

List of Courses having focus on local, national, regional and global developmental needs offered by the M.Sc Chemistry

M.Sc CHEMISTRY						
Programme: M.Sc., Chemistry				Year: 2023-2025		
Course Code	Course Title	Need				Rationale
		Local	National	Regional	Global	
23PCY101	Core –I- Inorganic Chemistry I-Solid state and Nuclear Chemistry		✓	✓		Smart materials/ Competitive examination like, SET/NET/GATE/ JAM/ TNPSC/ novel energy material synthesis
23PCY102	Core– II- Organic Chemistry I-Organic Reaction Mechanisms		✓	✓	✓	New innovative compounds can be synthesized by using the mechanisms like antiviral, anti-cancer drugs
23PCY103	Core– III- Physical Chemistry –I- Group Theory and Chemical Kinetics		✓	✓		Competitive exams, rate of the reaction are useful for studying the reaction.
23PCY204	Core– IV- Inorganic Chemistry –II- Coordination Chemistry			✓	✓	Various types of electron transfer mechanism of metal complexes and their importance.
23PCY205	Core– V- Organic Chemistry-II –Organic Reactions and Stereochemistry		✓	✓		Stereo specific and regio selective drugs can be synthesized, Pharmaceutical importance
23PCY206	Core– VI-Physical Chemistry-II – Quantum Chemistry and Nano Chemistry		✓	✓		Competitive exams/scientific computation of molecular energy /simulation/docking/ molecular modelling studies / energy materials/ corrosion control
	Major Elective –I	✓	✓	✓	✓	Greener methods and nanoscale materials can be



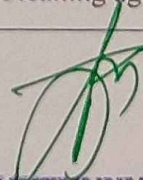
23PCY2E1	* Green Chemistry, Research					prepared with enormous energy efficient devices and battery materials, semiconductors, solar cells/ current needs/
23PCY2E2	Methodology & Cyber					
23PCY2E3	Security * Electrochemistry * Advanced Polymeric Materials					
23PCY2N1	*Non Major Elective-I Chemistry in day to day life	✓	✓	✓		Test the various forms of drugs, cosmetics and milk products in day to day life.
23PCY207	Core- VII- Inorganic Chemistry Practical -I		✓	✓	✓	New skills are helpful to improve the efficiency and manage time during newer materials preparation
23PCY208	Core- VIII- Organic Chemistry Practical -I		✓	✓	✓	
23PCY209	Core- IX- Physical Chemistry Practical -I		✓	✓	✓	
23PCY310	Core-X- Organic Chemistry - III- Natural Products and Organic Reagents	✓	✓	✓	✓	Competitive exams/ preparation of relevant drugs using natural products by semi synthetic path way/ isolation of phytochemicals.
23PCY311	Core-XI- Physical Chemistry -III - Classical and Statistical Thermodynamics		✓	✓	✓	Helpful to know the mechanism of automobiles and its efficiency/ petrochemicals
23PCY312	Core-XII- Organic Spectroscopy	✓	✓	✓	✓	Helpful to characterize the structures of newly prepared inorganic and organic materials
23PCY3E4 23PCY3E5	Major Elective -II * Organometallic Chemistry * Material Science	✓	✓	✓	✓	Helpful to reduction of various pollutants, and increase the efficiency of newer materials as prepared




Dr. R. MUTHUKUMARAN,
 P.M.A., M.Phil., B.Ed., Ph.D.,
 PRINCIPAL
 N.G.M. College, Pollachi - 642 001
 Coimbatore District

23PCY3E6	*Dye chemistry					
23PCY413	Core XIII-Inorganic Chemistry –III- Bioinorganic Chemistry		✓	✓	✓	Competitive exams/ greener synthesis/ medicinal applications/ catalyst/ role metals in biological systems.
23PCY414	Core XIV- Instrumental Methods of Chemical Analysis			✓	✓	Basic principle, instrumentation and applications of various chromatographic techniques, thermal analysis.
23PCY4E7	Major Elective –III * Phytochemical Techniques and Health Chemistry	✓	✓	✓	✓	Drugs and their structure activity relationship will help to know the mechanism of action of newer drugs/ scientific computation of molecular energy / simulation/docking/ molecular modelling studies / smart materials.
23PCY4E8	*Computational chemistry					
23PCY4E9	* Green Chemistry					
23PCY415	Core XV-Inorganic Chemistry Practical – II		✓	✓		New skills are helpful to improve the efficiency and manage time during newer materials preparation
23PCY416	Core XVI-Organic Chemistry Practical – II		✓	✓		
23PCY417	Core XVII- Core Physical Chemistry Practical –II		✓	✓		
23PCY4P1	Core Project Work & viva voce	✓	✓	✓	✓	Helps to identify the potential of students as scientist and chemists/ able to develop and design next generation materials for benefit of society.
23PCY2VA	Value Added Course – I	✓	✓	✓	✓	The different exposure of chemicals used in day to day life such as Cleaning agents, surfactants and




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 PRINCIPAL
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	Entrepreneurial Ventures in Chemistry					Insect repellent one can design and practice ecofriendly cosmetics of their own.
23PCY4VA	Value Added Course – II Biofuels and Energy Storage Devices	✓	✓	✓	✓	To expertise in current trends in batteries and energy storage devices.
23PCYCFC 01	Certificate Course – I Fundamentals of Pharmaceutical Chemistry	✓	✓	✓	✓	Pharma related products/ Drugs and their structure activity relationship will help to know the mechanism of action of newer drugs.

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Dr. R. POONKODI

HEAD

DEPARTMENT OF CHEMISTRY (SF)
N.G.M. COLLEGE, POLLACHI

PRINCIPAL




Dr. R. MUTHUKUMARAN,
M.A., M.Phil., B.Ed., Ph.D.,
PRINCIPAL
N.G.M. College, Pollachi - 642 001
Coimbatore District