

DEPARTMENT OF CHEMISTRY

1. **Name of the Department** : CHEMISTRY
2. **Year of Establishment** : UG-1970, PG-1986
3. **Names of Programmes/Courses offered (U.G., P.G., M. Phil., Ph.D. etc.)** : UG: B. Sc. (Chemistry)
PG: M. Sc. (Organic Chemistry)
Ph.D.: Chemistry

4. Names of Interdisciplinary courses and the departments/units involved

The short research projects of PG students are completed with the help of Department of Microbiology and Physics. The Ph. D. research students cope their work with Departments of Botany, Zoology, Microbiology and Physics.

5. Annual/ semester/choice based credit system (programme wise)

UG: Semester and credit system (60+40 and (80+20) CGPA Pattern

PG: Semester and credit system (60+40 CGPA Pattern)

6. Participation of the department in the courses offered by other departments

Environmental Chemistry at T.Y.B.Sc. level and Environmental studies at F.Y.B.Sc. level are the inter disciplinary subjects which are taught by our faculty.

7. Courses in collaboration with other universities, industries, foreign institutions, etc.- NA

8. Details of courses/programmes discontinued (if any) with reasons- NA

9. Number of teaching posts

Post	Sanctioned	Filled
Professor	-	-
Associate Professor	03	03
Assistant Professor	05	05
Others (CHB)	10	05

10. Faculty profile with name, qualification, designation, specialization

Name of faculty	Qualification	Designation	Specialization	Experience	No. of Students guided for Ph. D.
Mr. I. B. Chaudhari	M.Sc., M.Phil	HOD &Asso. Professor	Physical Chemistry	33	-
Dr. U. M. Jadhav	M.Sc., M.Phil Ph.D.	Associate Professor	Physical Chemistry	28	-
Dr. M. K. Patel	M.Sc.,M.Phil Ph.D.	Associate Professor	Organic Chemistry	27	-
Mr. M. M. Patil	M.Sc.,NET	Assistant Professor	Organic Chemistry	07	-
Mr. R. V. Patil	M.Sc., NET	Assistant Professor	Organic Chemistry	07	-
Mr. S. R. Ujgare	M.Sc., NET	Assistant Professor	Industrial Chemistry	07	-
Dr. A. G. Beldar	M.Sc., Ph.D., NET	Assistant Professor	Organic Chemistry	07	Working-02
Mr. J. U. Chavan	M.Sc., NET	Assistant Professor	Organic Chemistry	07	-

List of senior

visiting faculty

Sr. No	Name of faculty	Qualification	Specialization	Experience
1	Dr. L. S. Patil	M.Sc., Ph.D.	Physical Chemistry	37
2	Prof. N. B. Patil	M.Sc., M. Phil	Inorganic Chemistry	35
3	Prof. S. B. Patil	M.Sc., M.Phil.	Inorganic Chemistry	34
4	Dr. B. S. Patil	M.Sc., Ph.D.	Organic Chemistry	17
6	Prof. T. A. Rajale	M.Sc. (NET)	Physical Chemistry	07
7	Prof. Dipak Bagal	M.Sc., NET	Physical Chemistry	06

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty

UG: B. Sc. (Chemistry) :15 %

PG: M. Sc. (Organic Chemistry) :20 %

13. Student -Teacher Ratio (programme wise):

UG - 90:1

PG - 8: 1

14. Number of academic support staff (technical) and administrative staff

Post	Sanctioned	Filled
Lab Assistant	01	00
Lab Attendant	04	03
Peon	05	01

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.

No. of faculty members with Ph.D. = 03

No. of faculty members with M. Phil. = 01

No. of faculty members with PG/NET/SET = 04

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Sr. No	Name of the project	Name of the Principal Investigator	Funding Agency	Amount (in Rs.)	Duration
1	MRP	Mr. N. B. Patel	UGC	1,25,000/-	2010-12
2	MRP	Mr. S .B. Patil	UGC	1,40,000/-	2010-12
3	MRP	Dr. U. M. Jadhav	UGC	1,20,000/-	2009-11

4	MRP	Dr. M. K. Patel	UGC	1,30,000/-	2009-11
5	MRP	Mr. I. B. Chaudhari	UGC	4,25,000/-	2014-16
6	MRP	Mr. M. M. Patil	UGC	3,69,000/-	2014-16

17. Departmental projects funded by DST - FIST; UGC, DBT, ICSSR, etc. and total grants received – Nil

18. Research Centre /facility recognized by the University

Department is recognised as research centre for Ph. D and M. Phil. study by affiliated University. Recognition by NMU, Jalgaon – Letter No. NMU/11/Lab. Recog./1125/2014 dated 30/06/2014 (for the period 2014-17). Presently 07 students are working for their Ph. D. work in our laboratory

19. Publications:

Number of papers published in peer reviewed journals:

- International : **23**
- National : **01**
- Monographs : **Nil**
- Editing Books : **Nil**
- Books with ISBN : **16**
- Citation/ index : **07**
- Impact factor : **0.23 –6.805**
- h- index : **01**

20. Areas of consultancy and income generated:

Department provides Free Consultancy Services for the nearby farmer for the analysis of water samples. In collaboration with the soil testing laboratory of Agricultural college of our Institute, the Department extends the consultancy in Soil testing. Both the facilities are provided free of cost to nearby farmers.

21. Faculty as members in:

- **Mr.N.B. Patel** -Member, BOS in Chemistry, NMU, Jalgaon (2006-11).
- **Dr. U.M. Jadhav**- Life member - International Science Congress Asso.
Syllabus Committee Member, TYBSc,M.Sc. (I)
- **Dr. M. K. Patel**- Life Member, Association of Chemistry Teachers,
Co-ordinator, Steering Committee, NAAC-2017.
Syllabus Committee Member, SY, TYBSc, M.Sc.(I)
- **Mr. M. M. Patil**- Life Member, Association of Chemistry Teachers

22. Student projects

- Percentage of students who have done in-house projects including inter departmental/programme: **100 % for M.Sc. students**
- Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies: **Nil**

23. Awards / Recognitions received by faculty and students

Faculty Name	Title of the Award	Year	Agency	Type of achievement
Mr. S. B. Patil	Best Principal Award	2014	Science Foundation, Pune	Academic
Mr. M. M. Patil	First Prize at State Level Avishkar Festival	2011	Shivaji University, Kolhapur	Best Research Presentation
	Samajbhushan Award	2012	Kedareshwar Pratihthan, Pune	Academic
	Second Prize at University Level Avishkar Festival	2015	NMU, Jalgaon	Best Research Presentation
	First Prize at State Level Avishkar Festival	2011	Shivaji University, Kolhapur	Best Research Presentation
Dr. A. G. Beldar	Second Prize at University Level Avishkar Research Festival	2011	North Maharashtra University, Jalgaon	Best Research Presentation
Patil Savita Vinod	DST Inspire Fellowship	2012	Central Gov. of India	Inspire Fellow
Jain Dhanlakshmi	DST Inspire Fellowship	2014	Central Gov. of India	Inspire Fellow
Jadhav Madhuri	DST Inspire Fellowship	2014	Central Gov. of India	Inspire Fellow
Sagar Bhavsar	RD Parade Delhi	2015	State Government	Cultural
Ahire Arti	RD Parade Mumbai	2015	State Government	Cultural
Sagar Bhavsar	Singing Competition	2016	State Government	Cultural
Remata Pawara	Gold Medal	2016	NMU, Jalgaon	Best Cartoon Award in Yuwa Rang
Shaikh Ambreen	Gold Medal	2016	NMU, Jalgaon	Secured 1 st rank at M.Sc. in NMU

24. List of eminent academicians and scientist / visitors to the department.

Sr. No.	Name of the eminent academicians and scientist/visitors	Institute or Place	Year
1	Prof. P. P. Mahulikar	Director, BCUD, North Maharashtra University, Jalgaon	2013
2	Dr. P. R. Puranik	North Maharashtra University, Jalgaon	2013
3	Miss Rima Vaidya	Executive- Scientific and Patent	2015

		Information, SciFinder-CAS Representative, Pune	
4	Dr. Ram Mohan S.	Illinois Westliyan University, Blummington, United State of America	2016
5	Dr. C. G. Tele	Senior Scientist, Food and Drug Administration, United State of America	2016
6	Dr. Kalpesh Patel	Scientist, Chang Wong University, South Korea	2016
7	Dr. Dipak R. Patil	R&D Scientist, Wockhardt Pharmaceutical, Aurangabad	2013
8	Dr. B. V. Pawar	Dean, Faculty of Science	2014
9	Dr. Ajay Sali	Joint Director, Higher Education	2013
10	Dr. Kiran Mahale	Scientist, University of Melbourne	2016
11	Dr. Dipak R. Patil	R&D Scientist, Syngenta, Goa	2017

25. Seminars/ conferences/ workshops organized and the source of funding

The Department has celebrated '**International Year of Chemistry-2011**' funded by UGC, New Delhi. An amount of Rs. 1, 00,000 /- was sanctioned for this purpose. The department organised the following programmes.

- Essay Competition (UG and PG)
- Power point presentation competition in chemistry (UG and PG)
- One Day Seminar for the Senior and Junior college teachers.
- Poster competition and Exhibition (UG and PG) on Chemistry in our lives

26. Student profile programme/course wise:

Year	Name of the Course	Applications received	Selected	Enrolled		Pass percentage
				*M	*F	
2011-12	F.Y.B.Sc.	591	297	117	180	70
	S.Y.B.Sc.	155	155	66	89	70
	T.Y.B.Sc.	63	63	30	33	73
	M.Sc. Part I	NA	37	17	20	51
	M.Sc. Part II	NA	22	12	10	63
2012-13	F.Y.B.Sc.	622	308	151	157	84
	S.Y.B.Sc.	180	180	102	78	67
	T.Y.B.Sc.	92	92	41	51	45
	M.Sc. Part I	NA	22	8	14	26
	M.Sc. Part II	NA	37	22	15	42
2013-14	F.Y.B.Sc.	678	385	208	177	76
	S.Y.B.Sc.	245	245	131	114	51
	T.Y.B.Sc.	97	97	45	52	32
	M.Sc. Part I	NA	19	8	11	15
	M.Sc. Part II	NA	21	12	09	33

2014-15	F.Y.B.Sc.	715	310	148	162	87
	S.Y.B.Sc.	202	202	98	104	69
	T.Y.B.Sc.	88	88	40	48	31
	M.Sc. Part I	NA	21	10	11	28
	M.Sc. Part II	NA	19	09	10	33
2015-16	F.Y.B.Sc.	759	372	150	222	79
	S.Y.B.Sc.	280	280	136	144	46
	T.Y.B.Sc.	98	98	45	53	42
	M.Sc. Part I	NA	32	18	14	40
	M.Sc. Part II	NA	21	13	08	28

27. Diversity of students:

Name of the course	% of students from the same state	% of students from other state	% of students from abroad
FYBSc	99	01	-
SYBSc	98	02	-
TYBSc	97	03	-
MSC (I)	98	02	-
MSc (II)	99	01	-
Ph. D.	90	10	-

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defense services, etc.?

Sr. No.	Year	Name of students	Exam qualified
1	2010	Patil Dipak Ramdas	GATE
2	2011	Patil Rajendra Vitthal	UGC CSIR NET
3	2011	Patil Milind Maharu	UGC CSIR NET
4	2011	Beldar Anil Gokul	UGC CSIR NET
5	2011	Patil Dipak Ramdas	UGC CSIR NET
6	2011	Patil Milind Maharu	GATE
7	2012	Mansoori Javed Haneef	UGC CSIR NET
8	2012	Sayyed Reharali M	UGC CSIR NET
9	2012	Mansoori Javed Haneef	GATE
10	2013	Pathan Irfankhan	GATE
11	2014	Pinjari Arif Haneef	UGC CSIR NET

12	2014	Pathan Irfankhan	UGC CSIR NET
13	2014	Gaurav Bhavesh	CSIR GATE
14	2015	Pathan Irfankhan	SET
15	2015	Patil Shivnath Raman	SET

29. Student progression:

Student progression	Against % enrolled
UG to PG	65
PG to M.Phil.	Nil
PG to Ph.D.	10
Ph.D. to Post-Doctoral	Nil
Employed • Campus selection • Other than campus recruitment	95

30. Details of Infrastructural facilities:

- **Library:** Departmental Library Area–300 sq.ft. and contains more than 500 reference books (+ books in central library). Number of Journals Subscribed - 02
- **Internet facility for staff and students:** Department is equipped with 10 Mbps internet connection, **09** (08 PC and 01 Laptop) units are available for staff and students.
- **Class rooms with ICT facility:** LCD Projector system is available for the ICT Based Lecture delivery for PG.
- **Laboratories:** A total of **08** laboratories are available for UG and PG students and **01** separate research laboratory is for researchers.

Sr. No.	Laboratories	Area (sq.ft.)
1	Lab. No. 1	1200
2	Lab. No. 2	1200
3	Lab. No. 3 (Research Laboratory)	600
4	Central Store Room	600
5	Lab. No. 4	1200
6	Lab. No. 5	1200
7	Lab. No. 6 (1 st floor)	1200
8	Lab. No. 7 (PG-I)	600
9	Lab. No. 8 (PG-II)	600

31. Number of students receiving financial assistance from college, university, government or other agencies:

03 students have received DST Inspire Fellowship from Government of India. 80 % students are getting financial assistance from SC, ST, OBC, NT development forum. They also get substantial financial assistance through “Earn and Learn Scheme” from the University.

32. Details on student enrichment programmes (special lectures / workshops /seminar) with external experts

- Seminar, Group discussion, Home assignments etc. are regularly conducted for UG and PG students.
- Industrial visits to SSTPSSK Ltd, Purushottam Nagar.
- Educational Tours to Sudarshan Chemicals, Mahad

Year	Title/ Type of Programme	Names of Resource Person(s)
2011	International Year of Chemistry-2011	Prof. P. P. Mahulikar, D. G. Hundiwale, Prof. R.D.Kulkarni
2012	NET/SET Coaching classes for OBC and Minority Students	Faculty members
2012	Remedial coaching for weaker students	Faculty members
2015	Use of Computer Software in Chemistry” for PG students	Faculty members
2015	SciFinder Workshop	Dr. Reema Vaidya
2015	Seminar on “Job opportunities in Chemistry”	Kalpesh Patel, Chan Wan University, South Korea
2015	Green Chemistry Approach for synthesis	Dr. Ram Mohan S., Illinois Westliyan University, Blummington, USA
2016	Prospectus of Research in Australia	Dr. Kiran Mahale, Scientist, University of Melbourne
2016	“Career in Phama Industry”	Dipak Patil,Syngenta ,Goa

33. Teaching methods adopted to improve student learning

- Traditional Lecture Method using chalk and talk.
- Regular evaluation of both theory and practical.
- Each teacher mentor takes care of 50 students and helps in their all round personality development.
- Interactive Method by conducting seminars, presentations and group discussions.
- Use of PowerPoint presentation using LCD projector.
- Text book, Handouts, E-books and Question papers of previous examinations are made available in department.
- Educational and Industrial visit for the assimilation of subject on various relevant techniques for the benefit of students.
- Projects topics are given to students and same project is carried out in the laboratory as a part of their syllabus.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities

- In addition to regular academic activities, the students and the faculty frequently participate in the social activities and the program organized by the college for the welfare of weaker section of the society.
- To promote environmental awareness, our department participated in “One Student-One Tree” campaign.
- Faculty of our department actively participated in “Biodiversity Audit”.
- Students and faculty of our department participated in a rally on “Social Awareness and equality”.

- 02 NSS student volunteers from our department Sagar Bhavsar and Ahire Aarti have participated in Republic Day parade at Red Fort, New Delhi and State level parade at Mumbai.
- All students participated in Swachh Bharat Abhiyan.
- Remata Pawara bagged 02 Gold and 01 silver medal in State and University level Cultural Festivals.
- With NSS volunteers faculties have actively participated in various social activities viz. Environment Awareness, AIDS awareness, Blood Donation camps, save water drive, involvement in rallies against social evils.
- Water and Soil testing programmes arranged by the department.

35. SWOC analysis of the department and Future plans

Strengths:

- Highest student strength at FY, SY and TYBSc level.
- Highly qualified staff with **03** Ph.D., **01** M.Phil. and **05** registered for Ph.D.
- Recognized research centre of the affiliating university. Four faculty members are working on research project sanctioned by UGC, CSIR.
- Demand ratio of students for chemistry is very high. Number of students seeking admission exceeds the number of seats available.
- Departmental activities organized to enrich programme.
- The faculty is actively engaged in the research, presented research papers in different national/state level seminars & conferences.
- Research publications in international / national journals.
- Well equipped laboratories with all types of major equipments.
- Departmental library with reference books and journals.
- Students' exposure to industry through-field trips, study tours.

Weakness:

- The revised curriculum is overloaded with subjects.
- Lack of requisite number of trained Non-teaching staff.
- No additional teacher for postgraduate work.
- Time constraint in semester pattern.

Opportunities:

- Participation in events, seminars and Internship Programmes.
- Collaboration with reputed companies and NGO's.
- Coordinating with alumni regarding placements.
- Exposure to expert perspectives and ideas through sessions and workshops.

Challenges:

- To provide maximum on campus and off- campus placement.
- To increase research facilities comparable to other national laboratories.
- To encourage students to read national newspapers, magazines and promote reading habits.
- Since a large number of students join technical/medical colleges after STD. XII, it is a challenge to teach chemistry for below average students.

Future plans of the department:

- To promote research activities.
- To adopt e-learning methods.
- Tie-ups with NGOs.
- To start skill based certificate and diploma courses.
- To organize Seminars/ Conferences.
- To extend the knowledge of Chemistry and its application to the society.