Gyanmanjari Innovative University

Course Syllabus
Gyanmanjari Science College
Semester-1 (M.Sc)

**Subject:** Practicals-MSCIN11506

**Type of course:** Major

**Prerequisite:** How to create and carry out work up and separation procedures.

**Rationale:** To teach students the methodology of a scientific experiment. It allows students to learn chemistry in different ways.

**Teaching and Examination Scheme:**

| Teaching Scheme | | | Credits | Examination Marks | | | | | Total Marks |
|---|---|---|---|---|---|---|---|---|---|
| | | | | Theory Marks | | Practical Marks | | CA | |
| CI | T | P | C | ESE | MSE | V | P | ALA | |
| 0 | 0 | 12 | 6 | 00 | 00 | 40 | 80 | 30 | 150 |

*Legends: CI-Class Room Instructions; T – Tutorial; P - Practical; C – Credit; ESE - End Semester Examination; MSE- Mid Semester Examination; V – Viva; CA - Continuous Assessment; ALA- Active Learning Activities.*

**Continuous Assessment:**

| Sr. No | Active Learning Activities | Marks |
|---|---|---|
| 1 | **JOURNAL**<br>Unit wise practical will be given by faculty and students will prepare a journal for the practical. | 30 |
| | **TOTAL** | 30 |

**List of Practical**

| Sr. No | Descriptions | Hrs |
|---|---|---|
| ❖ | **Organic Separation**<br>Separation of two components from the given binary or ternary mixture of organic compounds Qualitatively and identification of its components. | 60 |
| 1 | Liquid-Liquid (min-5) | |
| 2 | Solid – Liquid (min-5) | |
| 3 | Solid – Solid (min-5) | |
| ❖ | **Organic Estimation** | 30 |
| 1 | Estimation of phenol (bromination method) | |
| 2 | Estimation of aniline (Bromination method) | |
| 3 | Estimation of Formaldehyde by iodometry. | |
| 4 | To determine the strength of given glucose in a given solution. | |
| 5 | To determine the strength of given sucrose in a given solution. | |
| 6 | Estimation of ascorbic acid in a mixture. | |
| 7 | To determine the amount of acid and ester in a given solution. | |
| 8 | To determine the % purity of sodium carbonate. | |

| | | |
|---|---|---|
| 9 | Estimation of copper in the given Cu(II) salt . | |
| 10 | Estimation of hydrogen peroxide by Iodometery. | |
| ❖ | Chromatographic Techniques<br>To perform Ascending Chromatography with the use of different amino acids. (Min -10) | 30 |
| | **Total** | **120** |

**Course Outcome:**

| After learning the course the students should be able to: | |
|---|---|
| CO1 | Create and carry out work up and separation procedures. |
| CO2 | Critically evaluate data collected to determine the identity, purity, and percent yield of products. |
| CO3 | Appreciate the central role of chemistry in our society . |
| CO4 | Use the scientific method to create, test, and evaluate a hypothesis. |
| CO5 | Explain why chemistry is an integral activity for addressing social, economic, and environmental problems. |

**Instructional Method:**

The course delivery method will depend upon the requirement of content and need of students. The teacher in addition to conventional teaching method by black board, may also use any of tools such as demonstration, role play, Quiz, brainstorming, MOOCs etc.

From the content 10% topics are suggested for flipped mode instruction.

Students will use supplementary resources such as online videos, NPTEL/SWAYAM videos, e-courses, Virtual Laboratory

The internal evaluation will be done on the basis of Active Learning Assignment

Practical/Viva examination will be conducted at the end of semester for evaluation of performance of students in laboratory.

**Reference Books:**

1) V.K. Ahluwalia

2) Practical chemistry by Dr. S. Buvaneswari

3) Practical Organic Chemistry by Dr. L. Rakesh Sharma

4) Practical Organic Chemistry by Dr. M. Satish Kumar