

# B.Sc. Sem-I CO & COs

HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN



Course Name : B. Sc. Chemistry Semester : I  
PROGRAM CODE : SCIUG102  
COURSE CODE : SC23MJDSCCHE101

Type of course : Major Discipline Specific course

Name of course : Fundamentals of chemistry I

Total Marks : 100

Effective from June 2023 Under NEP 2020

Total Credits : 04	Teaching Hours per Week: 04	Theory	External 50 Marks
	Teaching Hours per Semester: 60		Internal 50 Marks

## Course Objectives:

1. To understand the core concepts of valence bond theories.
2. To understand organic chemistry i.e. resonance, hyperconjugation, inductive effect etc. and their application.
3. To study about the chemical kinetics and types of reactions.
4. To know about the Volumetric titrations and calculations for estimation.

## Course Outcome:

1. Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistries.
2. Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
3. Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
4. Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
5. To know about the Volumetric titrations and calculations for estimation.

  
Head

Chemistry Department  
The H.N.S.B. Ltd., Science College  
Himatnagar-383001, Dist. S.K.



**HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN**

Program Name : **B. Sc. ChemPMJDSCistry** Semester : **I**  
**PROGRAM CODE : SCIUG102**  
**COURSE CODE : SC23PMJDSCCHE101**

Type of Course : **Practicals Major Discipline Specific Course PMJDSC**  
Name of Course : **Practical's for Fundamentals of chemistry I**  
Total Marks : **100**

**Effective from June 2023 Under NEP 2020**

**GROUP A**

Total Credits : 02 Teaching Hours per Week: 04 Lab Teaching Hours per semester:60 Minimum Number Practicals to be Performed: 12	Practicals	External 25 Marks
		Internal 25 Marks

**GROUP B**

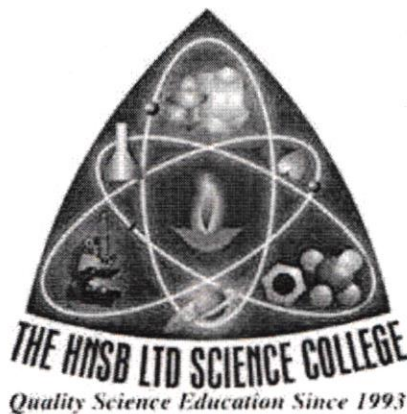
Total Credits : 02 Teaching Hours per Week: 04 Lab Teaching Hours per semester:60 Minimum Number Practicals to be Performed: 08	Practicals	External 25 Marks
		Internal 25 Marks


**Course Objectives:**

1. To identify the organic components.
2. Preparation of solutions and their standardization.

**Course Outcomes:**

1. Students will gain a comprehensive knowledge and skills in standardization and preparation of solutions for carrying out reactions.
2. To understand basic methods to identify the compounds on the basis of M. Pt or b. Pt.



  
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**Chemistry Department**  
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**HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN**

Course Name : **B. Sc: Chemistry** Semester : **I**  
**PROGRAM CODE : SCIUG102**  
**COURSE CODE : SC23MIDSCCHE102**

Type of course : **Minor Elective course MIDSC**  
Name of course : **Fundamentals of chemistry I**  
Total Marks : **50**

**Effective from June 2023 Under NEP 2020**

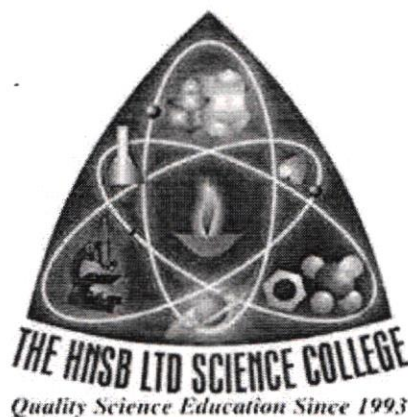
Total Credits : 02	Teaching Hours per Week: 02 Teaching Hours per Semester: 30	Theory	External 25 Marks
			Internal 25 Marks


**Course Objectives:**

1. To understand the core concepts of valence bond theories.
2. To understand organic chemistry i.e. resonance, hyperconjugation, inductive effect etc. and their application.

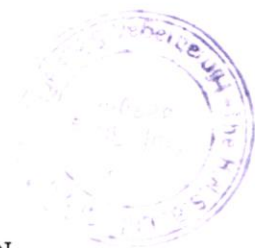
**Course Outcome:**

1. Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistries.
2. Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
3. Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.



  
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**HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN**

Program Name : **B. Sc. Chemistry** Semester : **I**  
**PROGRAM CODE : SCIUG102**  
**COURSE CODE : SC23PMIDSCCHE102**

**Type of Course : Practicals Minor (Elective) Discipline Specific Course PMIDSC**

**Name of Course : Practical's for Fundamentals of chemistry I**

**Total Marks : 50**

**Effective from June 2023 Under NEP 2020**

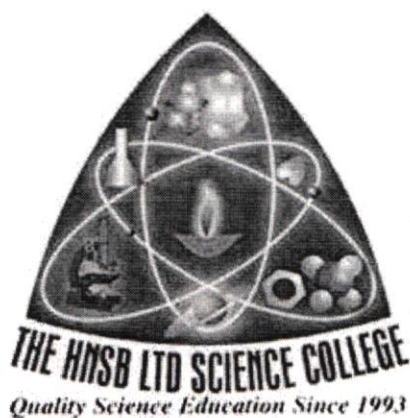
Total Credits : 02    Teaching Hours per Week: 04 Lab Teaching Hours per semester:60 Minimum Number Practicals to be Performed: 10	Practicals	External 25 Marks
		Internal 25 Marks

**Course Objectives:**

1. To identify the organic components.
2. Preparation of solutions and their standardization.

**Course Outcomes:**

1. Students will gain a comprehensive knowledge and skills in standardization and preparation of solutions for carrying out reactions.
2. To understand basic methods to identify the compounds on the basis of M. Pt or b. Pt.



  
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**HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN**

Course Name : B. Sc. Chemistry Semester : I  
PROGRAM CODE : SCIUG102  
COURSE CODE : SC23MDCCHE103

Type of course : Multidisciplinary Course MDC  
Name of course : General chemistry I  
Total Marks : 50

Effective from June 2023 Under NEP 2020

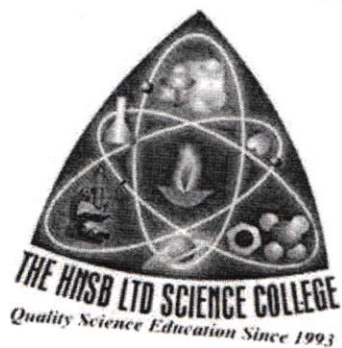
Total Credits : 02	Teaching Hours per Week: 02 Teaching Hours per semester: 30	Theory	External 25 Marks
			Internal 25 Marks

**Course Objectives:**

1. To study about the Chemical kinetics and types of reactions.
2. To know about the Volumetric titrations and calculations for estimation.

**Course Outcomes:**

1. Students will be able to explore new areas of research in both chemistry and allied fields of science and technology.
2. Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
3. Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental problems.
4. Students will be able to function as a member of an interdisciplinary problem solving team.



*[Signature]*  
Head

Chemistry Department  
H.N.S.B. Ltd, Science College  
Patan Nagar-383001, Dist. S.K.



**HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN**

Program Name : **B. Sc. Chemistry** Semester : **I**  
PROGRAM CODE : **SCIUG102**  
COURSE CODE : **SC23PMDCCHE103**

Type of course : **Practicals Multi Disciplinary Course PMDC**  
Name of course : **Practical's for General chemistry I**  
Total Marks : **50**

**Effective from June 2023 Under NEP 2020**

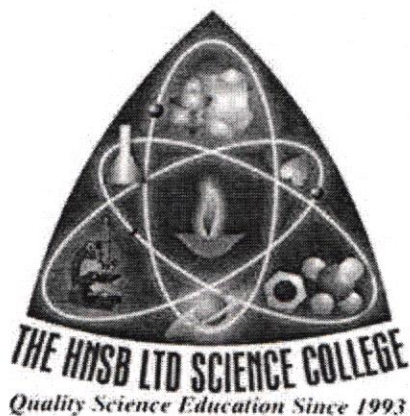
Total Credits : 02	Teaching Hours per Week: 04	Practicals	External 25 Marks
	Lab Teaching Hours per semester: 60		Internal 25 Marks
Minimum Number Practicals to be Performed: 10			


**Course Objectives:**

1. To identify the organic components.
2. Preparation of solutions and their standardization.

**Course Outcomes:**

1. Students will gain a comprehensive knowledge and skills in standardization and preparation of solutions for carrying out reactions.
2. To understand basic methods to identify the compounds on the basis of M. Pt or b. Pt.



  
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**HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN**

Program Name : **B. Sc. Chemistry** Semester : **I**  
**PROGRAM CODE : SCIUG102**  
**COURSE CODE : SC23SECICHE106**

Type of course : **Skill Enhancement course SEC**

Name of course : **Analytical Chemistry-I**

Total Marks : **50**

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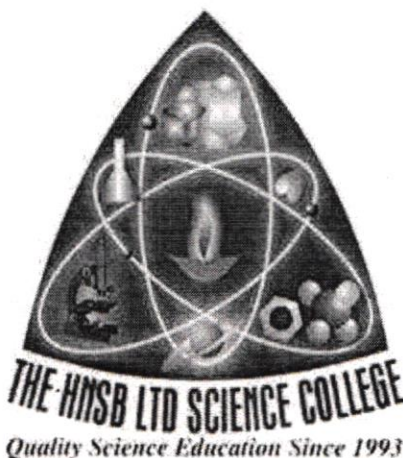
Total Credits : 02    Teaching Hours per Week: 02 Teaching hours per semester: 30	Theory	External 25 Marks
		Internal 25 Marks


**Course Objectives:**

1. To understand importance of taking precautions in Chemical laboratory
2. To have knowledge of lab apparatus
3. To know about primary and secondary laboratory reagents .

**Course Outcome:**

1. Students will gain a comprehensive knowledge and skills in assessing laboratory reagents.
2. To understand the importance glass wares in chemical laboratories and in performing experiments.
3. Students will learn how to prepare chemical solutions needed in chemical laboratories.



  
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