

Barshi Shikshan Prasarak Mandal's
Shriman Bhausahab Zadbuke Mahavidyalaya, Barshi

Zadbuke Marg, Latur Road, Barshi, Dist - Solapur, Maharashtra, India - 413401

Department of Chemistry

Profile

About the Department

The department of Chemistry was started in 1969. The first faculty of the department was Shri. A. S. Kortikar. There had been 05 Full time faculty. We as a department run B.Sc. Chemistry as a regular course. Apart from the course, we have active MOUs to organize different kinds of activities programmes and events. As well we have few certificate courses. The faculty members are actively involved in research, extension and community services.

Courses :

	Courses	Duration	Eligibility
Degree	B.Sc.	3 yr	12 th Sci.
Certificate	1) Certificate Course in "Software Tools for drawing Chemical Structures".	1 Month	12 th Sci.
	2) Certificate Course in "Fundamentals of Chemistry Laboratory".	1 Month	12 th Sci.
Add on Course	3) Food Adulteration	80 Hrs	B.SC.III Chemistry Appeared

2) Faculty and Staff :

Sr. No.	Name	Designation	Qualification
1	Shri. M. D. Kamble	Head & Associate Professor	M.Sc. M.Phil.
2	Shri. Y. B. Mule	Assistant Professor	M.Sc. NET, GATE
3	Shri. Madane U. D.	Lab Attendant	B.Sc.
4	Shri. Sevkar S.	Lab Attendant	M.A.

3) MOU's :

Sr. No.	MoU with	Purpose	Duration
1	Balaghat Shikshan Sanstha's ASC College, Naldurg affiliated to Dr. B.A. M. U. Aurangabad.	Cooperate in the exchange of information relating to their activities in academic and research in fields of mutual interests.	3 yrs

4) Course Outcomes :

Sr. No.	Course	Outcomes
1	B.SC.I	students are expected to: <ul style="list-style-type: none">• Understand the significance of rates of chemical reactions.• Able to understand second law thermodynamics and Carnot cycle and its efficiency.• Able to the knowledge of mathematical concepts.• Also, get a better understanding gaseous state.• The atomic structure and periodic properties and trends; types of chemical bonding.• Key knowledge of ionic bonding and different parameters of crystal structure.• The basic knowledge of the VBT and MOT acquire with various examples.• Understand the basics of bonding and able to draw correct structure of any organic molecule and comment on its stability.• Able to predict the reactivity of organic molecules by the help of electronic effects.• Understand the different reactions along with formation of intermediates.• Able to think and predict the possible mechanism of various critical organic reactions.• Able to imagine 3D structure of organic molecules.• Easily comment on aromaticity of any organic compound and its stability• Able to distinguish between saturated, unsaturated, alicyclic, aromatic and heterocyclic compounds.• Understand the basic elements present in the organic compounds• Able to understand the qualitative analysis methods of C, H, N, S and halogen• Easily understand the basic principle and classification of chromatography• Able to know paper chromatography and its applications.

2	B.Sc.II	<p>Working through this course, students are expected to apply their knowledge:</p> <ul style="list-style-type: none"> • To problem-solve, deduce structures, and synthesize simple organic molecules using the studied reactions. • Relationships between organic chemistry and other disciplines are noted • Describe bonding models that can be applied to a consideration of the properties of transition metal compounds. • The students familiar about the inorganic halogen compounds, coordination compounds and transition elements. • They get well exposure about solids.
3	B.SC.III	<p>Physical Chemistry:</p> <ul style="list-style-type: none"> • Explains the basic definitions and terms in a phase diagram • Defines phase, equilibrium, component, degree of freedom and phase rule concepts. • Define central parts of electrochemical cells and electrochemical equipment such as anode, cathode, membrane, diaphragm, liquid junction, reference electrode, and define and relate mathematically basic physical and thermodynamic ... • The limitations and uses of models for the solution of applied problems involving chemical thermodynamic and kinetics <p>Inorganic Chemistry:</p> <ul style="list-style-type: none"> • The fundamentals of the chemistry of the main group elements, and important real world applications of many of these species • The use of group theory to recognize and assign symmetry characteristics to molecules and objects, and to predict the appearance of a molecule's vibrational spectra as a function of symmetry • The bonding models, structures, reactivity's, and applications of coordination complexes, boron hydrides, metal carbonyls, and organometallics <p>Organic Chemistry:</p> <ul style="list-style-type: none"> • How to use their understanding of organic mechanisms to predict the outcome of reactions • How to design syntheses of organic molecules • How to determine the structure of organic molecules using IR and NMR spectroscopic techniques • Students will demonstrate an advanced level of knowledge in Organic photochemistry. • Improve their theoretical knowledge about chemical reactions which are carried out by light. • The use of nuclear magnetic resonance spectroscopy, mass spectrometry and infrared spectroscopy for organic structure elucidation • The fundamentals of electronic structure and bonding in conjugated and aromatic systems • Reactivity patterns of conjugated and aromatic molecules <p>Analytical Chemistry:</p> <ul style="list-style-type: none"> • Explain the theoretical principles and important applications of classical analytical methods within titration (acid/base titration, complexometric titration, redox titration), and various techniques within gravimetric and

		<p>coulometric methods.</p> <ul style="list-style-type: none"> • Explain the theoretical principles of selected instrumental methods within electroanalytical and spectrometric/spectrophotometric methods, and main components in such analytical instruments. • Explain the theoretical principles of various separation techniques in chromatography, and typical applications of chromatographic techniques. • Assess and suggest a suitable analytical method for a specific purpose, and evaluate sensitivity, important sources of interferences and errors, and also suggest alternative analytical methods for quality assurance. • Performing risk assessment of chemical experiments and chemical analytical activity. • Performing classical analytical experiments, and make observations and assessments of important factors that could affect the analytical result. • Be familiar with calculations in analytical chemistry, be able to calculate titration errors for method evaluation, and perform statistical evaluation of results from classical and instrumental chemical experiments and analyses. • Make scientific reports from chemical experiments and present the results in a transparent manner

5) Syllabus :

Sr. No.	Course	Syllabus Link
1	B.SC.I	http://www.sus.ac.in/uploads/bos/Syllabus%202022%202023/UG/1%20BSc%20I%20Chemistry%20%20Final%20PAHSUS.pdf
2	B.Sc.II	http://sus.ac.in/uploads/bos/Syllabus%202020/BSc%20II%20Chem%20Syllabus%2008072020.pdf
3	B.SC.III	https://su.digitaluniversity.ac/WebFiles/3%20BSc%20III%20Chemistry.pdf

8) Publications

Sr. No.	Name	Chapter/Research Article / Translation Creative
1.	Shri. Kamble M.D.	Optical Properties of pyrene doped polymer thin Films. Exciplex emission of pyrene and Biphenyl doped in polymer Thin Film
2.	Shri. Mule Y.B.	Synthesis of extended conjugated indolyl chalcones as potent anti-breast cancer, anti-inflammatory and antioxidant agents Synthesis and pharmacological evaluation of combretastatin-A4 analogs of pyrazoline and pyridine derivatives as anticancer, anti-inflammatory and

	antioxidant agents
	A catalyst-and solvent-free multicomponent synthesis of 7-azagramine analogues via a Mannich type reaction
	Synthesis and pharmacological evaluation of pyrazoline and pyrimidine analogs of combretastatin-A4 as anticancer, anti-inflammatory and antioxidant agents
	An efficient synthesis of 1, 8-dioxo-octahydroxanthenes catalyzed by thiourea dioxide (TUD) in aqueous media
	Synthesis, characterization and evaluation of 1, 3-Bisindolyl-2-Propen-1-one derivatives as potent anti-breast cancer agents
	An environmentally benign synthesis of aryl-hydrazones with aqueous extract of Acacia pods as a natural surfactant type catalyst
	Preparation and Pharmacological Evaluation of Novel Orally Active Ester Prodrugs of Ketoprofen with Non-Ulcerogenic Property
	Indium Trichloride (InCl ₃) Catalyzed Synthesis of Fused 7-Azaindole Derivatives Using Domino Knoevenagel-Michael Reaction
	Synthesis and Biological Evaluation of Substituted Pyrazoline Derivatives Bearing 3,4,5-Trimethoxyphenyl Moiety as Anticancer, Anti-inflammatory and Antioxidant Agents

9) Meritorious Students

Sr. No.	Name	Course	Year	Percentage
1	Yadav Chandrakant D.	B.Sc. III Chemistry	2017-18	77.4
2	Pawar Komal G.	B.Sc. III Chemistry	2017-18	75.26
3	Gayake Pravin V.	B.Sc. III Chemistry	2017-18	74.67
4	Shinde Ajay A.	B.Sc. III Chemistry	2018-19	80.22
5	Gawali Laxman A.	B.Sc. III Chemistry	2018-19	74.94
6	Gend Komal V.	B.Sc. III Chemistry	2018-19	72.16
7	Damare Nikita P.	B.Sc. III Chemistry	2019-20	75.5
8	Kadam Pragati M.	B.Sc. III Chemistry	2019-20	73.62
9	Damare Manisha A.	B.Sc. III Chemistry	2019-20	73.34
10	Sirsat Pallavi T.	B.Sc. III Chemistry	2020-21	88.5
11	Basate Vivek V.	B.Sc. III Chemistry	2020-21	78.66
12	Shelake Puja R.	B.Sc. III Chemistry	2020-21	77.2
13	Latake Rushikesh S.	B.Sc. III Chemistry	2021-22	81.52
14	Deshmukh Onkar V.	B.Sc. III Chemistry	2021-22	81.12
15	Gaware Mahesh V.	B.Sc. III Chemistry	2021-22	80.58

10) Result Analysis

Sr. No.	Year	Percentage
1	2017-18	78.26
2	2018-19	51.61
3	2019-20	100
4	2020-21	96.29
5	2021-22	98.24

11) Prestigious Alumni

Sr. No.	Name	Present Designation
1)	Dr. Jadhvar Suresh Chadrabhan M.Sc. Ph.D. NET, SET	Professor & Head , Department of Chemistry, Yogeshwari Mahavidyalaya , Ambajogai
2)	Prof. Dikule Pradeep Sadashiv M.Sc. M.Phil.	Associate Professor & Head , Dr. Patangrao Kadam College, Sangli
3)	Prof. Dr. Sitaram K. Chavan M.Sc. Ph.D.	Professor & Head , Department of Chemistry, D. B. F. Dayanand College, Solapur
4)	Shri. Mohan Dhondiba Kamble M.Sc. M.Phil.	Associate Professor & Head , Department of Chemistry, S.B.Z.M., Barshi
5)	Dr. R. B. Thorat	Scientist, CSIR Bhavnagar Gujrat
6)	Shri. Takale Vikram Namdev	Head Master, Barshi Technical High School, Barshi
7)	Dr. Amol Haridas Kategaonkar	Assistant Professor, GMD Arts, BW Commerce and Science College, Sinnar, Nashik
8)	Dr. Gautam A. Gaikwad	Professor & Head , Department of Chemistry, Shrimant Babasaheb Deshmukh Mahavidyalaya, Atpadi, Dist- Sangli
9)	Shri. Anna Jadhvar	Assistant Teacher , Range Hill's Secondary & Higher Secondary School, Pune
10)	Dr. Dipak Shinde	Senior Research Scientist, National Physical Laboratory, Teddington, UK
11)	Dr. Kanchan Gajendrakumar Mane M.Sc. Ph.D. SET	Assistant Professor, Doshi Vakil Arts College & Goregaon Co-operative Urban Bank Science & Commerce College, Goregaon, Raigad
12)	Shri. Sanjiwan Machindra Mundhe	Nayab Tahsildar, Barshi

12) Parenting Policy

The department allocates the students among the faculty members equally. Every faculty member from every entry of the students takes care of the ward for Personal, Academic, Social, Psychological growth and development. It is a well-documented process as a part of IQAC's quality initiative.

13) Contact Details

Sr. No.	Faculty	Contact No	E-mail Id	Twitter/ Face book
1	Shri. M.D. Kamble	9881770672	mdkamble1963@gmail.com	Facebook
2	Shri. Y.B. Mule	8698557024	ybmule@gmail.com	Facebook