



**B.Sc.Honours &
B.Sc.Honours with Research
COURSE OUTCOME
CALENDAR**

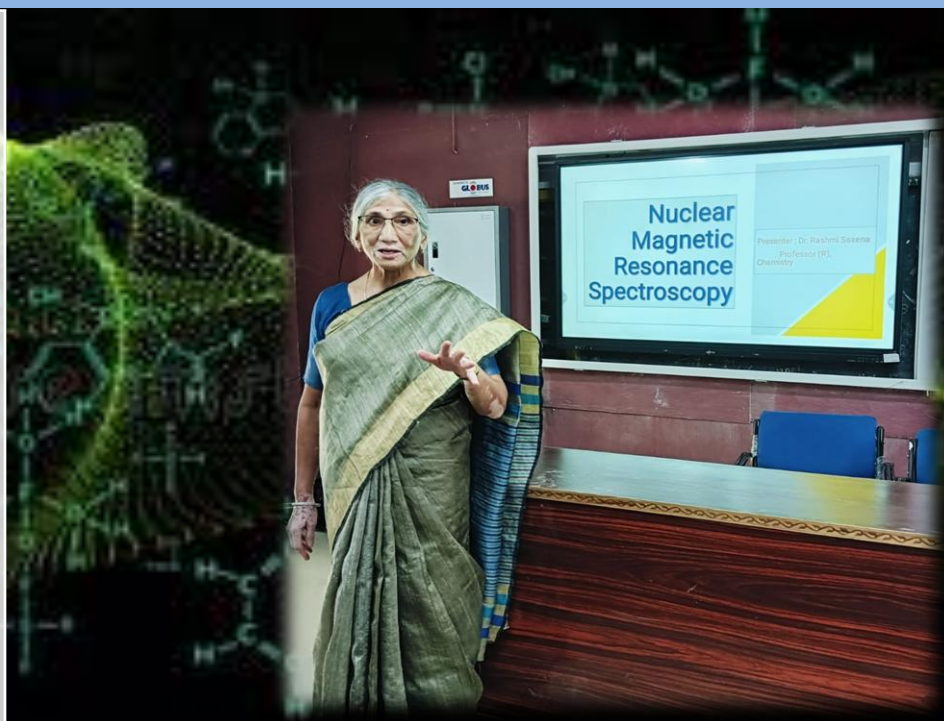
SESSION 2024-25

**DEPARTMENT OF CHEMISTRY
GOVT. M. H. COLLEGE OF HOME SCIENCE AND SCIENCE
FOR WOMEN, JABALPUR**

COURSE OUTCOMES

CORE COURSE PAPER 1 GROUP THEORY & SPECTROSCOPY

B. Sc. Honours / Research



CORE COURSE PAPER 1 GROUP THEORY & SPECTROSCOPY

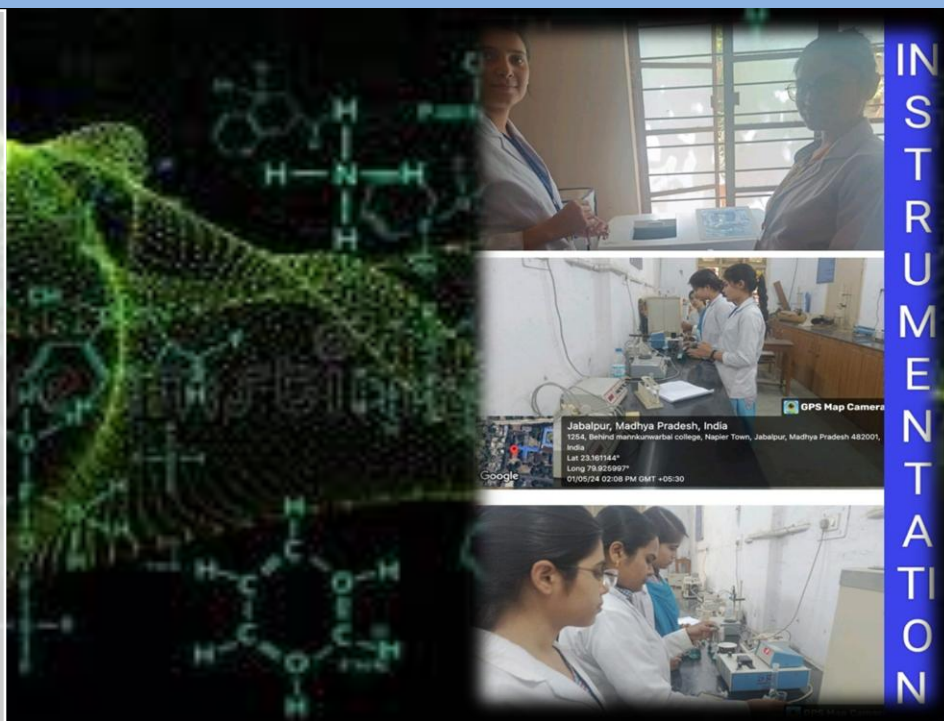
By the end of this course students will acquire the knowledge of following aspects of group theory & spectroscopy:

- ✓ Symmetry and group theory in chemistry and its applications.
- ✓ Character table and point groups.
- ✓ Fundamental principles of spectroscopy
- ✓ Microwave, EPR and Mössbauer spectroscopy and their application.
- ✓ NMR spectroscopy and MASS Spectrometry.
- ✓ Identification and structure determination of different molecules using various spectroscopic techniques.

COURSE OUTCOMES

CORE COURSE PAPER I PRACTICAL GROUP THEORY & SPECTROSCOPY

B. Sc. Honours / Research



CORE COURSE PAPER I PRACTICAL: S4 CHEM 1P GROUP THEORY & SPECTROSCOPY

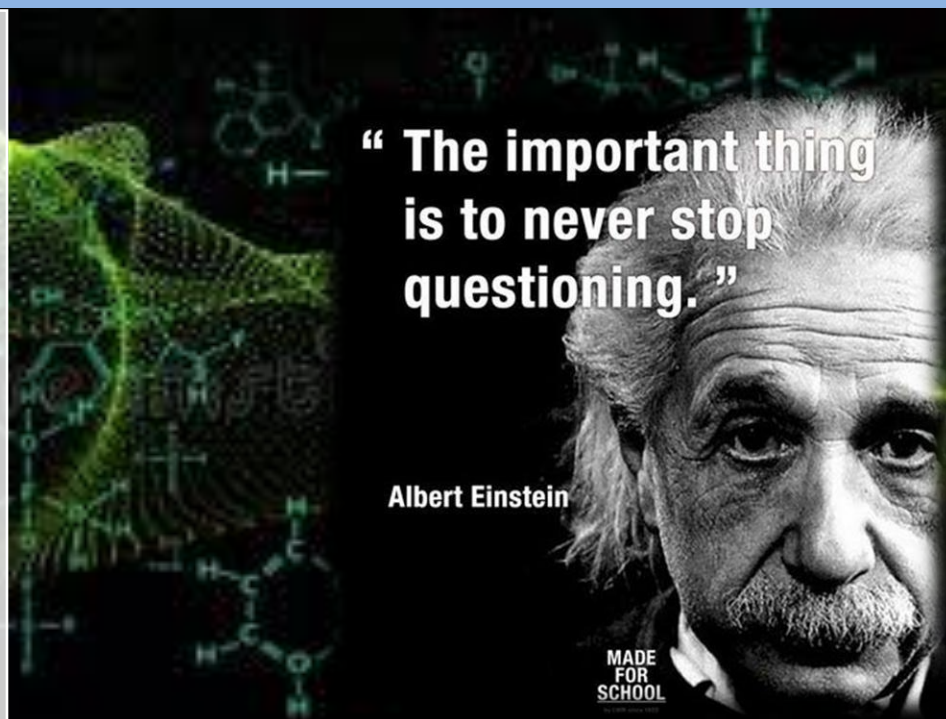
By the end of this course students will acquire the knowledge of following practical aspects of group theory and spectroscopy:

- ✓ Point group determination.
- ✓ Interpretation of molecules using IR, NMR, Mass and UV-Visible spectra.
- ✓ Calculation of max by Woodward-Fieser rule.
- ✓ Coupling constant calculation.

COURSE OUTCOMES

CORE COURSE PAPER II
ADVANCED INORGANIC & PHYSICAL CHEMISTRY

B. Sc. Honours / Research



CORE COURSE PAPER II: S4-CHEM2T

ADVANCED INORGANIC & PHYSICAL CHEMISTRY

By the end of this course students will acquire the knowledge of following aspects of advanced inorganic & physical chemistry:

- ✓ Students will learn Indigenous Chemical Technologies in India
- ✓ Inorganic Reaction Mechanism.
- ✓ Crystal structure of solids
- ✓ Classical & Statistical Thermodynamics

COURSE OUTCOMES

CORE COURSE PAPER II PRACTICAL
ADVANCED INORGANIC & PHYSICAL CHEMISTRY

B. Sc. Honours / Research



CORE COURSE PAPER II PRACTICAL: S4-CHEM2P ADVANCED INORGANIC & PHYSICAL CHEMISTRY

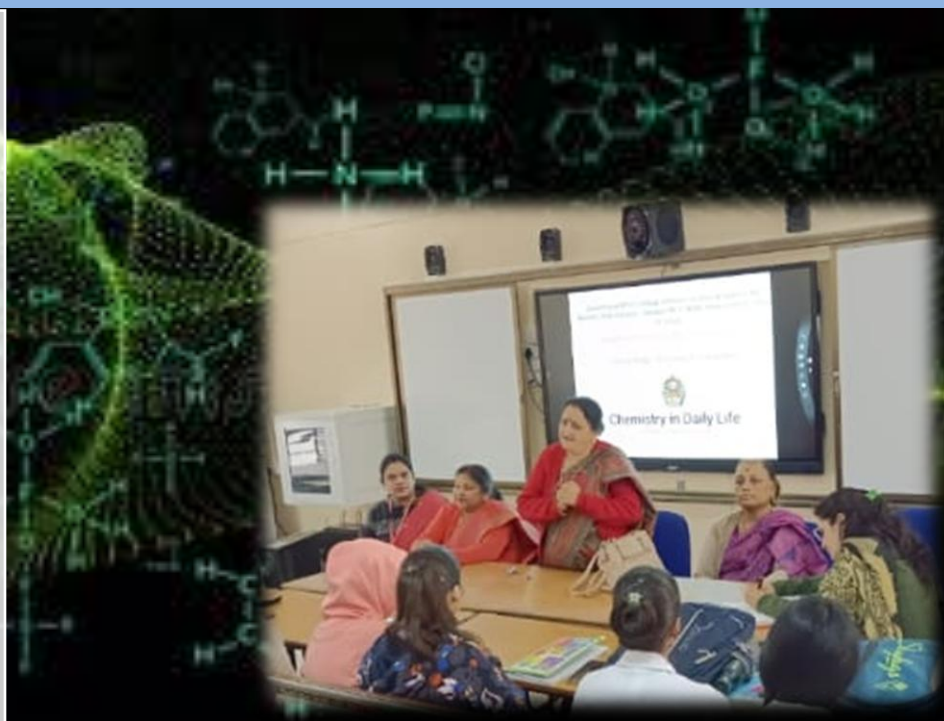
By the end of this course students will acquire the knowledge of following aspects of advanced inorganic & physical chemistry:

- ✓ To Prepare the Complexes.
- ✓ To Determine the Stability Constant of given complexes.
- ✓ To Estimate the Ni-Zn, Cu-Ni from given mixture.
- ✓ Determination of phase diagram of the following three component systems.
- ✓ Determination of the solubility of the given sparingly soluble salt by conductance measurements.
- ✓ Ionic strength of the media on the velocity constant of hydrolysis of an ester/ionic reactions

COURSE OUTCOMES

CORE COURSE DSE PAPER 1 CHEMISTRY OF NATURAL PRODUCTS

B. Sc. Honours / Research



CORE COURSE DISCIPLINE SPECIFIC ELECTIVE (DSE) PAPER 1 CHEMISTRY OF NATURAL PRODUCTS & ORGANIC SYNTHESIS

By the end of this course students will acquire the knowledge of following aspects of :

- ✓ Introduction and classification of Alkaloids.
- ✓ Introduction and classification of Terpenoids.
- ✓ Synthesis of peptides by Merrifield solid phase synthesis
- ✓ Structure of RNA, DNA and nucleic acids
- ✓ Classification and properties of Lipids
- ✓ Classification, Structure elucidation of steroids
- ✓ Formation C-C, C=C single and double bonds
- ✓ Disconnection Approach

COURSE OUTCOMES

CORE COURSE DSE PAPER 2 **CHEMISTRY OF NOVEL MATERIALS & POLYMERS**

B. Sc. Honours / Research



CORE COURSE DISCIPLINE SPECIFIC ELECTIVE (DSE) PAPER 2 **CHEMISTRY OF NOVEL MATERIALS & POLYMERS**

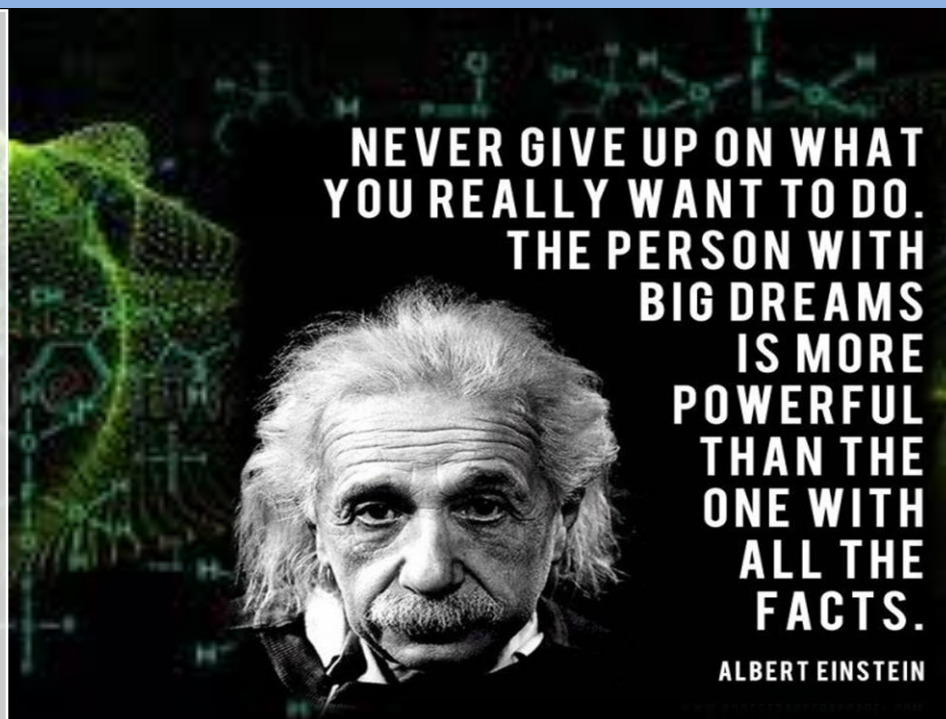
By the end of this course students will acquire the knowledge of following aspects of:

- ✓ Chemistry of nonmaterial's and nanoparticles.
- ✓ Structure, morphology and characterization of nanoparticles using various modern techniques.
- ✓ Basic concepts of polymers.
- ✓ Properties of some specific polymers
- ✓ Synthesis and characterization of polymers

COURSE OUTCOMES

**COMPULSORY PAPER
RESEARCH METHODOLOGY**

B. Sc. Honours / Research



COMPULSORY PAPER: X4-AREMIT RESEARCH METHODOLOGY

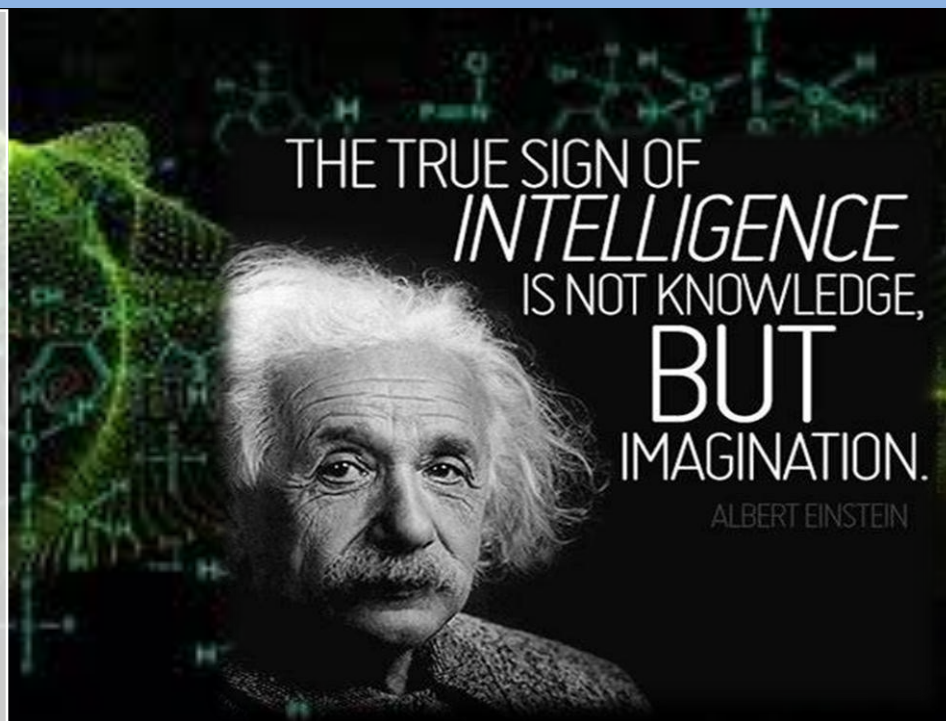
By the end of this course students will learn the following aspects of research methodology:

- ✓ Understand various kinds of research, objectives of doing research, research process, research designs and sampling.
- ✓ Identify and discuss the issues and concepts salient to the research process.
- ✓ Recognize the complex issues inherent in selecting a research problem, selecting an appropriate research design, and implementing a research project.
- ✓ Discuss the concepts and procedures of sampling and data collection.
- ✓ Aware of hypothesis testing procedures.

COURSE OUTCOMES

**SUBJECT SPECIFIC
RESEARCH METHODOLOGY**

B. Sc. Honours with Research



SUBJECT SPECIFIC PAPER: S4-CHEM1M

RESEARCH METHODOLOGY

By the end of this course students will learn the following aspects of research methodology:

- ✓ To study this course, a student must have passed a degree or equivalent course in Chemistry as a subject.
- ✓ By the end of this course students will acquire the knowledge of following aspects of Research Methodology:
 - ✓ Various concepts of research and data collection.
 - ✓ Knowledge of research and publication ethics.
 - ✓ Able to check Plagiarism using various tools and as well as copy right.
 - ✓ Able to known computer based calculation, programming and paper writing.
 - ✓ Materials Characterization and instrumentation.