

PROGRAMME - Master in Science (Chemistry)

COURSE - PG(CHEMISTRY)

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| Programme Outcome | <ol style="list-style-type: none"> To provide basic knowledge in different areas of chemistry, Green chemistry and Nanochemistry. Fundamental knowledge is provided to students regarding the cause of water and air pollution and how to prevent them. Students get adequate exposure to practical feel like estimation of BOD, DOD and estimation of various metals. Students are equipped with various equipment used in different qualitative and quantitative experiments. Students are trained to present seminars on different topics in a smart classroom thrice in every week. | |
| Programme Specific Outcome | <ol style="list-style-type: none"> To develop the research ability among students. Students are provided with requisite knowledge, skills and the right attitude necessary to become an effective leader in the present scenario. To develop competitive spirit by organising various competitions in the department. Field visit to nearby industries like Vedanta, Ispat Alloys Limited and Emami Paper Mills. Frequent analysis of Salandi water to detect the various poisonous chemicals present in it. | |
| Course Outcome | CC - 101 | Upon successful completion of inorganic chemistry, the students will be able to know the reaction mechanism of transition metal complexes and metal-ligand bonding. |
| | CC - 102 | Upon successful completion of organic chemistry, the students will be able to know about aliphatic nucleophilic substitution, aromatic nucleophilic substitution, aromatic electrophilic substitution and free radical elimination reactions. |
| | CC - 103 | Upon successful completion of physical chemistry-I, students will be enriched with Quantum chemistry, Electronic structure of atoms, Classical thermodynamics and Statistical thermodynamics. |
| | CC - 104 | Upon successful completion of organic spectroscopy, students are able to get knowledge about Ultraviolet, Visible, Infrared, Mass and NMR spectroscopy. |
| | CC - 105 | This paper includes practical work in the laboratory in which students have to identify qualitatively different radicals present in the inorganic mixture which helps them in future research activity. |
| | CC - 201 | This paper includes inorganic chemistry-II in which students get knowledge about stereochemistry and bonding in main group compounds, metal-ligand pi complexes, symmetry and group theory, electronic spectra and magnetic properties of transition metal complexes. |
| | CC - 202 | This paper includes organic chemistry-II in which students get knowledge about the nature of bonding in organic molecules, pericyclic reactions, oxidation and reduction in organic compounds as well as stereochemistry in organic compounds |

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| CC - 203 | This paper includes physical chemistry-II in which students are taught regarding phase diagrams, chemical dynamics, electrochemistry, surface chemistry etc which helps them in future research activities. |
| CC - 204 | This paper includes analytical chemistry in which students analyse various compounds by thermal analysis, spectroscopic analysis and chromatographic analysis methods which help them in future for various research activities. |
| CC - 205 | This paper includes practical in organic chemistry in which students have to synthesise various organic compounds like anthranilic acid, methyl orange, adipic acid, cinnamic acid, Indigo etc., in the laboratory. |
| CC - 301 | This paper includes physical spectroscopy in which students get knowledge about Rotational, Vibrational, Electronic and Raman spectroscopy as well as instrumental methods of analysis which help them in future research work to a greater extent. |
| CC - 302 | This paper includes organic chemistry-III in which students are taught photochemical reactions, photochemistry of alkenes and carbonyl compounds, asymmetric synthesis and rearrangement reactions which help them to a greater extent during organic conversation. |
| CC - 303 | This paper includes bioinorganic chemistry and supramolecular chemistry in which students get knowledge about the role of metals in medicine, enzymes exploiting acid catalysis and biological roles of metal ions, biomimetic chemistry etc. |
| CC - 304 | This paper includes solid state chemistry in which students are taught solid state reactions, defects in solids and optical properties of solid. |
| CC - 305 | This paper includes the practical in physical chemistry in which students determine the rate constant of various types of reactions, critical solution temperature of various types of binary and ternary solvent mixtures. |
| CC - 401 | This paper includes environmental and analytical chemistry in which students get knowledge about the cause of environmental pollution, how to analyse them and how to prevent environmental pollution like water, air and sound pollution. |
| CC - 402 | This paper includes polymer chemistry in which students get knowledge about the classification and structure of polymers, properties and uses of polymer and synthesis of polymers. |
| CC - 403 | This paper includes organic synthesis and biomolecules in which students are taught about the disconnection approach, how to synthesise some complex organic molecules and biomolecules. |
| CC - 404 | This paper includes practical in organic and inorganic chemistry in which the students have to identify unknown organic compounds and how to separate and purify the organic compounds. |
| CC - 405 | This paper includes project work by students in which the collect data by visiting the nearby industries, municipalities, block officers, RWSS offices etc., and submit the project report. |

PROGRAMME - Master in Science (Applied Chemistry)

COURSE - PG(APPLIED CHEMISTRY)

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| Programme Specific Outcome | <ol style="list-style-type: none"> 1. To develop the research ability among students. 2. Students are provided with requisite knowledge, skills and the right attitude necessary to become an effective leader in the present scenario. 3. To develop competitive spirit by organising various competitions in the department. 4. Field visit to nearby industries like Vedanta, Ispat Alloys Limited and Emami Paper Mills. 5. Frequent analysis of Salandi water to detect the various poisonous chemicals present in it. | |
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| | CC - 104 | Upon successful completion of organic spectroscopy, students are able to get knowledge about Ultraviolet, Visible, Infrared, Mass and NMR spectroscopy. |
| | CC - 105 | This paper includes practical work in the laboratory in which students have to identify qualitatively different radicals present in the inorganic mixture which helps them in future research activity. |
| | CC - 201 | This paper includes inorganic chemistry-II in which students get knowledge about stereochemistry and bonding in main group compounds, metal-ligand pi complexes, symmetry and group theory, electronic spectra and magnetic properties of transition metal complexes. |
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