

SANT HIRDARAM GIRLS COLLEGE, BHOPAL

Department of Chemistry

Certificate Course: Exploring Every Day Chemistry with Research Techniques

Academic Year- 2020-21

Course Objectives:

To expose the students to a different experimental techniques in Chemistry

Students will learn and apply basic techniques used in the laboratory for preparation, purification and identification of organic compounds.

To develop a familiarity with contemporary issues on water and natural water qualities

To provide a broad foundation in chemistry that will cultivate scientific reasoning and analytical problem solving ability in the students

To know list of plants having active constituents effective as anti-oxidant and determine Total Phenolic content and Reducing Power Assay.

Course Outcome:

To Identify, isolate and characterize the active constituents against advanced diseases from plants.

To learn the concepts of inorganic and organometallic chemistry including those related to synthesis, reaction chemistry, structure and bonding, basic and advanced laboratory procedures used in Organic and inorganic synthesis.

To develop the ability to effectively communicate the learning outcomes of research in their future endeavors.

To describe the main sources of water pollution, the main types of pollutant and how each type may be controlled.

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Course Content

Course Duration: - One Week

Fees: - Rs 50/-

Module	Content	Duration
Module I- <u>Phytochemical Analysis of Plant Material</u> <u>(Day 1)</u>	<ul style="list-style-type: none">• Collection and preparation of the plant material, Preparation of crude extract and extraction of Phytochemical Constituents• Total Phenolic Content and Reducing Power Assay	ONE DAY
<u>(Day 2)</u>	<ul style="list-style-type: none">• Antioxidant Activity of Plant extract• Compilation of Results	ONE DAY
Module II- <u>Preparation and Biological Activity of Bioinorganic Complexes</u> <u>(Day 3)</u>	<ul style="list-style-type: none">• Introduction to Bioinorganic Complexes and their Medicinal value.• Preparation of Metal Precursor, Ligand (Sciff Base) and Metal Ligand Complex	ONE DAY
<u>(Day 4)</u>	<ul style="list-style-type: none">• Screening methods to determine Antibacterial Activity Agar diffusion well-variant Minimum inhibitory concentration (MIC) determination Statistical evaluation• Compilation of Results	ONE DAY
Module III- <u>Water Analysis</u> <u>(Day 5)</u>	<ul style="list-style-type: none">• Introduction to different water analysis parameters, Sampling from different water areas (Kolar, Bairagarh, BHEL, Sehore)• Testing of Hardness in Water Samples.	ONE DAY
<u>(Day 6)</u>	<ul style="list-style-type: none">• Testing for Dissolved Oxygen in different Water Samples• Compilation of Results	ONE DAY