



**SARDAR PATEL UNIVERSITY**  
**Vallabh Vidyanagar, Gujarat**  
**(Reaccredited with 'A' Grade by NAAC (CGPA 3.25))**  
**Syllabus with effect from the Academic Year 2022-2023**

**PROGRAMME STRUCTURE**  
**Master of Science in Chemistry**  
**MSc (Inorganic Chemistry) Semester: III**

<p>Programme Outcome (PO) - For MSc Chemistry Programme</p>	<p>Master of Science program provides extended theoretical and practical knowledge of different science subjects. Master of Science programme at Sardar Patel University is designed keeping the overall back ground preparation in mind for the student to either seek a job or to become an entrepreneur. The students, after completion of Bachelor of Science can select the master's programme in the subject they have had at the final year or in a related discipline (depending upon eligibility criteria prescribed by university).</p> <p><b>Programme outcomes: At the end of the program, the students will be able to</b></p> <ol style="list-style-type: none"><li>1. Have a deep understanding of both the theoretical and practical concepts in the respective subject.</li><li>2. Understand laboratory processes and use scientific equipments and work independently.</li><li>3. Develop research temperament as a consequence of their theory and practical learning.</li><li>4. Communicate scientific information in oral and written form.</li><li>5. Understand the issues related to nature and environmental contexts and think rationally for sustainable development.</li><li>6. The students are able to handle unexpected situations by critically analyzing the problem.</li></ol>
<p>Programme Specific Outcome (PSO) - For MSc Chemistry Semester - I</p>	<p>Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Chemistry and Industrial polymer Chemistry.</p> <p>After completing M.Sc. chemistry program, students will be able to:</p> <ul style="list-style-type: none"><li>■ Demonstrate and apply the fundamental knowledge of the basic principles in various fields of Chemistry.</li><li>■ Apply knowledge to build up small scale industry for developing endogenous product.</li><li>■ Collaborate effectively on team-oriented projects in the field of chemistry or other related fields.</li><li>■ Communicate scientific information in a clear and concise manner both orally and in writing.</li><li>■ Inculcate logical thinking to address a problem and become result oriented with a positive attitude.</li><li>■ Enhance the scientific temperament among the students so as to develop a research culture and implementation of the policies to tackle the burning issues at global and local level.</li></ul>



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	<ul style="list-style-type: none"> <li>■ Apply the knowledge to develop the sustainable and eco-friendly technology.</li> <li>■ Take up global level research opportunities to pursue Ph.D programme targeted approach and specific competitive exams conducted by service commission</li> <li>■ Accept enormous job opportunities at all level of chemical industries, pharmaceutical industries and placements in R &amp; D.</li> </ul>
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To Pass	At least 40% Marks in the University Examination in each paper and 40% Marks in the aggregate of University and Internal examination in each course of Theory, Practical & 40% Marks in Viva-voce.
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Course Type	Course Code	Name of Course	Type of Course	T/P	Credit	Hours per Week	Exam Duration in hrs	Component of Marks		
								Internal	External	Total
								Total/Passing	Total/Passing	Total/Passing
Core Course	PS03CINC51	Spectroscopy - I	EM & EN	T	4	4	3	30/10	70/28	100/40
	PS03CINC52	Inorganic reactions and Reaction Mechanism	EM	T	4	4	3	30/10	70/28	100/40
	PS03CINC53	Organometallic Compounds	EM	T	4	4	3	30/10	70/28	100/40
Core Course (Any One)	PS03CINC54	Practicals <b>OR</b>	EM&SD	P	4	8	6	30/10	70/28	100/40
	PS03CINC55	Project Work	EM&SD	P	4	8		30/10	70/28	100/40
Core Course (Any One)	PS03CINC56	Practicals <b>OR</b>	EM&SD	P	4	8	6	30/10	70/28	100/40
	PS03CINC57	Project Work	EM&SD	P	4	8		30/10	70/28	100/40
Core Course	PS03CINC58	Comprehensive Viva		-	1	1			50/20	50/20
Elective Course (Any one)	PS03ECHE51	Separation methods	EM& EN	T	4	4	3	30/10	70/28	100/40
	PS03ECHE52	Analytical techniques in Materials characterization	EM& EN	T	4	4	3	30/10	70/28	100/40
	PS03ECHE53	Applications of Inorganic Chemistry in Industry	EM& EN	T	4	4	3	30/10	70/28	100/40



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	PS03ECHE54	Selected Topics in Advanced Inorganic Chemistry-I	EM&EN	T	4	4	3	30/10	70/28	100/40
	PS03ECHE55	Mechanical and Electrical Properties of Polymers	EM&EN	T	4	4	3	30/10	70/28	100/40
	PS03ECHE56	Selected Topics in Polymers-I	EM&EN	T	4	4	3	30/10	70/28	100/40
	PS03ECHE57	Advanced Characterization Techniques	EM&EN	T	4	4	3	30/10	70/28	100/40
	PS03ECHE58	Selected Topics in Physical Chemistry- II	EM&EN	T	4	4	3	30/10	70/28	100/40
	PS03ECHE59	Selected Topics in Organic Chemistry	EM&EN	T	4	4	3	30/10	70/28	100/40
	PS03ECHE60	Occupational Practices	EM&EN	T	4	4	3	30/10	70/28	100/40
					25					650
Add-on Course		MOOCs course from Swayam Portal								

EMPLOYABILITY = EM, ENTREPRENEURSHIP = EN and SKILL DEVELOPMENT = SD

\* Project work (as optional) in place of practicals; to be offered to some of the students, based on their merit, interest and placement with the teachers (Marks : 200). The project shall have to be carried out under the allotted teacher(s) and a dissertation shall be submitted and will be assessed for internal (60 marks) and external (140 marks), in the usual manner.