

DEPARTMENT OF BIOTECHNOLOGY

Ministry of Science & Technology, Govt. of India

STAR STATUS SCHEME



SRI VENKATESWARA COLLEGE

(University of Delhi)

Benito Juarez Road

DhaultaKuan, New Delhi 110021

www.svc.ac.in

VI: Development of e-Resources and Publications

E-resources generated in the college

- e-Lectures on different topics/subjects and demonstration of various experiments have been done by the teachers of Sri Venkateswara College.
- e-Manuals containing the protocols of Value added experiments is proposed to be generated.
- Dr. Pooja Gokhale Sinha has Contributed e-resources to the National repository of Open educational resources (NROER) under the MHRD programme for Secondary School Science Students **Title: Heredity and Evolution**
<http://nroer.gov.in/55ab34ff81fccb4f1d806025/file/5c90d26616b51c01e4209d3f>
- Dr. Pooja Gokhale Sinha has been a Reviewer National Repository of Open Educational Resources (NROER) under the MHRD programme for Secondary School Science Students **Title: Improvement in Food Resources**
<http://nroer.gov.in/55ab34ff81fccb4f1d806025/file/5c90c2be16b51c01e5c50404>
- Faculty from Biochemistry, Botany and Zoology contributed protocols for the “Life Sciences Protocol Manual” (ISBN Number: 978 93 5300 5450) compiled under the DBT project ‘Generate E-SOPs & Lab Manual’
- **e-Flora and carbon foot printing**
145rbs and shrubs have been photographed. 70 species belonging to 27 genera and 19 families have been identified. Taxonomic description, classification and medicinal and economic importance has been documented for 37 species. Amongst these, around 35 plants are valued for their high medicinal properties. Some of them such as *Catharanthus roseus* have been shown to possess anti-cancerous properties. Link to e-Flora is mentioned below:<http://svc.ac.in/svcsas/newsimg/FRMT00750.pdf>
- **e-Museum and virtual dissection – ongoing**
- **Digital apps have been designed by Department of Physics, Department of Electronics and Department of Botany**
Created Carbon Footprint Calculator as a Webpage: <http://www.svc.ac.in/co2/form.asp> by Dr. Pooja Gokhale Sinha and Mr. Akanshu.

- **'Intelligent Greenhouse'** is an arduino-based project wherein we will automatically calibrate its working to a great extent, if not fully, in order to reduce manual labour. A greenhouse is a controlled-area-environment for the growth of plants. It is a structural building with different types of covering materials such as glass or plastic. It heats up because the transparent glass traps the incoming solar radiation, and is absorbed by the plants inside. Automatic greenhouse involves the automatic monitoring and controlling the climatic parameters like light, temperature, humidity and moisture in the soil, which directly or indirectly governs the plant growth. The heart of this project is the Atmega328p. Further this will be managed and controlled using an android application. The application will monitor all the parameters continuously and it will have access from anywhere through internet.

TRAINING MANUALS/SOPS/TEACHING KITS

S. No	Title	Departments Involved
1.	Manual for Laboratory Staff	Botany, Chemistry, Biotechnology, Biochemistry, Zoology, Physics
2.	Teaching Manual for “Basics in Bioinformatics “	Biochemistry
3.	Handbook on Immunological Techniques	Biotechnology
4.	Manual of value-added experiments in Botany	Botany
5.	Value Addition Experiments in Biotechnology	Biochemistry & Biotechnology
6.	Enhanced Physics Learning through experiments	Physics
7.	Hands on Training – Experimental Approach	Zoology

DBT Star Status College: E resources



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Digital connectivity towards a better tomorrow



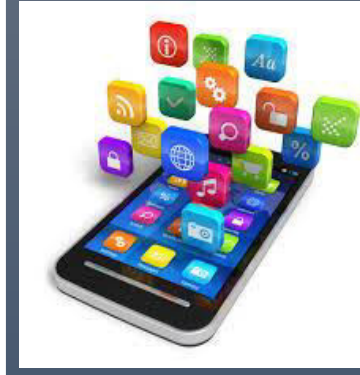
*e-Museum & Virtual Dissections
(Dept. of Zoology)
[e-Flora](#) &
Carbon foot printing
(Dept. of Botany)*



*e-Lectures
e-Manual
(Dept. of Biochemistry & Biotechnology)*



*SVC-Repository
(Dept. of Biochemistry)
DNA
Microbial Strains*



*Mobile App
(Dept of Electronics & Physics)
Smartroom
Green House*





E-Flora and Fauna

Campus Bird Survey

Identified 34 species of birds at College Campus during their five months survey

Campus Butterfly Survey

identified 20 species of butterfly at College Campus in collaboration with Bombay National history museum



Campus e-Flora

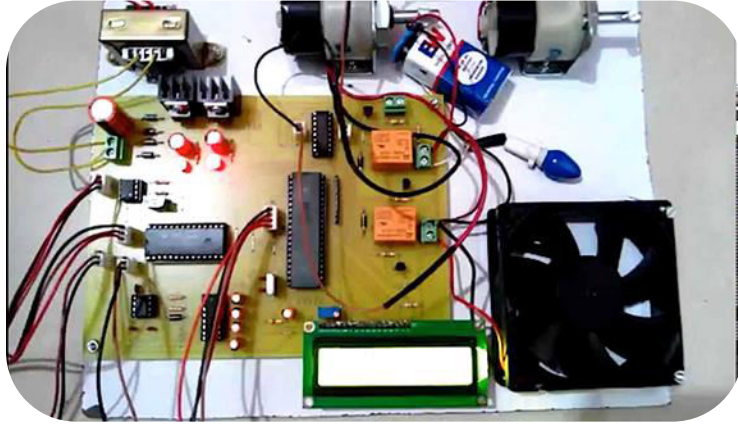
A. Rufous Tree Pie; B. Coppersmith Barbet; C. Rose-ringed Parakeet; D. Oriental White Eye; E. Red Vented Bulbul; F. Brown Headed Barbet; G. Green Bee Eater; H. Brahminy Starling.



Campus e-Fauna



Intelligent Green House



'**Intelligent Greenhouse**' is an arduino -based project wherein we will automatically calibrate its working to a great extent, if not fully, in order to reduce manual labour. A greenhouse is a controlled-area-environment for the growth of plants. It is a structural building with different types of covering materials such as glass or plastic. It heats up because the transparent glass traps the incoming solar radiation, and is absorbed by the plants inside.

System Overview

- Temperature sensor
- Humidity sensor
- Moisture Sensor
- Ambient Light Sensor

Sensors

Arduino

- ATmega8
- I/O Ports

- Heater/Fan
- Exhaust Fan
- Fluorescent Light-bulb
- Water Pump
- Internet
- LCD

Devices

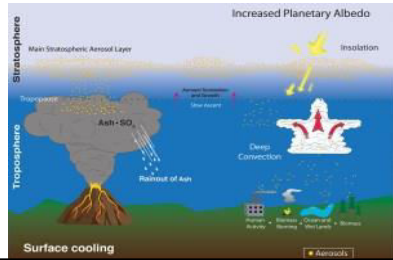
Voltage output from sensors sent as inputs into Arduino.

Based on input values, Arduino outputs specific voltages to turn ON/OFF devices.





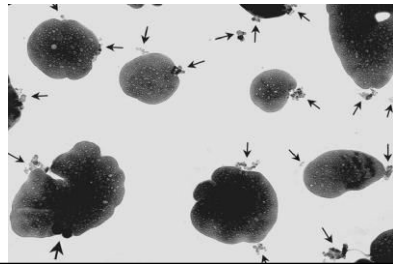
Faculty Program- TROPICSU



Lesson Plan: Aerosols and Climate

Dr. Shefali Shukla

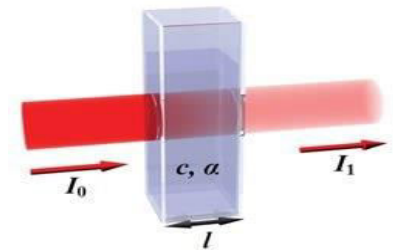
<https://tropicsu.org/lesson-plan-aerosols>



Lesson Plan: Black Carbon and its Impact on Earth's Climate

Dr. Shefali Shukla

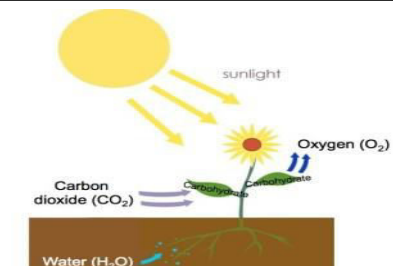
<https://tropicsu.org/lesson-plan-black-carbon/>



Lesson Plan: Beer-Lambert Law and Earth's Atmosphere

Dr. Pragya Gahlot and Dr. Rekha Yadav

<https://tropicsu.org/lesson-plan-beer-lambert-law/>



Lesson Plan: Impact of Climate Change on Photosynthesis

Dr. Aditi Kothari-Chhajer and Dr. Neeti Mehla

<https://tropicsu.org/lesson-plan-photosynthesis/>



Faculty Program- TROPICSU

	<p>Lesson Plan: Abiotic Stress on Plants due to Climate Change Dr Neeti Mehla and Dr Aditi Kothari Chhajer https://tropicsu.org/lesson-plan-abiotic-stress/</p>
	<p>Lesson Plan: Wild Strawberry Fruiting and Climate Change Dr Neeti Mehla, Dr Amit Vashishtha and Dr Aditi Kothari Chhajer https://tropicsu.org/lesson-plan-strawberry-fruiting/</p>
	<p>Lesson Plan: Insect Behavior and Climate Change Dr. Namita Nayyar https://tropicsu.org/lesson-plan-insect-behavior/</p>
	<p>Lesson Plan: Plant Diseases and Climate Change Dr. Aditi Kothari-Chhajer, Dr. Amit Vashishtha and Dr. Neeti Mehla https://tropicsu.org/lesson-plan-plan-diseases/</p>



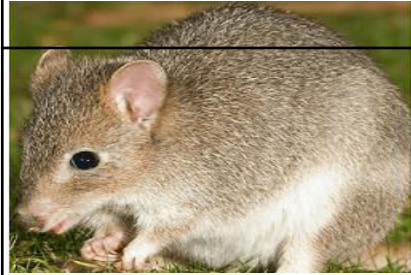
Faculty Program- TROPICSU



Lesson Plan: Phenotypic Plasticity: Coping with Climate Change

Dr. Amit Vashishtha, Dr. Aditi Kothari-Chhajer and Dr. Neeti Mehla

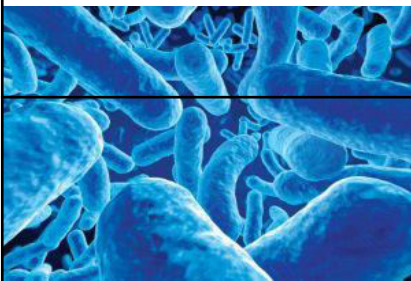
<https://tropicsu.org/lesson-plan-phenotypic-plasticity/>



Lesson Plan: Biodiversity and Species Extinction due to Climate Change

Dr. Robin Suyesh

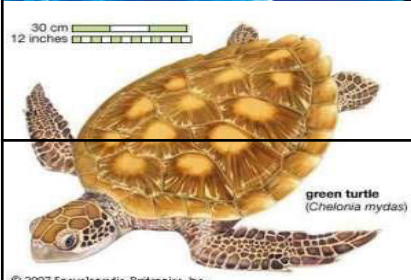
<https://tropicsu.org/lesson-plan-species-extinction/>



Lesson Plan: Teaching about Microbial Life and Climate Change

Dr. Vandana Malhotra and Dr. Meeta Bhardwaj

<https://tropicsu.org/lesson-plan-teaching-about-microbial-life-and-climate-change/>



Lesson Plan: The Impact of Climate Change on Sex Determination in Sea Turtles

Dr. Ravindra Varma Polisetty



The SVC_BCH Repository - A Star College Initiative

An initiative to create an inventory of the strains with their genotype, all relevant features and different types of plasmids along with sequence (wherever applicable) routinely used for teaching purposes.

