

## M.Sc. in Chemistry

Course Code	Course Name	Course Outcome
CEM101	Physical chemistry I	Vast knowledge about quantum mechanics, statistical thermodynamics. Conceptual idea about principal of molecular spectroscopy
CEM102	Organic Chemistry I	A vast knowledge about organic reagents, synthesis, transformation and retrosynthesis. Special information about aldehydes and ketones
CEM103	Inorganic Chemistry I	First step information about group theory and a vast conceptual knowledge of solid state, crystallography and bioinorganic chemistry.
CEM104	Food Processing and preservation and computer basics	preliminary idea about food constituent and food pigments and knowledge about food microbiology and food preservation. Introductory knowledge about computer
CEM195	Inorganic Chemistry practical	practical knowledge about gravimetric estimation of metal ions.
CEM196	Food preservation practical	Preparation knowledge about jams and jellies with preservatives.
CEM201	Physical chemistry II	Vast knowledge about quantum mechanics, chemical kinetics, electrochemistry and molecular spectroscopy
CEM202	Organic Chemistry II	Vast knowledge about organic reagents, retro synthesis, and pericyclic reaction. Conceptual idea about stereochemistry.
CEM203	Inorganic Chemistry II	Knowledge about group theory, organometallic compounds preparation application, and p, d block elements chemistry.
CEM204	Nanotechnology principle and practical	A conceptual idea about the nano technology principle and practical knowledge related to this.
CEM295	Organic chemistry Practical	Practical idea about boiling point determination, use of TLC, and <sup>1</sup> H, <sup>13</sup> C NMR to identify an organic compounds and some organic compounds preparation.
CEM296	Physical chemistry practical	practical knowledge about the determination of standard potential, dissociation constant, rate constant, CMC of a surfactant liquid, composition of complex. Practical experience about fluorescence quenching.
CEM301	Advance spectroscopy-I	Vast knowledge about photophysical process, laser and its application, EPR, PES and NQR spectroscopy.
CEM302	Advanced physical chemistry I	Vast knowledge about Stationary perturbation theory, quantum mechanics and semiclassical treatment of radiation matter interaction
CEM303	Advance physical chemistry II	A deep knowledge about solid state chemistry, statistical mechanics and nonequilibrium thermodynamics.
CEM302	Advance Inorganic Chemistry I	A deep knowledge about Organometallic chemistry and catalysis and chemical application of group theory.
CEM303	Advance Inorganic Chemistry II	Gathering of a lot of knowledge about bioinorganic chemistry and inorganic photochemistry
CEM302	Advanced organic Chemistry I	A deep knowledge about Organometallic chemistry and catalysis and chemical application of group theory.

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<b>CEM303</b>	Advanced organic Chemistry II	a knowledge of bioorganic chemistry, supramolecular chemistry, nucleic acid and green chemistry.
<b>C-CEM304</b>	Introduction to Pharmaceutical chemistry	concept of knowledge about definition and classification of drugs, an idea about antimalaria drug.
<b>CEM395</b>	Chemistry Project II	First step knowledge of chemistry research through project.
<b>CEM401</b>	Advanced spectroscopy II	A broad idea about NMR, mass, UV, IR spectroscopy.
<b>CEM402</b>	Advance physical chemistry III	A lots of knowledge about atomic spectroscopy, and application of perturbation theory.
<b>CEM403</b>	Advance physical chemistry IV	A knowledge about chemical kinetics, macromolecules, biopolymers and electrochemistry.
<b>CEM404</b>	Chemistry in Technology	knowledge about structure and function of biomolecules, practical uses of electron microscopy, CD, fluorescence microscopy, and going to familiar with corrosion technology
<b>CEM402</b>	Advanced inorganic Chemistry III	A deep knowledge about magnetometistry and metal carbonyl and clusture.
<b>CEM403</b>	Advanced inorganic Chemistry IV	knowledge about inorganic reaction mechanism, basic principle of CV and coulometry
<b>CEM404</b>	Chemistry in Technology	knowledge about structure and function of biomolecules, practical uses of electron microscopy, CD, fluorescence microscopy, and going to familiar with corrosion technology
<b>CEM402</b>	Advanced Organic Chemistry III	Knowledge about organic photochemistry, property of some biological active molecules, vitamins and coenzymes.
<b>CEM403</b>	Advanced organic chemistry IV	A large knowledge about stereochemistry
<b>CEM404</b>	Chemical principles in food science and technology	A concept developed about science and technology of diary processing, cereal processing, fats and oil processing, quality control and food sefty.
<b>CEM495</b>	Chemistry Project II	First learning of chemical research