

## (DEPARTMENTAL INPUTS)

### DEPARTMENT OF CHEMISTRY

1. Name of the department: Chemistry
2. Year of Establishment : Undergraduate: 1978  
Postgraduate: i) Analytical chemistry - 1989  
ii) Organic Chemistry – 2013  
iii) Inorganic Chemistry - 2013
3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., and Integrated Masters; Integrated Ph.D., etc.):  
i) B.Sc. (Chemistry)  
ii) M.Sc. (Analytical Chemistry)  
iii) M.Sc. (Organic Chemistry)  
iv) M.Sc. (Inorganic Chemistry)  
v) Ph.D.
4. Names of Interdisciplinary courses and the departments/units involved: Nil
5. Annual/ semester/choice based credit system (programme wise):
  - F.Y.B.Sc.-Semester system; choice based credit system to implemented from the academic year 2016-2017
  - S.Y.B.Sc.- Semester system; choice based credit system to be implemented from the academic year 2017-2018
  - T.Y.B.Sc.- Semester system; choice based credit system to be implemented from the academic year 2018-2019
  - M.Sc. (Analytical Chemistry) Choice Based Credit System
  - M.Sc. (Organic Chemistry) Choice Based Credit System
  - M.Sc. (Inorganic Chemistry) Choice Based Credit System
6. Participation of the department in the courses offered by other departments: Nil
7. Courses in collaboration with other universities, industries, foreign institutions, etc.: Nil
8. Details of courses/programmes discontinued (if any) with reasons: Nil
9. Number of teaching posts:

	Sanctioned	Filled
Associate Professors	03	03
Asst. Professors	01	01
Other	03	03

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt. / Ph.D. / M. Phil. etc.,)

Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the Last 4 years
Dr. V. V. Dhapte	M.Sc., Ph.D.	Associate Professor	Physical Chemistry	35	05
Dr. A. B. Pawar	M.Sc., NET., Ph.D.	Associate Professor	Organic Chemistry	21	01
Dr. V. B. Jadhav	M.Sc., Ph.D.	Associate Professor	Physical Chemistry	23	01
Dr. Mrs. S.P. Dagade	M.Sc., Ph.D.	Asst. Professor	Organic Chemistry	10	04
Dr. Mrs. M.P. Wadekar	M.Sc., Ph.D.	Asst. Professor	Inorganic Chemistry	08	03
Dr. Mrs. V.B. Adsul	M.Sc., Ph.D.	Asst. Professor	Organic Chemistry	13	01

11.Senior visiting faculty: Total No.=13

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

Programme	Theory	Practical
B.Sc.	-	-
M.Sc.	-	50

13.Student -Teacher Ratio (programme wise)

Programme	No of students	Ratio
B.Sc.	252	63:1
M.Sc.	157	9:1

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

Type	Sanctioned	Filled
Technical	01	01
Administrative	NA	NA

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

Same as described in item No.10

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

Ongoing Major Research Project:1

Grants received=Rs788,136

Ongoing Minor Research Projects :2

Grants received =Rs62,500

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

Total number=6

Total funding=Rs 42,09,800

18. Research Centre /facility recognized by the University:

Department of Chemistry of the Yashwantrao Mohite College is well equipped with modern instruments. Under the roof of 'Science Research Center', the chemistry laboratories of the institute address various research programs. Modern instrumentation facilities like FTIR, DTA-60 (TG/DTG), Gas Chromatography, UV Spectrophotometer, etc are made available for research programs. Our research students are conducting their mandatory research projects at various laboratories like C-MET, NCL, Pune University, etc.

19. Publications:

\* a) Publication per faculty From 2011-2016

Total=66

Sr. No.	Name of Faculty Member	No. of Publication	International	National
1.	Dr. V. V. Dhapte	12	10	02
2.	Dr. A. B. Pawar	10	08	02
3.	Dr. V. B. Jadhav	10	09	01
4.	Dr. S. P. Dagade	14	12	02
5.	Dr. M. P. Wadekar	07	05	02
6.	Dr. V. B. Adsul	13	11	02

\*

Number of papers published in peer reviewed journals (national /international) by faculty and students

By Students: 15

\* Number of publications listed in International Database (For Eg: Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)

Monographs: Nil

\* Chapter in Books: Nil\* Books Edited: Nil\*Books with ISBN/ISSN numbers with details of publishers: Nil\*Citation Index- \*SNIP-\*SJR-\*Impact factor\* h-index-

Number of Publications in Web of science, Scopus, Google scholar and Indian citation index:						
S. N.	Academic Year	Total Publications	No. of papers listed in Web of science	No. of papers listed in Scopus	No. of papers listed in Google Scholar	No. of papers listed in Indian Citation Index
1	2011-12	12	00	06	12	06
2	2012-13	18	00	11	16	14
3	2013-14	18	02	08	16	14
4	2014-15	08	01	03	08	03
5	2015-16	10	00	05	10	04

20. Areas of consultancy and income generated

The revenue generated through consultancy ( FT-IR analysis) is utilized for maintenance of the instruments. Through its consultancy services , the Department of Chemistry has generated the funds of Rs, 10,050/

21. Faculty as members in  
 a) National committees b) International Committees c) Editorial Boards - NIL
22. Student projects:  
 a) Percentage of students who have done in-house projects including inter departmental/programme.  
 b) Percentage of students placed for projects in organizations outside the institution i.e.in Research laboratories/Industry/ other agencies

Year	Total No of Students MSc-II	No. of Project students		% Project Students	
		In-house	Outside the Institution	In-house	Outside institution
2015-2016	76	07	02	9.3%	03
2014-2015	80	19	--	23.75 %	--
2013-2014	63	16	--	25.39 %	--
2012-2013	60	10	--	16.66 %	--
2011-2012	61	12	--	19.67 %	--
2010-2011	60	05	--	9 %	--

23. Awards / Recognitions received by faculty and students  
 Ph D Received by staff =3                      Ph. D Received by other than staff=6  
 Awards received by staff =3                      Awards received by students =12
24. List of eminent academicians and scientists / visitors to the department Total=44
25. Seminars/ Conferences/ Workshops organized and the source of funding  
 a) National    b) International.  
 Total=6
26. Student profile programme/course wise: students admitted UG and PG  
 Year2010-11=188; Year2011-12=161; Year2012-13=164; Year2013-14=204  
 Year2014-15=200
27. Diversity of Students :(Students from other states,Students from abroad)  
 Year2011-12=(7,4); Year2012-13=(6,4); Year2013-14=(7,4); Year2014-15=(10,1)  
 Year2015-16=(3,0)
28. How many students have cleared national and state competitive examinations such as NET, SET, GATE, Civil services, Defense services, etc.?--Nil
29. Student progression

Student progression	Against % enrolled
UG to PG	70.0
PG to Ph.D.	2.0
<b>Employed</b>	
• Campus selection	8.0
• Other than campus recruitment	80.0
Entrepreneurship/Self-employment	3.0

30. Details of Infrastructural facilities
- Library: Departmental library has books borrowed from main library. One faculty in-charge is appointed to issue the books to students. It is open to students during working

hours of the department. Text and reference books are issued whenever required. Digital knowledge resources, cassettes, CD, DVD, VCD, floppy, pen drive, films etc are also made available in the Department.

- Internet facilities for Staff & Students: The internet browsing is available. The department has nine computers with internet facility for staff and students. Also laptops and LCD projector are available for staff and for students for power point presentations.
- Class rooms with ICT facility
- Laboratories: The department has separate laboratories for UG, PG and Ph. D. students with well trained lab assistants.

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

Year	No. of students	financial assistance (Rs.)
2011-12	22	220000
2012-13	32	320000
2013-14	31	310000
2014-15	62	620000
2015-16	32	320000

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

- To improve academic knowledge of the students lectures of experts from respective fields are arranged. Last year lectures of Dr. P. S. Kalsi , Prof. Dr. Siddiqi & Mr. Sharad Mohite were organized for U.G & P.G students.
- Special coaching was provided especially for SET & NET examination. This year on 18<sup>th</sup> August 2015, Department organized a one day workshop on “Preparing for SET & NET examination”. The workshop was inaugurated at the auspicious hands of Dr. G. S. Rashinkar, Professor, Department of Chemistry, Shivaji University, Kolhapur who is a renowned person for training students to face the SET & NET examinations.

33. Teaching methods adopted to improve student learning

- Modern teaching aids such as models, charts, over head projectors, slide projectors, videotapes, LCD, multimedia, carefully prepared educational films, unique animated model films etc.
- Heuristic method- it is ‘I Do, I Discover’ method prominently used by doing everything practically and project work.
- Demonstration method- we also follow this method where lecture room and laboratory work is taken into account.
- Assignment method- we give assignments to the students where individual learning process is coupled with library study.
- Interactive method – communicative approach in teaching.

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

Major Activities conducted under the sphere of extension activities and Institutional Social Responsibility during last three years includes:

- Awareness about food adulteration, potability of water quality, water pollution, vehicle pollution, traffic rules.
- National level Environment awareness campaign like 'My Earth ,My Duty', Tree Plantation programme.
- Participation in Bus day for environment awareness, Blood Donation Camps, Women Empowerment Activities and Self Defence Training for female students, Disaster Management Training Programmes.

35. SWOC analysis of the department and Future plans:

#### STRENGTH:

- The Department has a dedicated faculty and highly efficient support staff.
- The number of publications by the faculty members in the last four years has been commendable.
- All staff members of the department are Ph. D. holders and all are recognized research guide. Total eleven students have registered their names under these guides.
- The department has well equipped research centre.
- The Department has active alumni which work in close co-operation with department.

#### WEAKNESSES

- A lack of space compared to ever growing number of students.
- Interdisciplinary courses needs to be introduced.
- Courses in collaboration with other universities and industries are required.

#### OPPORTUNITIES

- To publish peer reviewed research journal.
- Adding more collaborations with upcoming industries and research institutes around Pune.

#### CHALLENGES

- Getting more students with distinction and first class.
- To increase pass percentage
- Encouraging staff for writing chapters in books, writing books with ISBN/ISSN numbers and editing books.
- Encouragement to the staff for becoming a part of national committees, International committees and editorial boards of reputed journals

Departmental Plan for PG Teaching:

- P.G. students will be trained to appear for NET, SET and GATE examinations with enhanced capability.
- The department will have more tie ups with experts from Pharmaceutical, Polymer ,Dye other chemical industries around the city for teaching.
- we intend to have interactive virtual classroom / laboratory which will enable our students to experience sessions such as webinars.

Departmental plan for Research:

- procuring instruments like GC-MS, XRD, Mass spectrometer, Atomic absorption spectrometer, High performance liquid chromatography (HPLC), High performance thin layer chromatograph (HPTLC) and Compact bench top NMR instrument.
- more research proposals to various funding agencies like UGC, DST and DBT.
- syllabus for the PG and Pre-Ph.D. course work will be updated