



Miranda House
UNIVERSITY OF DELHI

**DS Kothari Centre for Research and Innovation in
Science Education**

Summer Workshop 2019

**Flavour of Research:
Investigative Projects in Multidisciplinary Contexts**



MIRANDA HOUSE
University of Delhi

Flavour of Research
Investigative Projects in
Multidisciplinary Contexts

Summer Workshop
(June – July 2019)

Orientation Program
Date: 3 June 2019

Physics Lab 1 (261)
10:00 am

Registration
Time: 9:00 am

Registration Fee
Rs.500



Summer Workshop 2019

Flavour of Research: Investigative Projects in Multidisciplinary Contexts

Summer Workshop 2019 was organised from 3 June to 12 July 2019. 72 students from across colleges and institutions participated in the Workshop and carried out projects in interdisciplinary fields. These research projects were experimental hands-on projects and were funded by the College and the Star scheme of DBT. Faculty members of the participating Science Departments mentored 20 projects.

DEPARTMENT OF BOTANY

Project 1:

Title of Project: A study on the effect of sodium chloride on seed germination

Mentors: Dr. Janaki Subramanyan and Dr. Rajeshwari

Students' Names:

1. Aadhyanjali, B.Sc. (H) Botany II Year, Miranda House
2. Gunjan, B.Sc. (H) Botany II Year, Miranda House
3. Mangesh Chauhan, B.Sc. (H) Botany II Year, Miranda House
4. Varsha Singh Solanki, B.Sc. (H) Botany II Year, Miranda House

Project 2:

Title of Project: A study on the effect of kinetin on senescence

Mentors: Dr. Janaki Subramanyan and Dr. Rajeshwari

Students' Names:

1. Kanika Thakur, B.Sc. (H) Botany II Year, Miranda House
2. Manchi Jandial, B.Sc. (H) Botany II Year, Hansraj College
3. Ritika, B.Sc. (H) Botany II Year, Hansraj College

Project 3:

Title of Project: Flower and fruit senescence

Mentors: Dr. Janaki Subramanyan and Dr. Rajeshwari

Students' Names:

1. Diksha Patel, B.Sc. (H) Botany, I Year, Miranda House
2. Pallavi Sharma, B.Sc. (H) Botany, I Year, Miranda House

Project 4:

Title of Project: Effect of different carbohydrates on *in vitro* pollen germination

Mentors: Dr. Saloni Bahri

Students' Names:

1. Shreya Sharma, B.Sc. (H) Botany, II Year, Miranda House
2. Anudeepthi, B.Sc. (H) Botany, II Year, Miranda House
3. Preet Manchanda, B.Sc. (H) Botany, I Year, Hindu College
4. Yakshna Sharma, B.Sc. (H) Botany, I Year, Hindu College

Project 5:

Title of Project: Effect of nanoparticles and heavy metals on seed germination

Mentors: Dr. Saloni Bahri

Students' Names:

1. Shailja, B.Sc. (H) Botany, II Year, Miranda House
2. Soumya, B.Sc. (H) Botany, II Year, Miranda House
3. Ritu Kumari, B.Sc. (H) Botany, II Year, Gargi College
4. Hari Priya B.Sc. (H) Botany, III Year, Miranda House

Project 6:

Title of Project: Assessment of different developmental stages of *Catharanthus roseus* flower and *in vitro* pollen germination studies

Mentors: Dr Rashmi Shakya

Students' Names:

1. Manasa Reddy Sanaga, B.Sc. Life Sciences, II Year, Miranda House

DEPARTMENT OF CHEMISTRY

Project 1:

Title of the Project: Analysis of milk samples of different commercially available brands.

Mentors: Dr. Sujata Sengupta and Dr. Shivani

Students' Names:

1. Amandeep Singh, B. Sc. (H) Chemistry, III Year, SGTB Khalsa College
2. Jaismin Saini, B. Sc. (H) Chemistry, III Year, SGTB Khalsa College
3. Ishmita Kaur, B. Sc. (H) Chemistry, III Year, SGTB Khalsa College

Project 2:

Title of the Project: Chocolate analysis

Mentors: Ms. Nutan Rani and Dr. Sujata Sengupta

Students' Names:

1. Sahiba Khan, B. Sc. (H) Chemistry, I Year, Miranda House
2. Abiyamol Saji, B. Sc. (H) Chemistry, II Year, Miranda House
3. Ayushi Saxena, B. Sc. (H) Chemistry, II Year, Miranda House
4. Astha Kukreti, B. Sc. (H) Chemistry, II Year, Miranda House
5. Pooja, B. Sc. (H) Chemistry, I Year, Miranda House

Project 3:

Title of the Project: Analysis of milk samples of different commercially available brands

Mentors: Dr. Sujata Sengupta and Dr. Shivani

Students' Names:

1. Monu Sherawat, B. Sc. (H) Chemistry, II Year, Hindu College
2. Sonu Sherawat, B. Sc. (H) Chemistry, II Year, Hindu College
3. Sudhir Kumar Takhar, B.Sc. Physical Science, I Year, Hindu College

Project 4:

Title of the Project: Quantitative Analysis of Salt: Iodine Content and Quantitative Analysis of chips: Fat Content

Mentors: Dr. Sharda M. Sonkar, Dr. Sujata Sengupta and Dr. Shivani

Students' Names:

1. Akansh Agrawal, B. Sc. (H) Chemistry, II Year, GD Goenka University
2. Paras Sirohiya, B. Sc. (H) Chemistry, II Year, GD Goenka University
3. Meenal Solanki, B. Sc. (H) Chemistry, II Year, GD Goenka University
4. Mohit Jindal, B. Sc. (H) Chemistry, II Year, GD Goenka University
5. Natasha Goel, B. Sc. (H) Chemistry, II Year, GD Goenka University

Project 5:

Title of the Project: Degradation of methyl orange using mixed metal oxide prepared using Pechini method

Mentors: Dr. Mallika Pathak and Dr. Malti Sharma

Students' Names:

1. Ankita Duggal, B. Sc. (H) Chemistry, II Year, Miranda House
2. Chetna, B. Sc. (H) Chemistry, II Year, Miranda House
3. Himanshu Sharma, B. Sc. (H) Chemistry, II Year, GD Goenka University
4. Mamta, B. Sc. (H) Chemistry, II Year, Miranda House
5. Shivani Tomar, B. Sc. (H) Chemistry, II Year, Miranda House

Project 6:

Title of the Project: Synthesis and characterization of reduced Graphene oxide nanoparticles and Graphene oxide-metal oxide nanocomposite

Mentors: Dr. Mallika Pathak and Dr. Malti Sharma

Students' Names:

1. Shivani Makar, M. Sc. Chemistry, I Year, G D Goenka University
2. Jyotika, B. Pharm., III Year, School of Pharmaceutical Education and Research, Jamia Hamdard
3. Pooja, M. Sc. Chemistry, I Year, G D Goenka University
4. Ankit Bhatnagar, B. Pharm., III Year, School of Pharmaceutical Education and Research, Jamia Hamdard

Project 7:

Title of the Project: Synthesis of Iron Oxide (III) nanoparticles using Chemical and Green methods

Mentors: Dr. Bani Roy, Dr. Mallika Pathak and Dr. Malti Sharma

Students' Names:

1. Aastha Pandey, B. Sc. (H) Chemistry, II Year, SGTB Khalsa College
2. Chavvi Grover, B. Sc. (H) Chemistry, II Year, SGTB Khalsa College
3. Rishu Narwal, B. Sc. (H) Chemistry, II Year, SGTB Khalsa College
4. Simran Aggarwal, B. Sc. (H) Chemistry, II Year, SGTB Khalsa College

Project 8:

Title of the Project: Qualitative Analysis of Nutrients in Different Fruit Samples and Quantitative Estimation of their Vitamin-C (Ascorbic Acid) Content

Mentors: Dr. Bani Roy, Dr. Mallika Pathak and Dr. Malti Sharma

Students' Names:

1. Priyanka Jain, B. Sc. (H) Chemistry, III Year, Miranda House
2. Deepa Shekhawa, B. Sc. (H) Chemistry, III Year, Miranda House
3. Shambhavee Singh, B. Sc. (H) Chemistry, III Year, Miranda House
4. Tiya, B. Sc. (H) Chemistry, III Year, Miranda House

DEPARTMENT OF PHYSICS

Project 1:

Title of the Project: Building Sensors Using Arduino

Mentors: Dr. Mallika Verma and Dr. Monika Tomar

Students' Names:

1. Aishwarya Jain, B.Sc. (H) Physics Ashoka University
2. Riya Banerjee, B.Sc. (H) Physics Ashoka University
3. Divyanshu Dimri, B.Sc. (H) Mathematics Shivaji College
4. Kriti Goma, B.Sc. (H) Mathematics Gargi College

Project 2:

Title of the Project: Synthesis of Zinc Oxide Nanoparticles and Water Disinfection

Mentors: Dr. Mallika Verma, Dr. Monika Tomar and Dr. Geeta Rani

Students' Names:

1. Anu Sharma, B.Sc. H Physics, II Year, Miranda House
2. Anshul Singh, B.Sc. H Physics, II Year, Miranda House
3. Mukta Rajput, B.Sc. H Physics, II Year, Miranda House

Project 3:

Title of the Project: Hand Gesture control Car

Mentors: Dr. Mallika Verma and Dr. Monika Tomar

Students' Names:

1. Charu Mittal, B.Sc. (H) Physics, I Year, Miranda House
2. Eeshita, B.Sc. (H) Physics, I Year, Miranda House
3. Aditi Choudhary, B.Sc. (H) Physics, I Year, Miranda House

Project 4:

Title of the Project: Obstacle avoiding metal detecting robot vehicle

Mentors: Dr. Mallika Verma, Dr. Monika Tomar and Dr. Geeta Rani

Students' Names:

1. Anushka Yadav, B.Sc. H Physics, II Year Miranda House
2. Harsha P, B.Sc. H Physics, II Year, Miranda House

Project 5:

Title of the Project: Accident alert System using Arduino

Mentors: Dr. Mallika Verma, Dr. Monika Tomar and Dr. Geeta Rani

Students' Names:

1. Pallavi, B.Sc. (H) Physics, I Year, Miranda House

2. Tanu Swami, B.Sc. (H) Physics, I Year, Miranda House
3. Seema Sahu, B.Sc. (H) Physics, I Year, Miranda House
4. Yashasvee Goel, B.Sc. (H) Physics, Daulat Ram College

Project 6:

Title of the Project: Cosmic ray Muon detector - QuarkNet

Mentors: Dr. Mallika Verma and Dr. S.N. Sandhya

Students' Names:

1. Divya Gaur, B.Sc. (H) Physics, I Year, Miranda House
 2. Jasmine Chhikara, B.Sc. (H) Physics, I Year, Miranda House
 3. Komal, B.Sc. (H) Physics, I Year, Miranda House
-

Teacher Mentors

Botany Department

Dr. Janaki Subramanyan
Dr. Rajeshwari
Dr. Saloni Bahri
Dr. Rashmi Shakya

Physics Department

Dr. Mallika Verma
Dr. Monika Tomar
Dr. S N Sandhya
Dr. Geeta Rani

Chemistry Department

Dr. Bani Roy
Dr. Mallika Pathak
Dr. Sharda M. Sonkar
Dr. Malti Sharma
Dr. Nutan Rani
Dr. Sujata Sengupta
Dr. Shivani

Support Staff

Botany Department

Mr. Vijay Kumar
Mr. Dinesh Sharma
Mr. Sonu Giri
Mr. Satish Chander Bhardwaj
Mr. Binod Kumar Mahto
Mr. Rohit Tank
Mr. Dinesh Giri

Physics Department

Mr. Cherian Daniel
Mr. Naveen Chandra Bhatt
Mr. Rajkumar Rana
Mr. Jay Prakash
Mr. Vinod Kumar
Mr. Sachin Singhal
Mr. Himanshu

Chemistry Department

Mr. Ravi Kumar
Mr. Vijay Kumar
Mr. Vikash Kaner
Mr. Shashi Mohan Shah
Mr. Rajender Kumar
Mr. Sanjeev Kumar
Mr. Harkesh Meena

Zoology Department

Mr. Ramesh Sharma
Mr. Rakesh Kumar
Mr. Sanjay Dutt
Mr. Mukesh Manik
Mr. Uday Chaudhary
Mr. Puneet Ranga
Mr. Suresh Prajapati
Mr. Chandra Shekhar

Professor Bijayalaxmi Nanda
DSKC Coordinator / PI

Dr. Mallika Verma
Programme Coordinator