**DSC-1: (Title of Paper) FUNDAMENTALS OF CHEMISTRY-1**

**Learning Objectives of the Course:**

i) To develop critical thinking about the Atomic Structure.

ii) To understand the structure of an atom and electron distribution in an atom.

iii) To understand variation in periodic properties.

iv) To understand the basic concept of organic reaction mechanism.

v) To understand reaction intermediate involved in organic reactions.

vi) Students will learn fundamentals of thermodynamics.

vii) To understand different laws of thermodynamics.

**Course Outcomes (COs):**

After completion of the course, students will be able to -

i) Write the electronic configurations of the elements.

ii) Understand the changes in periodic properties in modern periodic table.

iii) Understand the different types of electron displacement in a molecule.

iv) Differentiate between inductive, electromeric, resonance, and mesomeric effects.

v) Understand the methods of formation, structure and properties of the intermediate.

vi) Understand the basic concepts and different laws of thermodynamics and thermochemistry.

vii) The concept of chemical equilibrium.

**DSC-2: (Title of Paper) Lab Course -1**

**Learning Objectives of the Courses**

1. To introduce glassware and instruments used in a Chemistry laborainey.
2. To understand the importance of calibration of glassware and instruments in tune with concepts of precision and accuracy.
3. To develop awareness about safety measures for handling chemicals
4. Develop proficiency in fundamental chemical laboratory tochniques.
5. To develop the skill of preparation of solution of different concentration using stoichiometry
6. Follow established SOPs for various chemical experiments

**Course Outcomes (COs):**

After completion of the course, students will be able to-

1. To consistently follow established SOPs for various chemical experiments.
2. To prepare solution of desired concentration.
3. To maintain accurate and thorough reconds of experimental data, and analyze results to draw meaningful conclusions,
4. To apply critical thinking skills to identify and address challenges that may arise during experiments, showensing the ability to troubleshoot and optimize procedures.
5. To gain insights intu how chemical lab practices are applied in professional research or industrial settings, preparing them for future careers in diverse selemifie and industrial fields.
6. Students will demonstrate ethical conduct in all aspects of laboratory work, emphasizing integrity, responsibility, and professionalism.

**SEC-1A: (Title of Paper) Water Treatment and Analysis**

**(Theory Paper)**

**Learning Objectives of the Course:**

i) To know the sources of water pollutants

ii) To aware about the properties of water

iii) Know the difference between industrial effluent and municipal waste

iv) Know the quality of drinking water and irrigation water

**Course Outcomes (COs):**

After completion of the course, students will be able to -

i) Resources and properties of water

ii) Understand the different pollutants

iii) Understand treatment of domestic and industrial water

iv) Understand the sources of water pollution

**SEC-2A: (Title of Paper) Water Treatment and Analysis**

**(Practical paper)**

**Learning Objectives of the Course:**

i) To know the sources of water pollutants.

ii) To aware about the properties of water.

iii) Know the difference between industrial effluent and municipal waste.

iv) Know the quality of drinking water and irrigation water.

**Course Outcomes (COs):**

After completion of the course, students will be able to -

i) Resources and properties of water.

ii) Understand the different pollutants.

iii) Understand treatment of domestic and industrial water.

iv) Understand the sources of water pollution.

v) Carryout experiment for determination of water quality parameter.

**SEC-1 B: (Title of Paper)** - **Stoichiometry-1**

**(Theory paper)**

**Learning Objectives of the Course:**

1. To develop scientific approach among students to inculcate practical awareness.

2. To know different concentration units.

3. To train for preparing solution of different concentrations.

4. Develop proficiency in fundamental chemical laboratory techniques.

5. To develop analytical approach in experimentation.

6. Aware error and accuracy experiments.

**Course Outcomes (COs):**

After completion of the course, students will be able to -

1. Undentand theoretical aspects and working principles of chemistry labwares.
2. Prepare all standards solution, buffer solutions, indicators, common laboratory reagents.
3. Perform the some basic experiments.
4. Develop skills in common laboratory technique.

**SEC-1 B: (Title of Paper) Stoichiometry-1**

**(Practical paper)**

**Learning Objectives of the Course:**

1. To develop scientific approach among students to inculcate practical awareness

2. To know different concentration units

3. To train for preparing solution of different concentrations

4. Develop proficiency in fundamental chemical laboratory techniques.

5. To develop analytical approach in experimentation

6. Aware error and accuracy experiments.

**Course Outcomes (COs):**

After completion of the course, students will be able to-

1. Apply working principles of chemistry labwares.

2. Prepare all standards solutions, buffer solutions, indicators, common laboratory reagents.

3. Perform some basic experiments with accuracy.

4. Use skillfully common laboratory techniques.

***This course will be available for the students form other faculty***

**GE/OE-1: (Title of Paper) Herbal Chemistry-1**

**(Theory paper)**

**Learning Objectives of the Course:**

1. To aware the importance of herbs for health.

2. To use appropriate steps to prepare preserve herbal products.

3. To aware rules and regulations related herbal predicts

**Course Outcomes (COs):**

After completion of the course, students will be able to –

1. Acquainted with importance of herbal drugs.
2. Know the different sources of herbal medicine and their preparation.
3. Acquire the knowledge of organic farming.
4. Know about the Indian system of drugs ayurveda, Unani, siddha and homeopathy.
5. Know health benefits and role of nutraceuticals.

**DSC-3: (Title of Paper) FUNDAMENTALS OF CHEMISTRY-2**

**Learning Objectives of the Course:**

1. To develop critical thinking about the nature of chemical bonds.
2. To understand the concept of hybridization and thereby the geometry of simple molecules.
3. To train the students to predict the geometries and shapes of molecules on the basis VIIT
4. To understand the organic molecules in three dimension
5. To aware about the isomerism in organic compounds
6. To understand the factors affection rate of reactions and order of reactions.

**Course Outcomes (COs):**

After completion of the course, students will be able to -

1. Identify the type bond.
2. Predict the shape and geometry and bond angle in a molecule.
3. Understand the factors affecting ionic bond formation.
4. Identify types of isomerism.
5. Apply the CIP rules for nomenclature of stereoisomers.
6. Rate of reactions and factors affecting it.
7. Solve the numerical on order reactions.

**DSC-4: (Title of Paper) Lab course-2**

**Learning Objectives of the Course:**

1. To train for volumetric technique.
2. To give skill for handling the various apparatus and chemicals in preparation and purification
3. To train for purification of compounds
4. to develop skill to check the purity of the compounds
5. to provide skill of handling specialized apparatus viscometer, stalagmometer for determining physical properties

**Course Outcomes (COs):**

After completion of the course, students will be able to

1. Acquire skills in common techniques for the volumetric estimations of inorganic compound.
2. Acquire skills in common techniques preparation and purification of organic compounds.
3. Assess the effectiveness of purification techniques.
4. Develop precision in measuring and recording physical constants.
5. Analyze the relationship between meiting/boiling points and purity.
6. Develop skills in recording and reporting experimental procedures and results.
7. Handle different apparatus like cudiometer viscometer, stalagmometer for determining physical properties.

**VSC-1A: (Title of Paper) Cosmetics and perfumery**

**(Theory Paper)**

**Learning Objectives of the Course:**

1. Aware about types of perfumes and their composition.

2. Give knowledge about extraction method for perfumes.

3. Aware about different cosmetic products.

4. Impart knowledge about constituents of cosmetic.

5. Give knowledge about essence.

**Course Outcomes (COs):**

After completion of the course, students will be able to **-**

1. Classify the perfumes.

2. Understand the constituent of perfumes.

3. Preparation of perfumes.

4. Constitutes of cosmetics.

5. Method of preparing cosmetics.

6. Prepare essence.

**VSC-2A: (Title of Paper) Cosmetices and perfumery**

**(Practical paper)**

**Learning Objectives of the Course:**

1. Aware about types of perfumes and their composition.

2. Give knowledge about extraction method for perfumes.

3. Aware about different cosmetic products.

4. Impart knowledge about constituents of cosmetic.

5. Give knowledge about essence

**Course Outcomes (COs):**

After completion of the course, students will be able to -

1. Classify the perfumes.

2. Understand the constituent of perfumes.

3. Preparation of perfumes.

4. Constitutes of cosmetics.

5. Method of preparing cosmetics.

6. Prepare essence.

**VSC-1 B: (Title of Paper) Soap and detergents**

**(Theory paper)**

**Learning Objectives of the Course:**

1. To aware the different types of cleaning agents
2. To aware different methods used of preparation of soops detergents and shampoos
3. To know the different parameters for purity of soaps, detergents and shampoos
4. To know the techniques for checking quality and purity of samples

**Course Outcomes (COs):**

After completion of the course, students will be able to -

1. Can gain the information about soaps, detergents and shampoos.
2. Can Acquire knowledge of basic concepts and techniques of soap and detergent industry.
3. Get hands training of analysis of soaps and detergents.
4. Aware about environmental aspects of detergents.
5. Development Skill for detergent, liquid soap and laundry soap making

**VSC-2 B: (Title of Paper) Soap and detergents**

**(Practical paper)**

**Learning Objectives of the Course:**

1. To aware the different types of cleaning agents
2. To aware different methods used of preparation of soaps detergents and shampoos
3. To know the different parameters for purity of soaps, detergents and shampoos
4. To know the techniques for checking quality and purity of samples

**Course Outcomes (COs):**

After completion of the course, students will be able to -

1. Can gain the information about soaps, detergents and shampoos.
2. Can Acquire knowledge of basic concepts and techniques of soap and detergent industry.
3. Get hands training of analysis of soaps and detergents.
4. Aware about environmental aspects of detergents.
5. Development Skill for detergent, liquid soap and laundry soap making

***This course will be available for the students form other faculty***

**GE / OE -2 : (Title of Paper) Herbal Chemistry-II**

**(Theory paper)**

**Learning Objectives of the Course:**

1. To aware the importance of herbs for health.
2. To use appropriate steps to prepare preserve herbal products.
3. To aware rules and regulations related herbal products.

**Course Outcomes (COs):**

After completion of the course, students will be able to

1. Acquainted with importance of herbal drugs.
2. Know the different sources of herbal medicine and their preparation.
3. Acquire the knowledge of organic farming.
4. Know about the Indian system of drugs ayurveda, Unani, siddha and homeopathy.