

DEPARTMENT OF CHEMISTRY (PG Organic) New syllabus effective from June 2019
M.Sc. Sem-1 & 2 (2021-2022)

Programme Outcomes	Main outcomes of the programme is students will gains complete knowledge about all fundamental aspects of all the discipline of chemistry like industrial chemistry, medicinal chemistry, spectroscopy etc. Students understand the basic concepts, fundamental principals & the scientific knowledge related to different scientific phenomena and their relevancies in the everyday life.
Programme Specific Outcomes	At the completion of the M.Sc. Chemistry programme, the students will be able to work in the pure interdisciplinary & multidisciplinary areas and research areas of chemistry & its applications.
Course	Course Outcomes
CHNN : 401	To enable the students to learn concept of stereochemistry & bonding, Metal-ligands equilibrium, Reaction mechanism of transition metal complexes & also bonding in metal-ligand complexes.
CHNN : 402	Students will acquire knowledge of types of bonding in organic molecules, stereochemistry of different compounds, Reaction mechanism of carbocation, free radicals, carbenes, nitrenes as well as mechanism of SN^1 , SN^2 , mixed SN^1 , SN^2 , SET and SN. As well as students also acquire knowledge of different types of free radical reactions.
CHNN : 403	Students will gain knowledge of Quantum chemistry as well as different types of Thermodynamics like classical, statistical and Non-equilibrium thermodynamics.
CHNN : 404	To acquaint knowledge of symmetry elements and symmetry operations, Group theory & its application of molecular vibrations, interpretation of IR and Raman activity, Unifying Principles & moss – Bauer spectroscopy
CHNN: 405(C) (Elective)	Students will gain knowledge of C^{13} NMR & Mass spectroscopy.
CHNN : 406 (Practical-1)	Student will enable about the practical knowledge of Inorganic qualitative analysis with less common metal ions, Synthesis & purification of different organic compounds. As well as students will gain knowledge of determination of hydroxyl, amine and phenol group in an organic compounds, saponification and iodine value and COD of water.
CHNN:407 (Practical-2)	Students will update with the knowledge error and statistical data analysis, practical knowledge of instrumental analysis, chemical kinetics, as well as adsorption study.
CHNN : 501	To enable the students to learn concept of electronic spectra & magnetic properties of transition metal complexes, metal pie complexes, metal clusters & organo metallic compounds of transition metals
CHNN : 502	Students will able to gain knowledge of Aliphatic, aromatic electrophilic and aromatic nucleophilic substitution reactions. Addition to Carbon-carbon and carbon-Hetero multiple bonds, different kinds of pericyclic reactions, various types of sigma tropic rearrangement and also E_1 , E_2 , E_{1cb} mechanism and pyrolytic elimination.
CHNN : 503	Students will enable to acquire the knowledge of chemical dynamics, knowledge of surface chemistry like adsorption, macromolecules as well as about knowledge of electrochemistry
CHNN: 504	Students will update about the knowledge of various types of spectroscopy like atomic, molecular, Raman, Microwave and NMR spectroscopy
CHNN : 505-B (Elective)	Students will update with the knowledge of bio-inorganic and supra molecular chemistry.
CHNN : 506 (Practical-1)	Students will gain and understanding the knowledge of Separation and determination of two metal ions, paper, column and ion exchange chromatography, students will able with the knowledge of various inorganic syntheses, Purification and identification of compounds of trinary mixtures.
CHNN : 507 (Practical-2)	Students will update with the practical knowledge of instrumental analysis, practical of solutions and chemical kinetics.


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