


CURRICULUM AND ITS RELEVANCE TO LOCAL /NATIONAL /REGIONAL/GLOBAL NEEDS

M.Sc. Chemistry Course Details

Sr. No	Paper Code	Paper Name	Local/Regional/National/Global	Description need for student
1	MSCCH E-101	INORGANIC CHEMISTRY-1	National	Covers periodic properties and bonding. Includes transition metals and their coordination chemistry.
2	MSCCH E-102	ORGANIC CHEMISTRY-1	National	Explores reaction mechanisms in organic chemistry. Covers stereochemistry and functional group transformations.
3	MSCCH E-103	PHYSICAL CHEMISTRY-1	National	Introduces thermodynamics and kinetics. Discusses molecular interactions and quantum mechanics basics.
4	MSCCH E-PR-01	PRACTICAL-1	National	Lab experiments covering inorganic, organic, and physical chemistry. Focuses on synthesis and analytical techniques.
5	MSCCH	ANALYTICAL	National	Covers classical




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	E-201	CHEMISTRY		and instrumental analysis techniques. Includes chromatography, spectroscopy, and titrations.
6	MSCCH E-202	GROUP THEORY & SPECTROSCOPY	National	Explores molecular symmetry and group theory. Discusses applications in spectroscopy and quantum chemistry.
7	MSCCH E-203	PHYSICAL CHEMISTRY-2	National	Covers electrochemistry and surface chemistry. Discusses catalysis and advanced thermodynamics.
8	MSCCH E-PR-02	PRACTICAL-2	National	Advanced laboratory techniques in spectroscopy and chromatography. Focus on quantitative analysis.
9	MSCCH E-301	APPLICATIONS OF SPECTROSCOPY	National	Studies spectroscopic techniques like NMR, IR, and UV. Applications in structural determination.
10	MSCCH E-302	ENVIRONMENTAL CHEMISTRY	Global	Focuses on pollution control and green chemistry. Covers climate change and sustainable practices.



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11	MSCCH E-303	BIO- CHEMISTRY	National	Explores biomolecules like proteins and nucleic acids. Discusses enzymatic reactions and metabolism.
12	MSCCH E-PR-03	PRACTICAL-3	National	Hands-on experiments in biochemistry and environmental chemistry. Focus on analytical techniques.
13	MSCCH E-401A	PHYSICAL CHEMISTRY - III	National	Covers statistical mechanics and molecular simulations. Includes quantum mechanics applications.
14	MSCCH E-402A	PHYSICAL CHEMISTRY - IV	National	Studies photochemistry and solid-state chemistry. Includes spectroscopy and reaction dynamics.
15	MSCCH E-403A	PROJECT WORK	National	Research-based project in chemistry. Develops problem-solving and analytical skills.
16	MSCCH E-PR-04A	PRACTICAL-4A	National	Lab experiments on advanced physical chemistry concepts. Includes surface and colloidal chemistry.
17	MSCCH	INORGANIC	National	Studies



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	E-401B	CHEMISTRY-II		coordination chemistry and organometallics. Applications in catalysis and bioinorganic chemistry.
18	MSCCH E-402B	INORGANIC CHEMISTRY - III	National	Covers lanthanides, actinides, and solid-state chemistry. Discusses advanced inorganic materials.
19	MSCCH E-403B	PROJECT WORK	National	Independent research on inorganic chemistry. Develops experimental and analytical skills.
20	MSCCH E-PR-04B	PRACTICAL-4B	National	Hands-on experiments in inorganic chemistry. Includes synthesis and characterization techniques.
21	MSCCH E-401C	ORGANIC CHEMISTRY -II	National	Discusses pericyclic and photochemical reactions. Covers advanced synthetic strategies.
22	MSCCH E-402C	ORGANIC CHEMISTRY - III	National	Explores natural products and heterocyclic chemistry. Applications in pharmaceuticals and materials science.



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23	MSCCH E-403C	PROJECT WORK	National	Research-based work in organic chemistry. Focus on modern synthetic methods.
24	MSCCH E-PR- 04C	PRACTICAL- 4C	National	Lab-based experiments in organic synthesis. Includes isolation and purification techniques.



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