

# Bahauddin Government Science College, Junagadh

## Best Practices

### Academic Year 2020-21

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#### **Best Practice 1: Online courses for enrichment in chemistry subject**

##### **Objective**

The objective of online courses was to provide students with the skills and knowledge required to succeed in higher education, industry and other related fields. Courses were planned to expose the students to a breadth of experimental techniques using modern instrumentation. We also aimed to orient the students to learn the practical skills needed to design, safely conduct and interpret chemical research. The student will develop the ability to effectively communicate scientific information and research results in written and oral formats. Besides subject knowledge, professionalism including the ability to work in teams and apply basic ethical principles was also a part of these courses.

##### **The Context**

The COVID-19 lockdown situation offered a new experience and perspective of teaching and learning. The department of Chemistry planned and executed some organic and inorganic online courses for enhancement of knowledge in chemistry subject. The courses were designed so that the students can learn with activities and assessments and develop conceptual awareness. The platforms of Google classroom, you tube and what's app were used to deliver lectures, assignments and tests. The subject experts evaluated the students on various bases and prepared the mark sheets. We also gave awards to the top 3 scorers in each course to motivate them.

## **The Practice**

Professor of Chemistry department Dr. Satish Ghalani formed online courses like 'Molecular Symmetry (26th Oct to 31st Oct,2020 )', 'Alcohol, Phenol, Ether and Amines (1st Dec to 4th Dec,2020)', Crystal field Theory (3rd Dec to 5th Dec,2020)', Hetero cyclic Compounds (13th May to 15th May,2021) and 'Mixed examples of Spectroscopy (21st May to 24th May,2021) for the students of UG and PG at national level. Dr. Tushar Sutariya organized an online course on 'Pericyclic Reaction (29th May to 1st June,2021)' and Dr. Manoj Dhuduk executed an online course on Electrochemistry (7th June to 10th June,2021) to help the student understand the interdisciplinary nature of chemistry and to integrate knowledge of mathematics, physics, and other disciplines to a wide variety of chemical problems.

## **Evidence of Success**

The courses received tremendous response from students which encompassed state, country and continent. It was an enlightening experience for chemistry students as well as the teachers. The course content was precisely designed and delivered effectively so it has created very good impact which is evident in feedback and review of the participants. Almost every course got overwhelming response in terms of participation. On an average more than 1000 participants joined the course with highest number of participation was 1531 in "Mix examples of spectroscopy" course. The registered participants with 100% attendance, submission of assignment and securing minimum 60% marks in final evaluation were issued the certificates.

## **Problems encountered and resources required**

There are, however, challenges to overcome. Some students without reliable internet access or technology struggle to participate in digital learning. Besides this, virtual environment was quite challenging particularly in chemistry subject that is based on practicals, observations, evidence and experiments.

## **Best Practice: 2 Establishment of additional Botanical Garden at college campus**

### **Objective**

Bahauddin Science College is situated at the heart of Girnar region which is blessed with the wealth of diverse range of flora and fauna species. To promote the awareness, study and conservation of plant species diversity botanical Garden is developed in the college. In addition to the existing botanical garden, it was systematically planned by Botany Department in 2020. Since 2020 we are continuously planting medicinal, seasonal, ornamental, endemic and rare plants to enrich botanical garden in the benefit of the students. In future also the department has planned to grow endangered and threatened species which requires a particular soil type and specific temperature. Our effort was to establish one sort of conservation of certain species of plant, i.e., a type of germplasm.

### **The Context**

The botanical garden is developed in library campus. Apart from the main botanical garden some places like back yard of main building and administrative block is also identified for the plantation of local and rare species and other different variety of plants. A proper fencing is done to define garden boundaries and to keep out animals. The garden is maintained by the department of botany.

### **The Practice**

The botanical garden at Bahauddin Science College consists of 95 plant species in all to maintain plant diversity. In short duration of 2 years only college has successfully developed a flourishing garden which includes 60 plant species at botanical garden, 17 plant species at the backyard of main building and 18 plant species at administrative block. The rare and threatened species like *Boswellia serrata* (Salai Gugal), *Commiphora wightii* (Gugal), *Ephedra sp.* and the rare species as *Leptadenia reticulata* (Jeevantika), *Sterculia urens* (Kadayo) are grown with utmost care. The students of botany department visit the botanical garden regularly during practicals. As a part of botanical education the garden has turned into a valuable venue for teaching and research. At the same time, it allows to connect theory with practical. Besides this, the colorful blooms, the sweet fragrance in the air and

tranquil atmosphere is conducive for teaching and learning. We aim to establish new botanical garden like

### **Evidence of success**

The students gain skills and knowledge, which they apply to do botanical research, plant breeding and agriculture etc. The plant collection which is designed for education, research and display as an essential component of syllabus for botany students has promoted teaching and learning environment. Now, students easily get information about the structure, properties, and classification of the plants. Owing to their convenient locations and accessibility student and faculties can visit the garden for additional review and study. The people of the city visit college campus to get leaves of some of the rare medicinal plants and herbs for their personal usage also.

### **Problems encountered**

Some specific plants have strict environmental requirements like soil type, water, fertility retention, convenient pH for proper growth of the plants. Sometimes the very costly plants don't survive due to environmental challenges.