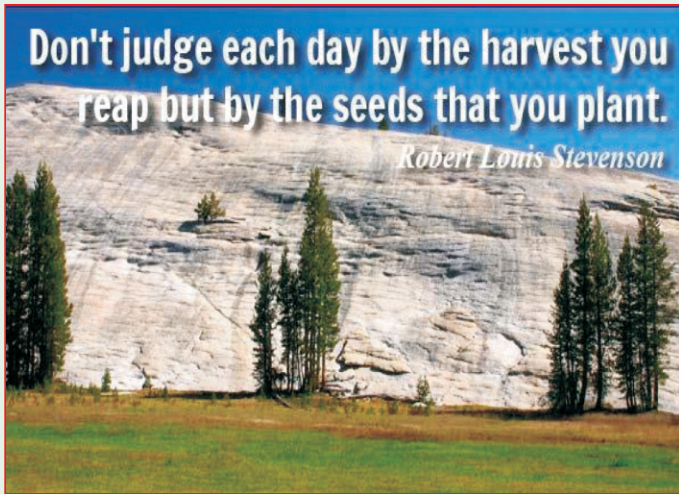
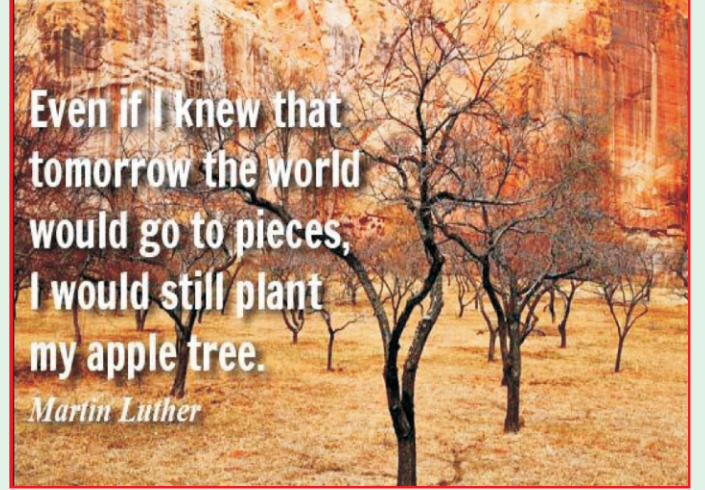


\* Front and back covers, inside of front cover, and pages 4, 5, 7, 9, and 16 have Google Images









**दशकूपसमा वापी दशवापीसमो ह्रदः।  
दशह्रदसमः पुत्रो दशपुत्रसमो द्रुमः॥**

**Matsya-purāṇa 154:512**

**Meaning: A pond equals ten wells, a reservoir equals ten ponds. A son equals ten reservoirs, and a tree equals ten sons!**



## **Miranda House**

University of Delhi

Delhi 110 007, India

Phone: +91-11-27666201, 27666983

E-mail: [principal@mirandahouse.ac.in](mailto:principal@mirandahouse.ac.in)

[office@mirandahouse.ac.in](mailto:office@mirandahouse.ac.in)

Website: [www.mirandahouse.ac.in](http://www.mirandahouse.ac.in)