

**SHRI MANIBHAI VIRANI & SMT. NAVALBEN VIRANI SCIENCE
COLLEGE (AUTONOMOUS), RAJKOT
DEPARTMENT OF INDUSTRIAL CHEMISTRY
M. Sc. INDUSTRIAL CHEMISTRY**

VISION:

Empowering graduates to become leading future technocrats with innovation, research and spirituality having a solid foundation of pure sciences in conjunction with applied sciences to serve the global needs.

MISSION:

IC dept is passionate and committed to:

- To divulge the students the contemporary state of knowledge and to imbibe ethos of technocrat in rapidly emergent field of science & technology by building the foundation on fundamental sciences.
- Provide outstanding undergraduate and graduate Industrial chemistry degree programs with excellent technical and leadership skills, integrity, and social responsibility.
- Be recognized internationally as a leader in research and industrial science, creating novel and sustainable solutions to serve public interests and to address global challenges in areas such as health, energy, and environment.
- Provide rigorous and contemporary curriculum that is responsive to future developments, reflecting the interdisciplinary nature and diversity of the industrial need, thus enabling students to become successful industrialist, entrepreneurs, academicians and leaders.

OBJECTIVES OF THE PROGRAM

The Curriculum is designed to attain the following learning goals which students shall accomplish by the time of their graduation:

- To uphold the values embodied in the institute's vision and mission.
- To imparting knowledge of both pure science and engineering to support lifelong learning while maintaining high professional ethical standards
- To work in a team using common tools and environments to achieve project/organizational objectives.
- To pursue life-long learning as a means of enhancing the knowledge base and skills necessary to contribute to the improvement of their profession and community ensuring essential knowledge to pursue M.Sc. & thereafter Ph.D. degree in Industrial Chemistry in progression.

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(AUTONOMOUS), RAJKOT
Department of Industrial Chemistry
Scheme of Instruction & Examinations**

Semester-I									
Subject Code	Course	Hrs. of Instruction			Exam Duration(Hrs)	Max. Marks			Credit
		Th	Pr	Tu		CIA	SEE	Total	
Part - I									
19PICCC101	Core 1: Stoichiometry & Transport Phenomena	4	-	-	3	40	60	100	4
19PICCC102	Core 2: Industrial Unit Operations	4	-	-	3	40	60	100	4
19PICCC103	Core 3: Organic & Retro synthesis	4	-	-	3	40	60	100	4
19PICID101 / 19PICID102	DSE –ID 1: • Industrial Environment Management OR • Bioprocess Technology	4	-	-	3	50	50	100	4
19PICCC104	Core practical 1: HTO, MTO	-	6	-	6	40	60	100	3
19PICCC105	Core practical 2: OS, FM	-	6	-	6	40	60	100	3
Part - II									
19PICCE01	CEC-1 Scientific Writing	1	-	-	-	100	-	100	2
	*CEC- 2 STC/Online Courses/ Professional Certification Courses	-							-
	#Value Education for Consciousness Development	1	-	-	Remarks				-
Total		30						700	24

* Relevant Self learning Short Term Course (STC)/ Online courses/Professional Certification Courses from choice approved by AC offered in semester 1 and evaluated at the end of semester 4.
Evaluated at the end of semester-II.

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Semester-II									
Subject Code	Course	Hrs. of Instruction			Exam Duration(Hrs)	Max. Marks			Credit
		Th	Pr	Tu		CIA	SEE	Total	
Part - I									
19PICCC201	Core 4: Heterocyclic Chemistry	4	-	-	3	40	60	100	4
19PICCC202	Core 5: Mechanical Operations	3	-	-	3	50	50	100	3
19PICCC203	Core 6: Technologies in Chemical Industries	3	-	-	3	50	50	100	3
19PICCC204	Core 7: Unit Processes & Reagents	3	-	-	3	50	50	100	3
19PICID201 / 19PICID202	DSE –ID 2: • Statistical Method OR • Medicinal Chemistry	4	-	-	3	50	50	100	4
19PICCC205	Core practical 3: MO, TCI	-	6	-	6	40	60	100	3
19PICCC206	Core practical 4: MS, PC	-	6	-	6	40	60	100	3
Part - II									
	#Industrial Training	Remarks at the end of Sem-3						-	
	*CEC- 2 : STC/Online Courses/ Professional Certification Courses	-						-	
19LSVE01	Value Education for Consciousness Development	1			-	-			2
Total		30						700	25

* Relevant Self learning Short Term Course (STC)/ Online Courses /Professional Certification Courses from choice approved by AC offered in semester 1 and evaluated at the end of semester 4.
 #Industrial training for atleast 4 week during II and III semester and will be evaluated in Sem- 3.

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Semester-III									
Subject Code	Course	Hrs. of Instruction			Exam Duration(Hrs)	Max. Marks			Credit
		Th	Pr	Tu		CIA	SEE	Total	
Part - I									
19PICCC301	Core 8: Polymer Chemistry & Technology	3	-	-	3	50	50	100	3
19PICCC302	Core 9: Chemical Reaction Engineering	3	-	-	3	50	50	100	3
19PICCC303	Core 10: Instrumental Techniques of Analysis	4	-	-	3	50	50	100	4
19PICCC304	Core 11: Industrial Safety & Management (Self Study)	1	-	-	3	50	50	100	3
19PICDC301 / 19PICDC302	DSE-Core 1: Chemical Technology-I Or Pharmaceutical Technology	4	-	-	3	40	60	100	4
19PICCC305	Core practical 5: CT, PC & RE	-	6	-	6	40	60	100	3
19PICCC306	Core practical 6: ITA	-	3	-	3	20	30	50	1
19PICCC307	Core 12: Dissertation	-	4	-	-	-	-	-	5#
19PICGE01	Generic Elective	2	-	-	3	100	-	100	2
Part - II									
	*CEC- 2 : STC/ Online Courses / Professional Certification Courses	-						-	
19PICCE03	CEC- 3 : Industrial Training	Remarks						4^	
Total		30						750	23

* Relevant Self learning Short Term Course (STC)/ Online Courses/Professional Certification Courses from choice approved by AC offered in semester 1 and evaluated at the end of semester 4.
Only for the student who take exit in Semester-3.

^ Industrial Training is an extra credit non-compulsory course & 4 additional credits will be awarded above total 96 credits (which is required to earn PG Degree).

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Semester-IV									
Subject Code	Course	Hrs. of Instruction			Exam Duration(Hrs)	Max. Marks			Credit
		Th	Pr	Tu		CIA	SEE	Total	
Part - I									
19PICCC401	Core 12: Dissertation	-	16	-	6	60	90	150	10
19PICCC402	Core 13: Process Dynamics & Control	4	-	-	3	50	50	100	4
19PICCC403	Core 14: Advance Organic Chemistry	4	-	-	3	50	50	100	4
19PICDC401 / 19PICDC402	DSE Core - 2: Chemical Technology-II Or Chemistry of Synthetic Drug	4	-	-	3	40	60	100	4
Part - II									
19PICCE02	CEC- 2 : STC/ Online Courses / Professional Certification Courses				-				2
Total		24						450	24

* Relevant Self learning Short Term Course (STC)/ Online Courses/Professional Certification Courses from choice approved by AC offered in semester 1 and evaluated at the end of semester 4.

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TOTAL MARKS AND CREDIT DISTRIBUTION

S.N.	Part	Total Marks	Total Credit
1	Part I : Core, Self-Study, DSE-Core, DSE-ID, GE, Dissertation	2500	90
2	Part II CEC-I, CEC-II, Value Education for Consciousness Development	100	6
Total		2600	96
3	Industrial Training (Extra credit non compulsory course)	-	4
Total		2600	100