

B.sc. Sem-4 CO & CO'S

THE HNSB.LTD.SCIENCE COLLEGE, HIMATNAGAR

Course Name : B. Sc. Chemistry Semester : IV
PROGRAM CODE : SCIUG102
COURSE CODE : SC23MJDSCCHE401

Type of course : Major Discipline Specific course
Name of course : Basic chemistry III

Total Marks : 100

Effective from June 2023 Under NEP 2020 (Start from - 2024-25)

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

Course Objectives:

1. To have knowledge on noble gases and their uses..
2. To understand chemistry of aminoacids and peptides and their application.
3. To study about polycyclic aromatic-hydrocarbons and their relevant reactions.
4. To know about the role of ionic equilibrium in electrochemistry.

Course Outcome:

1. Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in 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 conductometric titrations and calculations for estimation of components in mixtures.



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THE HNSB.LTD.SCIENCE COLLEGE, HIMATNAGAR

Course Name : B. Sc. Chemistry Semester : IV
PROGRAM CODE : SCIUG102
COURSE CODE : SC23MJDSSCHE401A

Type of course : Major Discipline Specific course
Name of course : Basic Chemistry IV

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 inner transition metal complexes.
2. To understand acid base organic chemistry i.e. resonance, inductive effect etc. and their explanations.
3. To study about the phase rule and types of reactions phase reactions.
4. To know about the colorimetry and spectrophotometry for various applications.

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 analytical tools like spectrophotometry for industrial practical applications.



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Program Name : B. Sc. Chemistry Semester : IV
PROGRAM CODE : SCIUG102
COURSE CODE : SC23PMJDSCCHE401

Type of Course : Practicals Major Discipline Specific Course PMJDSC
Name of Course : Practical's for Basic chemistry II

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
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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
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Course Objectives:

1. To identify the organic components.
2. Preparation of solutions and for various estimations.

Course Outcomes:

1. Students will gain a comprehensive knowledge and skills in organic separations for carrying out reactions.
2. To understand basic methods to identify the compounds on the basis complexometric titrations.



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Course Name : B. Sc. Chemistry Semester : IV
PROGRAM CODE : SCIUG102
COURSE CODE : SC23MIDSCCHE402

Type of course : Minor Elective course MIDSC
Name of course : Simplified chemistry I

Total Marks : 50

Effective from June 2023 Under NEP 2020

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

Course Objectives:

1. To understand the core concepts of electrochemistry.
2. To understand role of electrodes and their applications.

Course Outcome:

1. Students will have a firm foundation in the fundamentals and application of electrochemistry and scientific theories applicable to 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 practicals related to generation of current.



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Program Name : B. Sc. Chemistry Semester : IV
PROGRAM CODE : SCIUG102
COURSE CODE : SC23PMIDSCHE402

Type of Course : Practicals Minor (Elective) Discipline Specific Course PMIDSC
Name of Course : Practical's for simplified 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 learn complexometric titrations.
2. Preparation of solutions and required standardization.

Course Outcomes:

1. Students will gain a comprehensive knowledge and skills in standardization and preparation of solutions for carrying out complexometric titrations.
2. To understand basic methods to estimate the metal ions on the basis of complexation with ligands.



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Program Name : B. Sc. Chemistry Semester IV

PROGRAM CODE: SCIUG102

COURSE CODE: SC23VACCHE405

Type of course : Value Added Course VAC

Name of course : Bhartiya Science and Technology

Total Mark : 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 importance Bhartiya science and technology
2. To have knowledge about contribution of Bhartiya science and technology.
3. To know about great mathematicians to our culture.

Course Outcome:

1. Students will gain a comprehensive knowledge of Bhartiya science and technology.
2. To raise awareness among students about Bhartiya science and technology.
3. Students will develop faith and honor about our culture.




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Program Name : B. Sc. Chemistry Semester : IV
PROGRAM CODE : SCIUG102
COURSE CODE: SC23SECHE406

Type of course : Skill Enhancement course SEC
Name of course : Green chemistry

Effective from June 2023 Under NEP 2020

Total Credits : 02	Teaching Hours per Week: 02 Teaching hours per semester: 30	Theory Mark: 50	External 25 Marks Internal 25 Marks
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Course Objectives:

1. To understand importance of taking precautions in study of Chemical reactions in greener way.
2. To have knowledge of lab wastage and save the chemicals.
3. To know about designing green synthesis .

Course Outcome:

1. Students will gain a comprehensive knowledge and skills in assessing laboratory reagents and use of them in greener ways.
2. To understand the importance of cost of chemicals, environment protection and safety in performing green experiments.
3. Students will learn how to use chemicals in greener ways and makngichemical laboratories.




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Program Name : B. Sc. Chemistry
PROGRAM CODE : SCIUG102
COURSE CODE: SC23SECCH406A
Type of course : Skill Enhancement course SEC
Name of course : Ceramics

Semester : IV

Total Mark: 50

Effective from June 2023 Under NEP 2020

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

Course Objectives:

1. To understand importance of ceramics used in day today life
2. To have knowledge of basic of raw materials used in ceramic industry.
3. To know about primary and secondary kilns needed for ceramic manufacture.

Course Outcome:

1. Students will gain a comprehensive knowledge and skills in assessing laboratory testing needed for ceramic industry.
2. To understand the importance ceramics for practical utility
3. Students will opt for ceramic industry as career.



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