DEPARTMENT OF CHEMICAL TECHNOLOGY,DR BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,AURANGABAD

SELF ASSESSMENT REPORT(TIER - I) FOR Chemical Tech.

Part A : Institutional Information

1 Name and Address of the Institution

DEPARTMENT OF CHEMICAL TECHNOLOGY,DR BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,AURANGABAD,
DEPARTMENT OF CHEMICAL TECHNOLOGY,DR BABASAHEB AMBEDKAR MARATHWADA UNIVERSITY,AURANGABAD

2 Name and Address of Affiliating University

3 Year of establishment of the Institution:

1989

4 Type of the Institution:

○ Institute of National Infortance	○ Autonomous
○ University	○ Any other(please specify)
○ Deemed University	

5 Ownership Status:

○ Central Government	☐ Trust
◉ State Government	☐ Society
○ Government Aided	☐ Section 25 Company
○ Self financing	☐ Any Other(Please Specify)

6 Other Academic Institutions of the Trust/Society/Company etc., if any

Name of Institutions	Year of Establishment	Programs of Study	Location

7 Details of all the programs being offered by the Institution under consideration:

Name of Program	Program Applied level	Start of year	Year of AICTE approval	Initial Intake	Intake Increase	Current Intake	Accreditation status	From	To	Program for consideration	Program for Duration
CHEMICAL TECHNOLOGY	UG	1998	1998	24	No	24	Applying first time	--	--	Yes	4
DRUGS AND PHARMACEUTICALS	PG	2007	2007	10	No	10	Eligible but not applied	--	--	No	2

8 Programs to be considered for Accreditation vide this application:

S No	Level	Discipline	Program
1	Under Graduate	Engineering & Technology	Chemical Tech.

9 Total number of employees

A. Regular* Employees (Faculty and Staff):

Items	2022-23		2021-22		2020-21	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	8	09	9	09	9	09
Faculty in Engineering (Female)	1	3	1	3	1	3
Faculty in Maths, Science & Humanities teaching in engineering program (Male)	2	5	2	5	2	5
Faculty in Maths, Science & Humanities teaching in engineering program (Female)	1	2	0	2	2	4
Non-teaching staff (Male)	13	15	13	15	13	15
Non-teaching staff (Female)	0	3	0	3	0	3

B. Contractual* Employees (Faculty and Staff):

Items	2022-23		2021-22		2020-21	
	MIN	MAX	MIN	MAX	MIN	MAX
Faculty in Engineering (Male)	7	7	6	7	6	7
Faculty in Engineering (Female)	7	7	7	7	8	8
Faculty in Maths, Science & Humanities teaching in engineering Programs (Male)	2	6	6	6	0	6
Faculty in Maths, Science & Humanities teaching in engineering Programs (Female)	2	6	0	6	4	6
Non-teaching staff (Male)	13	15	13	15	13	15
Non-teaching staff (Female)	0	3	0	3	0	3

10 Total number of Engineering students:

Engineering and Technology- UG	☐ Shift1	☐ Shift2
Engineering and Technology- PG	☐ Shift1	☐ Shift2
Engineering and Technology- Polytechnic	☐ Shift1	☐ Shift2
MBA	☐ Shift1	☐ Shift2
MCA	☐ Shift1	☐ Shift2

11 Vision of the Institution:

To develop the quality learning centre in Chemical Technology for sustainable regional development.

12 Mission of the Institution:

Mission Statement:

M1: To cater quality academic and research programs in Chemical Technology.

M2:To develop the products,processes and technology in the field of Chemical Technology.

M3:- To provide technological leadership for industrial and societal economic growth and benefit of the country.

13 Contact Information of the Head of the Institution and NBA coordinator, if designated:

Head of the Institution	
Name	PRAVIN SHRIDHARRAO WAK
Designation	PROFESSOR
Mobile No.	9422212845
Email ID	head.chemtech@bamu.ac.in

☑ **NBA Coordinator, If Designated**

Name	VINAY VIJAY LOMTE
Designation	Assistant Professor
Mobile No.	9881510535
Email ID	vlomte.chemtech@bamu.ac.in

PART B: Criteria Summary

Critera No.	Criteria	Total Marks	Institute Marks
1	VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES	50	50.00
2	PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES	100	100.00
3	COURSE OUTCOMES AND PROGRAM OUTCOMES	175	150.00
4	STUDENTS' PERFORMANCE	100	76.98
5	FACULTY INFORMATION AND CONTRIBUTIONS	200	176.00
6	FACILITIES AND TECHNICAL SUPPORT	80	80.00
7	CONTINUOUS IMPROVEMENT	75	65.00
8	FIRST YEAR ACADEMICS	50	41.71
9	STUDENT SUPPORT SYSTEMS	50	50.00
10	GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES	120	120.00
	Total	**1000**	**910**

Part B : Criteria Summary

1 VISION, MISSION AND PROGRAM EDUCATIONAL OBJECTIVES (50)

Total Marks 50.00

1.1 State the Vision and Mission of the Department and Institute (5)

Total Marks 5.00

Institute Marks : 5.00

Vision of the institute	To develop the quality learning centre in Chemical Technology for sustainable regional development.
Mission of the institute	Mission Statement: M1: To cater quality academic and research programs in Chemical Technology. M2:To develop the products,processes and technology in the field of Chemical Technology. M3:- To provide technological leadership for industrial and societal economic growth and benefit of the country.
Vision of the Department	To develop the quality centre in Chemical technology for sustainable regional development
Mission of the Department	

Mission No.	Mission Statements
M1	To cater quality academic and research program in Chemical Technology
M2	To develop the products ,processes and technology in the field of Chemical technology
M3	To provide technological leadership for industrial and societal economic growth and benefit of the country

1.2 State the Program Educational Objectives (PEOs) (5)

Total Marks 5.00

Institute Marks : 5.00

PEO No.	Program Educational Objectives Statements
PEO1	Successful career : To provide solid foundation in scientific and engineering fundamentals required to solve technological problems of industries.
PEO2	To create trained undergraduates as per the current industrial requirements as well as prepare them for higher learning research and industry
PEO3	Higher learning:- To train students with good scientific and engineering logics to comprehend, analyze, design and create novel products as well as solutions for the real time problems
PEO4	Multidisciplinary Skills:- To encourage students lifelong learning skills, entrepreneurship abilities, ethical values for a successful professional career in the industry.
PEO5	To sensitize students to local and global need of environment, protection and sustainability

1.3 Indicate where the Vision, Mission and PEOs are published and disseminated among stakeholders (15)

Total Marks 15.00

Institute Marks : 15.00

Particulars	Internal Stake Holders	External Stake Holders
University website (www.bamu.ac.in) http://www.bamu.ac.in /default.aspx?alias=www.bamu.ac.in/dept-of-chemical-technology	YES	YES
Brochures	YES	YES
HOD chamber	YES	YES
Faculty rooms	YES	
Class rooms	YES	
Laboratories	YES	
Seminar Hall	YES	YES

To create awareness among internal and external stakeholders, effective process implementation is followed. Internal stakeholders including Administration, Board of Study Members, Faculty, supporting staff, students etc. and external stakeholders including employers, industry, alumni, parents, etc are made aware of the process. The Vision & Mission statements are published and disseminated through the following means:

1. Institute website

2. It is displayed at Departmental office and prominent locations in the Department and Workshop so that it can be viewed by the students, parents, faculty members and others.

3. It is briefed to newly admitted students and their parents during the induction programme conducted by the department at the start of the academic year

1.4 State the process for defining the Vision and Mission of the Department, and PEOs of the program (15)

Total Marks 15.00

Institute Marks : 15.00

Students: The entire scope of outcome based education revolves around the students and hence they are the principal stake holders. · Faculty & Staff: The faculty is the driving force through which the concept of outcome based education can be accomplished.

· Industries/Research Organizations/Employers: The industries & employers provide broader perspectives towards the definition & realization of the stated objectives.

· Alumni: The alumni being the recipients of the knowledge imparted at the institute are better judges of the system and hence their opinions play an important role in accomplishing the PEOs of the UG Programme.

· Parents: It is essential to consider the opinions of parents because welfare of their wards has a direct bearing on accomplishing the PEOs of the UG Programme.

The process for defining the vision and mission of the department is as mentioned below; Series of meeting with students and staff, collecting feedback from industry, alumni and parents are made. Discussion/meetings with staff are regularly organized to derive the departmental vision and mission

The Process for defining the Vision and Mission of the Department:

1. Department vision and mission are derivative components of institute vision and mission.

2. The internal and the external stakeholders are involved in framing or reframing the vision and mission of the department.

3. The internal stakeholders are a. Management b. Governing Council Body members c. Faculty members d. Students

4. The external stakeholders are a. Alumni members b. Parents c. Industry members

5. Discussions, brainstorming sessions are made among the members to arrive on vision and mission statements.

- The Department of Chemical Technology has developed and maintained a well defined set of educational objectives and desired program outcomes.
- The educational objectives of the Chemical Technology programs relate to all of our stake holders such as students, faculty, employers and alumni.
- The department tries to ensure that these objectives and desired outcomes are met which are generally observed through different assessment tools.
- The educational objectives are met thoroughly through strong bonding with the teachers and the students even beyond the class room boundaries
- The vision and mission statements and PEOs have been discussed in the departmental meetings of faculty members with feedback invited from staff, alumni and industry.
- The statements were presented to Board of Studies (BOS)/AdHOc Borad members for comments and feedback.

1.5 Establish consistency of PEOs with Mission of the Department (10)

Total Marks 10.00

Institute Marks : 10.00

PEO Statements	M1	M2	M3
Successful career : To provide solid foundation in scientific and engineering fundamentals required to solve technological problems of industries.	3	2	2
To create trained undergraduates as per the current industrial requirements as well as prepare them for higher learning research and industry	3	2	3
Higher learning:- To train students with good scientific and engineering logics to comprehend, analyze, design and create novel products as well as solutions for the real time problems	3	3	3
Multidisciplinary Skills:- To encourage students lifelong learning skills, entrepreneurship abilities, ethical values for a successful professional career in the industry.	2	2	2
To sensitize students to local and global need of environment, protection and sustainability	1	-	2

2 PROGRAM CURRICULUM AND TEACHING - LEARNING PROCESSES (100)

Total Marks 100.00

2.1 Program Curriculum (30)

Total Marks 30.00

2.1.1 State the process for designing the program curriculum (10)

Institute Marks : 10.00

The department frames its program curriculum based on the vision and mission of the institution and the department. The curriculum is revised to help students to be industry ready. The process flow for Curriculum Design is as follows:

- Based on Institute/Department mission and vision, and the NBA / AICTE guidelines the department formulates its PSOs.
- The HOD along with all faculty members frames the outline of the curriculum based on norms of AICTE, UGC,

and referring to the curriculum of premier institutions like NITs, IITs, foreign universities etc.

- The course outcomes of all the courses of the curriculum are planned according to the POs and PSOs. Then, the syllabi of various courses are framed.
- The feedback of the curriculum is obtained from various stakeholders such as academicians, industrial experts, alumni, parents, faculty and students.
- The curriculum is presented in Program Assessment Committee and Department Advisory Board and the necessary changes are incorporated.
- The curriculum is submitted to the Board of Studies (BOS) meeting. The recommendations and modifications suggested by BOS members are incorporated in curriculum forwarded to Academic Council.
- After the approval from Academic Council (AC) and Governing Body, the curriculum is finalized. The curriculum is implemented and the impact will be considered for further implementations.

2.1.2 Structure of the Curriculum (5)

Institute Marks : 5.00

ID	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Total Hours	Theory Credits	Practical Credits	Total Credits
1	BSH-101	Mathematics -I	03	0	0	3	03	0	3
2	BSH-102	Chemistry-I	02	01	04	7	03	04	7
3	BED-101	Engineering Graphics	03	01	04	8	03	04	7
4	BED-102	Engineering Application of Computer	01	0	04	5	01	04	5
5	BED-103	Basic Civil Engineering	01	01	0	2	01	0	1
6	SCD-101	Development of Skills -I	0	0	02	2	0	02	2
7	BSH-104	Mathematics-II	3	1	0	4	3	0	3
8	BSH-105	Chemistry-II	3	1	4	8	3	2	5
9	BSH-106	Biology	2	0	0	2	2	0	2
10	BED-106	BASIC MECHANICAL ENGINEERING	2	1	2	5	3	1	4
11	BSH-107	Physics	2	0	2	4	2	1	3
12	BED-109	BEEE	2	1	0	3	3	0	3
13	CEd-101	FM	3	1	3	7	4	1.5	5.5
14	CED-102	PC	3	1	0	4	4	0	4
15	FTD/PTD-101	FC-I/PCeutics-I	3	1	3	7	4	1.5	5.5
16	FTD/PTD-102	FM/PChemistry-I	3	1	4	8	4	2	6
17	CED-104	PUMO	3	1	3	7	4	1.5	5.5
18	CED-105	HT	3	1	3	7	4	1.5	5.5
19	FTD/PTD-105	Biochem/PP	3	0	4	7	3	2	5
20	FTD/PTD-106	FN/APHH	2	0	0	2	2	0	2
21	PTD/FTD-107	Food Chem-II/Pathophysiology	2	0	0	2	2	0	2
22	PTD/FTD-108	Principles of Food Processing/Pharma Chem-II	3	0	4	7	3	2	5
23	CED-108	MAss Transfer Operation	3	0	3	6	3	1.5	4.5
24	CED-109	Chemical Process Industries	3	1	0	4	4	0	4
25	FTD-113/PTD-111	Food Packaging Technology/Pharma Analysis	3	1	3	7	4	1.5	5.5
26	FTD-111/PTD-112	Technology of Cereaql Legumes and Oil Seed/Pharmaceutics-II	3	1	4	8	4	2	6
27	FTD-112/PTD-113	Fruit and Vegetab le Technology/Pharmacognosy	3	1	4	8	3	2	5
28	FTD-114/PTD-114	Technology of MEat Poultry and Fish/Pharmacology	2	0	0	2	2	0	2
		Total	**69**	**17**	**60**	**146**	**81**	**37.0**	**118.0**

2.1.3 State the components of the curriculum (5)

Institute Marks : 5.00

Course Components	Curriculum Content (% of total number of credits of the program)	Total number of contact hours	Total number of credits
Basic Sciences	12	29.00	24
Engineering Sciences	11	29.00	22
Humanities and Social Scie	3	7.00	6
Program Core	38	95.00	74
Program Electives	3	7.00	7
Open Electives	1	3.00	3
Project(s)	4	16.00	8
Internships/Seminars	2	162.00	5
Any other (Please specify)	22	54.00	43
Total number of Credits			**192**

2.1.4 State the process used to identify extent of compliance of the curriculum for attaining the Program Outcomes and Program Specific Outcomes as mentioned in Annexure I (10)

Institute Marks : 10.00

- The course teacher is empowered to understand the scope of course curriculum.
- The course teacher assesses the contribution of the course to attain POs and PSOs.
- CO-PO mapping and PO attainment is assessed by the course teacher.
- Course teacher develops the CAM and PAM matrix.
- The mapping criterion is discussed in the meeting of all faculty members, where comprehensive discussions are conducted.
- CO-PO mapping is verified in the meeting by all faculty members.
- The Program Coordinator conducts brain storming sessions and invites suggestions for the compliance.
- Program Coordinator read and explain each PO and invite opinions / suggestions to the compliance to the POs and PSOs.
- Suggestions are tabulated in the provided format as shown below
- List of identified gaps are highlighted in the same table.

2.2 Teaching-Learning Processes (70)

Total Marks 70.00

2.2.1 Describe Processes followed to improve quality of Teaching & Learning (15) Institute Marks : 15.00

Adherence to Academic Calendar

- Departmental calendar of events is prepared well in advance before the commencement of the semester based on university academic calendar. It consists of the activities planned for the semester which includes internal test schedule, semester end exam dates, conduction of events like guest lectures, cultural event, sports event etc.
- Subject allotment is done well in advance for the staff to prepare lesson plans, course plan, soft and hard copies of the lecture notes.
- Records of students academic progress and behavior are maintained.

Conduct of experiments

· Lab manuals are prepared for courses where practical sessions are conducted.

· Each lab manual consists of list of experiments which can be performed for respective course. The lists of experiments are designed according to Cos and POs. Procedure to conduct experiment, instrument handling procedure is included in lab manual.

· The Standard Operating Procedures (SOP) are designed for each instrument.

· Lab work is assessed by internal and /or external examiner.

· Internal assessment is done on the basis of performance of the student at the time of practical, question and answer sessions etc.

Use of various instructional methods and pedagogical initiatives

· The faculty of department adopts various innovative Teaching & Learning methodologies to create the best learning environment for student.

· These methodologies include traditional chalk board teaching, presentations, video lectures, collaborative learning methods etc. Many concepts are explained with real world illustrations, design and problematic aspects are conveyed by assignments and tutorials.

· Assignments are given to students for improvement in learning performance.

· Resource persons from industries are called for invited talks, workshops and seminars for students knowledge enhancement.

· All the faculty members maintain students attendance registers, course files, academic dairies.

Methodologies to support weak students

- Weak students are identified in the respective courses by respective faculty by monitoring the performance in the CIE and laboratory performance.
- To improve the performance, counselling of the weak student is done and remedial classes conducted for improvement of the performance
- Mentors help the weak students with their academic and other issues.

2.2.2 Quality of end semester examination, internal semester question papers, assignments and evaluation (15) Institute Marks : 15.00

- The assessment and evaluation structure is based on outcome based education (OBE) framework. i.e. formative and summative evaluation as well as direct and indirect method of assessment.
- Calibration matrix / specification tables are designed to assess COs, POs and PSOs. From this specification table is designed for both CIE and SEE.
- While designing the questions the COs is addressed and the Blooms taxonomy is followed.
- The assessment pattern is comprehensively designed to address all domains of learning i.e. cognitive, psychomotor and affective.
- The assessment method is summative and formative i.e. in addition to Semester End Examination (SEE) student learning performance is continuously observed in Continuous Internal Evaluation (CIE).
- In order to make the evaluation process transperent, before declaration of the results, answerbooks are shown to students to address grieviences regarding alloted marks, if any.
- Another purpose of showing the answer books is to make the student understand their lacunas in the present examination and the ways to avoid such lacunas in forthcoming examination.
- The sample question paper format is provided below

Code No: xxxxxxx

Date: xxxxxxxx

Faculty of Science & Technology

First/Second/Third/Fourth Year B. Tech (Chemical) Examination

Nov-Dec /May-June

Subject: xxxxxxxxxxxxx

Time: 3 Hours **Max. Marks: 80**

N.B.:

1) Question No. 1 and 6 are compulsory

2) Attempt any two questions from the remaining of each section

3) Draw a well labeled diagram wherever necessary.

		Section A	Marks
Q. 1.		Objective type, MCQs, True/False, Fill in the blanks, Match the pairs Based on complete syllabus	5x2=10
	A		
	B		
	C		
	D		
	E		
Q. 2	A	Descriptive Questions	07
	B	Descriptive Questions	08
Q. 3		Descriptive Questions / Numerical	15
Q. 4	A	Descriptive Questions	07
	B	Descriptive Questions	08
Q. 5		Short Notes (No Optional sub-bit)	3x5=15
	A		
	B		
	C		
		Section B	
Q. 6		Objective type, MCQs, True/False, Fill in the blanks, Match the pairs Based on complete syllabus	5x2=10
	A		
	B		
	C		
	D		
	E		
Q. 7	A	Descriptive Questions	07
	B	Descriptive Questions	08
Q. 8		Descriptive Questions / Numerical	15
Q. 9	A	Descriptive Questions	07
	B	Descriptive Questions	08
Q. 10		Short Notes (No Optional sub-bit)	3x5=15
	A		
	B		
	C		

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Code No: xxxxxxx

Date: xxxxxxxx

Faculty of Science & Technology

First/Second/Third/Fourth Year B. Tech (Chemical) Examination

Nov-Dec / May-June

Subject: xxxxxxxxxxxxx

Time: 3 Hours **Max. Marks: 40**

N.B.:

1) Question No. 1 and 5 are compulsory

2) Attempt any two questions from the remaining of each section

3) Draw a well labeled diagram wherever necessary.

		Section A	Marks
Q. 1.		Objective type, MCQs, True/False, Fill in the blanks, Match the pairs Based on complete syllabus	3x2=6
	A		
	B		
	C		
Q. 2	A	Descriptive Questions	03
	B		04
Q. 3		Descriptive Questions/Numerical	07
Q. 4		Short Notes (No optional sub-bit)	
	A		03
	B		04
		Section B	
Q. 5		Objective type, MCQs, True/False, Fill in the blanks, Match the pairs Based on complete syllabus	3x2=6
	A		
	B		
	C		
Q. 6	A	Descriptive Questions	03
	B		04
Q. 7		Descriptive Questions/Numerical	07
Q. 8		Short Notes (No optional sub-bit)	
	A		03
	B		04

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2.2.3 Quality of student projects (20) Institute Marks : 20.00

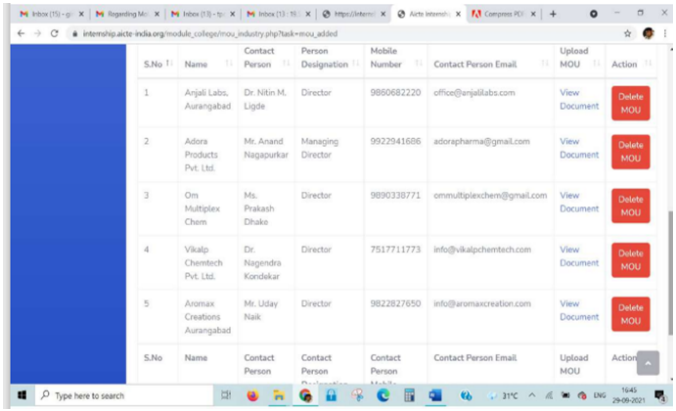
The projects of the students are selected in line with departmental vision, mission and program outcomes. Students are provided with brief idea of various fields for selecting the project ideas. The total credits allotted for project are 08. Projects are selected based on the basis of students interest and the need. Phase-I of the project is evaluated based on problem identification. setting up of the objectives and outcomes of the project. A preliminary literature review is done by the students and later the objectives are refined by the project guide, project co-coordinator and the head of the department. Project is evaluated based on the tests (CIE&SEE) and the presentations. At the end of the semester, students are expected to present and justify the problems. In phase-II, students are expected to clearly define the objectives, work plan and methodology with the support of literature survey. Every week, students will be asked to present the status of the work and achievements of the objectives. Students will be assessed on the basis of their performance by the project guide.

Best projects are selected based on funds received and selected for state level exhibitions. The listed projects ensures no repetition of project work and also encourages students to enhance the previous works. The faculties encourage the students to carry out in house projects and support is provided with all necessary software and hardware. The faculties encourage students to participate in project exhibitions. The project exhibition is aimed to provide a common platform to exhibit their innovations and their work towards excellence in latest technology. The faculties encourages students to publish their project work in reputed journals/conferences.

The students of B.Tech Chemical technology are encouraged to publish their research work in peer reviewed journals and during last three years, 15 project wroks of the B. Tech. Chemical Technology students have been published in reputed journals.

2.2.4 Initiatives related to industry interaction (10) Institute Marks : 10.00

To strengthen interaction with the industries and to keep our students updated with the latest trends in Chemical Technology, the Department has entered into an agreement with the following companies. Industry interactions helps the students to acquire the practical knowledge. So in order to improve the technical abilities of the students, various industry linked activities are carried out.



S.No	Name	Contact Person	Person Designation	Mobile Number	Contact Person Email	Upload MOU	Action
1	Anjali Labs, Aurangabad	Dr. Nitin M. Ligde	Director	9860682220	office@anjalilabs.com	View Document	Delete MOU
2	Adora Products Pvt. Ltd.	Mr. Anand Nagapurkar	Managing Director	9922941686	adorapharma@gmail.com	View Document	Delete MOU
3	Om Multiplex Chem	Ms. Prakash Dhake	Director	9890338771	ommultiplexchem@gmail.com	View Document	Delete MOU
4	Vikalp Chemtech Pvt. Ltd.	Dr. Nagendra Kondekar	Director	7517711773	info@vikalpchemtech.com	View Document	Delete MOU
5	Aromax Creations Aurangabad	Mr. Uday Naik	Director	9822827650	info@aromaxcreation.com	View Document	Delete MOU
S.No	Name	Contact Person	Contact Person	Contact Person	Contact Person Email	Upload MOU	Action

2.2.5 Initiatives related to industry internship/summer training (10) Institute Marks : 10.00

Internships:The students are encouraged to take up internship programs during their semester break. Faculty members give their guidelines, suggestions and scope and contact details of an internship. They also help the students by interacting with the industrial experts, provide the students the recommendation letters and other necessary supports. The IQAC coordinator constantly interacts with alumni who are working in the industries and request them to provide necessary guidelines and support for their existing students of Chemical Technology for internships and placements.

3 COURSE OUTCOMES AND PROGRAM OUTCOMES (175) Total Marks 150.00

Define the Program specific outcomes

:

PSO1	Graduates will apply knowledge in chemistry, physics, biology and basic engineering to investigate and solve complex problems in formulation development, processing and research to meet the specified needs with appropriate considerations for the society.
PSO2	Graduates will able to attain ability to control processes by analyzing, applying mathematics, process control, instrumentation and design and integrate knowledge of Chemical Technology techniques in specific industries.
PSO3	Equip students of Chemical Technology in specific industries and create passion among students for lifelong learning process with ethical & professional behavior to serve the profession by research in advanced fields of study.

3.1 Establish the correlation between the courses and the Program Outcomes (POs) & Program Specific Outcomes (25) Total Marks 10.00

Institute Marks : 10.00

No. of Core Courses : 6	C2 : 2	C3 : 2	C4 : 2

Note : Number of Outcomes for a Course is expected to be around 6.

Course Name :	C2 01	Course Year :	2020-2021

Course Name	Statements
C2 01.1	FTD-101 Food Chemistry-I [Theory | Regular] CO ID. Course Outcome CO1 Explain the chemistry underlying the properties and reactions of various food components. CO2 Describe the need for food chemistry and the efficiency of carbohydrates and protein in the industry. CO3 Explain the control of the major chemical and biochemical (enzymatic) reactions that influence food quality with an emphasis on food industry applications.

Course Name :	C2 02	Course Year :	2020-2021

Course Name	Statements
C2 02.1	PTD-101 Pharmaceutics-I [Theory | Regular] CO ID. Course Outcome CO1 Understand the various routes of drug administration and various types of dosage forms CO2 Understand the basic processes of biopharmaceutics and the various sources of drug information CO3 learn the unit operations involved in the manufacturing of various dosage forms CO4 learn the packaging and labelling of various dosage forms CO5 understand the merit, demerits and method of preparation of various mono and bi-phasic formulations and solid oral dosage forms

Course Name :	C3 03	Course Year :	2020-2021

Course Name	Statements
C3 03.1	Process Utilities and Mechanical Operations [Theory | Regular] CO ID. Course Outcome CO 1 Identify various unit operations used in industry CO 2 Solve numerical on-screen analysis CO 3 Compare differential and cumulative screen analysis CO 4 Design and develop instruments for different unit operations CO 5 Remember the laws of crushing and grinding

Course Name :	C3 04	Course Year :	2020-2021

Course Name	Statements
C3 04.1	PTD - 105 Physical Pharmacy [Theory | Regular] CO ID. Course Outcome CO1 Explain the methods used for determining particle size, particle volume and surface area along with the derived properties of powders CO2 Differentiate the surface and interfacial phenomenon CO3 Distinguish between Newtonian and non-Newtonian system and to identify methods for determining viscosity CO4 Describe the types and properties of colloidal dispersions, suspensions and emulsions along with its applications CO5 Understand drug reaction kinetics, stabilization of drugs and its accelerated stability testing CO6 Apply the knowledge of physical properties of powders, liquids, colloidal and coarse dispersions in the design of pharmaceutical dosage forms

Course Name :	C4 05	Course Year :	2021-2022

Course Name	Statements
C4 05.1	FTD-303 Food Packaging Technology [Theory | Regular] CO ID. Course Outcome CO1 Explain the packaging materials and its importance in food Industry CO2 Utilize packaging materials for right application in Food Industry CO3 Explain and check the Barrier properties of Packaging materials to avoid crosscontamination with air, water and printing ink CO4 Describe the standardize testing methods for packaging material to assure quality CO5 Explain packaging laws and regulations meeting standards

Course Name :	C4 06	Course Year :	2021-2022

Course Name	Statements
C4 06.1	PTD - 119 Fine Chemical Technology [Theory | Regular] CO ID. Course Outcome CO1 Grasp the manufacturing of various Fine chemicals and speciality chemicals CO2 Understand the process flow diagram and various process parameters CO3 Identify and solve engineering problems during production

Course Articulation Matrix :

1 . course name : C201

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C201.1	FTD-101 Fc	2	2	1	1	-	-	-	-	-	-	-	-
Average		**2.00**	**2.00**	**1.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2 . course name : C202

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C202.1	PTD-101 Pl	-	-	-	-	-	-	-	2	2	-	-	2
Average		**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**2.00**	**2.00**	**0.00**	**0.00**	**0.00**

3 . course name : C303

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C303.1	Process Uti	3	3	-	-	-	3	3	3	-	-	-	-
Average		**3.00**	**3.00**	**0.00**	**0.00**	**0.00**	**3.00**	**3.00**	**3.00**	**0.00**	**0.00**	**0.00**	**0.00**

4 . course name : C304

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C304.1	PTD - 105 I	2	1	2	1	-	-	-	-	-	-	-	-
Average		**2.00**	**1.00**	**2.00**	**1.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

5 . course name : C405

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C405.1	FTD-303 Fc	2	2	2	2	3	-	-	-	-	-	3	-
Average		**2.00**	**2.00**	**2.00**	**2.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

6 . course name : C406

Course	Statements	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
C406.1	PTD - 119 I	1	1	3	3	-	-	-	-	-	-	-	-
Average		**1.00**	**1.00**	**3.00**	**3.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

1 . Course Name : C201

Course	PSO1	PSO2	PSO3
C201.1	2	2	3
Average	**2.00**	**2.00**	**3.00**

2 . Course Name : C202

Course	PSO1	PSO2	PSO3
C202.1	1	1	2
Average	**1.00**	**1.00**	**2.00**

3 . Course Name : C303

Course	PSO1	PSO2	PSO3
C303.1	2	2	3
Average	**2.00**	**2.00**	**3.00**

4 . Course Name : C304

Course	PSO1	PSO2	PSO3
C304.1	1	2	3
Average	**1.00**	**2.00**	**3.00**

5 . Course Name : C405

Course	PSO1	PSO2	PSO3
C405.1	1	1	3
Average	**1.00**	**1.00**	**3.00**

6 . Course Name : C406

Course	PSO1	PSO2	PSO3
C406.1	1	1	2
Average	**1.00**	**1.00**	**2.00**

Program Articulation Matrix :

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
FTD-101	2.33	2.00	1.00	1	PO5	1	PO7	PO8	PO9	PO10	PO11	PO12
PTD-101	2	2	2	PO4	2	2	PO7	PO8	PO9	PO10	PO11	PO12
CED-104	3	3	PO3	PO4	PO5	3	3	3	PO9	PO10	PO11	PO12
PTD-105	3	2.17	1.83	2	1.67	1.17	1.83	1.00	2.33	1.83	2.67	2.00
FTD 113	1.00	2.00	2.75	3.00	2.67	1.00	PO7	1.00	PO9	PO10	PO11	PO12
PTD-119	3	2	2	1	3	2	3	3	3	3	3	2
CRE-115	2.33	2.33	2	3	PO5	2.5	PO7	PO8	PO9	PO10	PO11	PO12
BED-111	2.6	2.25	3	PO4	3.00	2.5	PO7	3.00	PO9	PO10	PO11	PO12
PTD-131	PO1	2.00	PO3	2.00	PO5	PO6	PO7	2.00	PO9	PO10	2.00	2.00
FTD-119	2.00	3.00	PO3	2.00	3.0	3.00	PO7	PO8	PO9	PO10	PO11	PO12
BSH-101	2.5	2.5	PO3	PO4	PO5	2	PO7	PO8	PO9	PO10	2	PO12
BSH-102	2	2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-101	1.75	1.5	1.6	PO4	1.5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-102	2	2	2	PO4	1	PO6	2	PO8	PO9	PO10	PO11	PO12
BED-103	2	PO2	PO3	PO4	PO5	PO6	2	1.5	PO9	PO10	PO11	PO12
BSH-104	2.5	2.5	PO3	3	PO5	2	PO7	PO8	PO9	PO10	2	PO12
BSH-105	2	2	PO3	PO4	PO5	PO6	PO7	2	PO9	PO10	PO11	PO12
BSH-106	2.33	2	PO3	PO4	2	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-106	2	2	2	PO4	2	2	PO7	PO8	PO9	PO10	PO11	PO12
BSH-107	2	PO2	2	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-109	PO1	PO2	3	PO4	PO5	PO6	3	3	3	3	2	3
CED-101	3	3	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CED-102	3	3	3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-102	PO1	3	PO3	3	PO5	PO6	PO7	3	3	3	PO11	3
CED-105	2.67	2	PO3	PO4	PO5	1	3	3	PO9	PO10	PO11	PO12
PTD-106	2	2	PO3	2	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-107	2	2	PO3	2	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-108	2	PO2	2	PO4	2	PO6	2	PO8	PO9	PO10	PO11	PO12
CED-108	2.6	2	2.5	2.5	2	3	PO7	3	PO9	PO10	PO11	PO12
CED-109	2.6	2.5	3	1	3	3	PO7	3	PO9	PO10	PO11	PO12
PTD-111	PO1	PO2	PO3	PO4	PO5	PO6	PO7	2	2	PO10	PO11	2
PTD-112	3	2.4	2	2	2	2.2	2.4	1	2.4	2.4	2.6	2
PTD-113	PO1	2	PO3	PO4	1	PO6	1	PO8	PO9	PO10	PO11	1
PTD-114	PO1	3	3	PO4	PO5	PO6	3	3	3	PO10	3	3
CED-111	2.6	2.5	3	PO4	3	3	PO7	3	PO9	PO10	PO11	PO12
CED-112	2.5	2	3	2	PO5	2	PO7	3	PO9	PO10	PO11	PO12
BED-110	1.5	2	3	PO4	2	PO6	2	2	1	PO10	2	PO12
PTD-121	2	2	2	PO4	2	2	2	2	PO9	PO10	2	PO12
PTD-118	PO1	PO2	PO3	PO4	1	PO6	PO7	PO8	2	2	PO11	PO12
PTD-119	3	2	2	1	3	2	3	3	3	3	3	2
PTD-120	2	2	PO3	2	2	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-124	PO1	2	2	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2
PTD-125	PO1	2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1
PTD-126	2	2	PO3	PO4	2	PO6	PO7	2	PO9	PO10	PO11	PO12
BED-112	2	PO2	PO3	PO4	PO5	PO6	2	2	2	PO10	2	PO12
BSH-110	1.5	2	3	PO4	2	PO6	2	PO8	2	1	PO11	2
PTD-130	2	PO2	2	PO4	2	PO6	2	PO8	PO9	2	PO11	PO12
PTD-132	PO1	2	PO3	2	PO5	2	PO7	PO8	2	PO10	2	PO12
PTD-133	PO1	2	PO3	2	PO5	2	PO7	PO8	2	PO10	2	PO12
PTD-134	PO1	2	PO3	2	PO5	2	PO7	PO8	2	PO10	2	PO12
FTD-102	1	1.5	2	1.67	2.6	3	PO7	PO8	PO9	PO10	PO11	PO12
FTD-105	2	2.25	1.67	1	1.5	1	PO7	PO8	PO9	PO10	PO11	PO12
FTD-106	2	2	1.75	1.33	1.25	2	1	PO8	PO9	PO10	PO11	PO12
FTD-107	2	2	2.33	2.6	2	1	PO7	PO8	PO9	PO10	PO11	PO12
FTD-108	1.5	2	2.25	1.5	1	1	2	PO8	PO9	PO10	PO11	PO12
FTD-111	2	1.5	2	1.6	1.67	1	1	1	PO9	PO10	PO11	PO12
FTD-112	1.67	2	1.67	2	1.33	2	1.5	2	PO9	PO10	PO11	PO12
FTD-113	1	2	2.75	3	2.67	1	PO7	1	PO9	PO10	PO11	PO12
FTD-114	0.93	2.33	2.17	2.53	2.80	PO6	PO7	PO8	PO9	PO10	1.87	PO12

FTD-118	1.47	1.22	1.47	1.28	1.28	0.73	1.47	PO8	PO9	PO10	PO11	PO12
FTD-119	2	3	PO3	2	3	3	PO7	PO8	PO9	PO10	PO11	PO12
FTD-120	1.33	PO2	PO3	2	2.80	3	PO7	2	PO9	PO10	PO11	PO12
FTD-121	1.2	1.67	2.5	1.5	1.6	1	PO7	PO8	PO9	PO10	3	PO12
FTD-124	1	1	PO3	1	2.2	2.6	PO7	3	PO9	PO10	PO11	PO12
FTD-125	2	1.67	2.67	1.67	1.67	1	PO7	PO8	PO9	PO10	PO11	PO12
FTD-126	1	2	PO3	2.8	PO5	PO6	PO7	3	PO9	3	PO11	PO12
FTD-130	PO1	PO2	2	2	1	2	2.33	1	1.5	2	1	3
FTD-131	PO1	1	PO3	2	2.25	2.5	2	1	2	PO10	PO11	3
FTD-132	PO1	2.5	1.5	2	1	1	3	1	2	PO10	3	2.33
FTD-133	PO1	PO2	PO3	PO4	2	1.5	PO7	2.33	2.33	1.5	2	PO12
FTD-134	PO1	PO2	PO3	PO4	PO5	2	2.5	2	2	3	PO11	PO12

Course	PSO1	PSO2	PSO3
BED-101	1	2	PSO3
BED-102	2	2	2
BED-103	1	PSO2	PSO3
BED-106	2	PSO2	PSO3
BED-109	3	PSO2	PSO3
BED-110	PSO1	2	2
BED-111	2	2	0
BED-112	1	2	1
BSH-101	2	1.67	3
BSH-102	1.67	1	PSO3
BSH-104	2	1.67	3
BSH-105	2	1	PSO3
BSH-106	2.5	PSO2	PSO3
BSH-107	2	1	PSO3
BSH-110	2	1	PSO3
CED-101	1	2	PSO3
CED-102	2	2	PSO3
CED-104	02	2	0
CED-105	1	2	PSO3
CED-108	2	2	PSO3
CED-109	1	2	PSO3
CED-111	2	3	PSO3
CED-112	2	2	PSO3
CED-115	0	2.5	0
FTD-101	2.33	2	0
FTD-102	2	2	PSO3
FTD-105	1.5	PSO2	PSO3
FTD-106	1.4	PSO2	PSO3
FTD-107	2	2	PSO3
FTD-108	2	PSO2	PSO3
FTD-111	1.4	1	PSO3
FTD-112	1.67	2	PSO3
FTD-113	1	PSO2	PSO3
FTD-113	1	0	0
FTD-114	1.33	PSO2	PSO3
FTD-118	2	2	PSO3
FTD-119	2.5	0	0
FTD-120	2	1	PSO3
FTD-121	1.6	PSO2	1
FTD-124	1	1	2
FTD-125	1.67	PSO2	PSO3
FTD-126	1	1.5	PSO3
FTD-130	2	1	2
FTD-131	1	2	PSO3
FTD-132	1.5	PSO2	2
FTD-133	2	1.5	2

FTD-134	2	2	2
PTD-101	2	2	0
PTD-102	3	3	PSO3
PTD-105	2	1	0
PTD-106	2	2	PSO3
PTD-107	PSO1	2	PSO3
PTD-108	2	1	1
PTD-111	2	2	2
PTD-112	2	1	2
PTD-113	PSO1	PSO2	2
PTD-114	3	3	3
PTD-118	2	PSO2	PSO3
PTD-119	1	2	2
PTD-120	2	1	1
PTD-121	1	1	2
PTD-124	2	2	2
PTD-125	PSO1	PSO2	2
PTD-126	1	2	2
PTD-130	1	PSO2	2
PTD-131	2	0	2
PTD-132	1	1	PSO3
PTD-133	2	1.5	2
PTD-134	2	2	2

3.2 Attainment of Course Outcomes (75) Total Marks 75.00

Institute Marks : 10.00

a. List of tools used to assess the attainment of COs:
   i. CIE tests
   ii. Internal Laboratory test
   iii. Project/Seminar
   iv. Semester End examination
b. Quality/Relevance of data collection
   i. CIE tests: Three tests are conducted during every semester to award Final IA marks. These tests will prepare the students for the University examination.
   ii. Internal Laboratory test: At the end of the semester, laboratory test conduction and evaluation is done. This test will enhance the confidence of students to face SEE practical examination.
   iii. Project /Seminar evaluation: Evaluation is done in phases by a committee (HOD, two senior faculties inclusive of the project guide).
   iv. Semester examination:

- Both theory and practical/project examination are conducted as per the calendar of events announced.
- Evaluation of the anwser books is done as per the predefined mechanism and schedule.
- Declaration of results is done after display of anser books and addressing the related grieviences.

3.2.2 Record the attainment of Course Outcomes of all courses with respect to set attainment levels (65)

Institute Marks : 65.00

CO Attainment 2019-23 batch

B. Tech (Chemical Technology)

Sample Attainment of Cos of the Course BED-110

Subject Code	Subject			Year	Class	Target
BED-110	Industrial Safety & Management			2021-22	TY	50%
Particulars	CO1	CO2	CO3	CO4	CO5	CO6
Internal CO attainment	2.5	1.92	2.17	2.9		
University CO Attainment	2.71	2.62	2.45	2.27		
Final CO Attainment	2.67	2.48	2.39	2.40		

Fig. Sample Attainment of COs of the Course BED-110

Internal CO Attainment

Sr.	Course Code	Course Title	CO1	CO2	CO3	CO4	CO5	CO6	CO7
1	BSH-101	Mathematics -I	1.27	1.17	2.20	1.10			
2	BSH-102	Chemistry-I	2.27	2.20	1.33	1.90			
3	BED-101	Engineering Graphics	2.90	2.10	1.70	2.25	2.50		
4	BED-102	Engineering Application of Computer	2.20	1.20	1.67	1.00			
5	BED-103	Basic Civil Engineering	2.33	1.95	2.20	1.60			
6	BSH-104	Mathematics-II	1.67	1.67	2.75	2.10			
7	BSH-105	Chemistry-II	2.50	1.67	2.75	2.50			
8	BSH-106	Biology	2.00	1.67	2.50	2.10			
9	BED-106	Basic Mechanical Engineering	2.67	2.50	1.50	2.67			
10	BSH-107	Physics	2.00	2.00	1.67	2.50			
11	BED-109	Basics of Electricals and Electronics Engineering	3	2.75	3	2.75	2.75	2.67	
12	CED-101	Fluid Mechanics	2.75	3	2.75				
13	CED-102	Process Calculations	2.5	2.5	2.75				
14	PTD-101	Pharmaceutics-I	1.5	2.67	1.8	2.2	1.9		
15	PTD-102	Pharmaceutical Chemistry-I	2.5	2.67	1.5	2.75	3	2.5	
16	CED-104	Process Utilities and Mechanical Operations	2.2	2.5	1.8	2.67	2.5		
17	CED-105	Heat Transfer	3	2.67	2.5				
18	PTD-105	Physical Pharmacy	2.5	2.67	2.67	2.5	2.2	1.9	
19	PTD-106	Anatomy Physiology & Health Hygiene	2.75	2.67	2.4	1.9	2.4		
20	PTD-107	Pathophysiology	1.8	1.5	2.5	2.75			
21	PTD-108	Pharmaceutical Chemistry-II	2.5	2.67	2.5	2.67	2.5		

22	CED-108	Mass Transfer Operations	2.7	2.2	3	2.9	2.9			
23	CED-109	Chemical Process Industries	2.67	2.5	2.7	3				
24	PTD-111	Pharmaceutical Analysis	2.2	2.67	2.67	2.5	2.2			
25	PTD-112	Pharmaceutics-II	2.75	2.5	2.2	2.75	2.5			
26	PTD-113	Pharmacognosy	2.5	2.2	2.75	2.5	2.5			
27	PTD-114	Pharmacology	2.2	2.5	2.5					
28	CED-111	Industrial Pollution Control	2.67	2.67	2.5	3	2.75			
29	CED-112	Process Control Dynamics	2.2	2.75	2.5					
30	PTD-118	Phytochemistry	1.5	1.2	1.9	1.5				
31	PTD-119	Fine Chemical Technology	2.67	1.9	1.9					
32	PTD-120	Biopharmaceutics	2.2	2.67	1.8	2.2	2.1			
33	PTD-121	Professional Elective-I								
34		(Bulk Drug Technology)	2.2	2.67	2.67	2.4	2.2	2.5	2.4	
35	BED-110	Open Elective								
36		(Industrial Safety & Management)	2.5	1.92	2.17	2.9				
37	CED-115	Chemical Reaction Engineering	2.5	2.2	2.75	2.5	2.3			
38	BED-111	Plant Design & Layout	2.7	2.45	2.2	2.75	3	2.75		
39	PTD-124	Professional Core Elective-II								
40		(Cosmetic Technology)	2.67	2.5	1.77	2.3	1.9	2.75		
41	PTD-125	Herbal Drug Technology	1.9	2.3	2.67	2.4				
42	PTD-126	Quality Assurance Techniques	2.75	2.6	2.2	1.5				
43	BED-112	Economics and Business Management	2.67	2.75	2.5					
44	BSH-110	Applied Statistics	2.67	2.5	1.9	2.67				
45	PTD-130	Entrepreneurship Development in Pharmaceutical Industry	2.2	2.75	2.2	2.5				
46	PTD-131	Pharmacy Practice	2.5	2.2	1.9	2.75	2.67	2.67	2.75	
47	PTD-132	Pharmaceutical Biotechnology	1.5	2.75	2.67	2.2				

Sr.	Course Code	Course Title	CO1	CO2	CO3	CO4	CO5	CO6	CO7
1	BSH-101	Mathematics -I	1.27	1.17	2.20	1.10			
2	BSH-102	CHEMISTRY-I	2.27	2.20	1.33	1.90			
3	BED-101	Engineering Graphics	2.90	2.10	1.70	2.25	2.50		
4	BED-102	Engineering Application of Computer	2.20	1.20	1.67	1.00			
5	BED-103	Basic Civil Engineering	2.33	1.95	2.20	1.60			
6	BSH-104	Mathematics-II	1.67	1.67	2.75	2.10			
7	BSH-105	Chemistry-II	2.50	1.67	2.75	2.50			
8	BSH-106	Biology	2.00	1.67	2.50	2.10			
9	BED-106	Basic Mechanical Engineering	2.67	2.50	1.50	2.67			
10	BSH-107	Physics	2.00	2.00	1.67	2.50			
11	BED-109	Basics of Electricals and Electronics Engineering	3	2.75	3	2.75	2.75	2.67	
12	CED-101	Fluid Mechanics	2.75	3	3				
13	CED-102	Process Calculations	2.5	3	2.75				
14	FTD-101	Food Chemistry-I	2.5	3	2.75				
15	FTD-102	Food Microbiology	2.75	2.2	3	2.67	2.5		

16	CED-104	Process Utilities and Mechanical Operations	2.2	2.67	2.2	2.67	3		
17	CED-105	Heat Transfer	3	2.67	3				
18	FTD-105	Food Biochemistry	2.5	2.67	3				
19	FTD-106	Food Nutrition	2.5	2.75	3	3	2.75		
20	FTD-107	Food Chemistry-II	2.4	2.5	3	2.75			
21	FTD-108	Principles of Food Processing	2.75	3	2.7	2.5			
22	CED-108	Mass Transfer Operations	2.7	2.2	3	2.9			
23	CED-109	Chemical Process Industries	2.67	2.5	2.7	3			
24	FTD-111	Technology of Cereals, Legumes and Oil Seeds	2.7	3	2.5				
25	FTD-112	Fruit and Vegetable Technology	2.67	2.7					
26	FTD-113	Food Packaging Technology	3	2.9	2.5				
27	FTD-114	Technology of Meat, Poultry and Fish	1	1.5	1.2				
28	CED-111	Industrial Pollution Control	1.5	1.72	1	1.8	1.5		
29	CED-112	Process Control Dynamics	2.2	2.75	2.5				
30	FTD-118	Bakery & Confectionary Technology	1.5	3	2.9	2.75			
31	FTD-119	Dairy Products Processing	2	2.2	2.5	2.75	2.67	2.5	
32	FTD-120	Food Biotechnology	2.2	2.4	2.6	2.7	2.2		
33	FTD-121	Professional Elective-I							
34		(Food Additives)	2.5	1.67	2.5	2.67	3		
35	BED-110	Open Elective							
36		(Industrial Safety & Management)	2.5	1.92	2.17	2.9			
37	CED-115	Chemical Reaction Engineering	2.5	2.2	2.75	2.5	2.3		
38	BED-111	Plant Design & Layout	2.7	2.45	2.2	2.75	3	2.75	
39	FTD-124	Professional Core Elective-II							
40		(Food Regulation & Quality Control)	2.2	2.75	2.5	2.75			
41	FTD-125	Spices & Flavor Technology	2.75	3	2.2	2.2			
42	FTD-126	Techniques in Food Analysis	3	2.75	2.5	2.2	3	2.75	
43	BED-112	Economics and Business Management	2.75	3	2.5	2.7			
44	BSH-110	Applied Statistics	2.2	2.75	2.2	2.5			
45	FTD-130	Entrepreneurship Development in Food Industry	2.5	2.5	2.75	2.5	3	2.75	
46	FTD-131	Specialty Food Processing Technology	2.75	2.9	3	2.2	2.75	2.5	2.75
47	FTD-132	Food Safety and Standards	2.5	2.5	2.7	2.8	3	2	

Final CO Attainment

r	Code	Course	CO1	CO2	CO3	CO4	CO5	CO6	CO7
1	BSH-101	Mathematics -I	1.69	1.99	2.04	1.42			
2	BSH-102	Chemistry-I	1.65	1.53	1.47	1.58			
3	BED-101	Engineering Graphics	2.98	2.82	2.74	2.85	2.90		
4	BED-102	Engineering Application of Computer	2.84	2.16	2.39	2.20			
5	BED-103	Basic Civil Engineering	2.47	2.50	2.20	2.08			
6	BSH-104	Mathematics-II	1.93	1.93	2.15	2.02			
7	BSH-105	Chemistry-II	2.10	1.93	2.15	2.10			
8	BSH-106	Biology	2.00	1.93	2.10	2.02			

9	BED-106	Basic Mechanical Engineering	2.13	2.10	1.90	2.13			
10	BSH-107	Physics	2.00	2.00	1.93	2.10			
11	BED-109	Basics of Electricals and Electronics Engineering	3.00	2.95	3.00	2.95	2.95	2.93	
12	CED-101	Fluid Mechanics	2.95	2.76	2.55				
13	CED-102	Process Calculations	1.70	2.26	1.99				
14	PTD-101	Pharmaceutics-I	2.70	2.93	2.76				
15	PTD-102	Pharmaceutical Chemistry-I	2.90	2.93	2.70	2.95	3.00		
16	CED-104	Process Utilities and Mechanical Operations	2.84	2.90	2.76	2.93	2.90		
17	CED-105	Heat Transfer	3.00	2.93	2.90				
18	PTD-105	Physical Pharmacy	2.90	2.93	2.93	2.90	2.84		
19	PTD-106	Anatomy Physiology & Health Hygiene	2.95	2.93	2.88	2.78	2.88		
20	PTD-107	Pathophysiology	2.76	2.70	2.90	2.95			
21	PTD-108	Pharmaceutical Chemistry-II	2.50	2.42	2.59	2.56			
22	CED-108	Mass Transfer Operations	2.94	2.58	2.86	2.84	2.98		
23	CED-109	Chemical Process Industries	2.93	2.90	2.94	3.00			
24	PTD-111	Pharmaceutical Analysis	2.84	2.93	2.93	2.90	2.84		
25	PTD-112	Pharmaceutics-II	2.95	2.90	2.84	2.95	2.90		
26	PTD-113	Pharmacognosy	2.90	2.84	2.95	2.90	2.90		
27	PTD-114	Pharmacology	2.84	2.90	2.90				
28	CED-111	Industrial Pollution Control	2.61	2.61	2.66	2.36	2.31		
29	CED-112	Process Control Dynamics	2.04	2.15	2.10				
30	PTD-118	Phytochemistry	2.04	2.16	1.98	2.30			
31	PTD-119	Fine Chemical Technology	2.53	2.78	1.29				
32	PTD-120	Biopharmaceutics	2.84	2.93	2.76	2.84	2.82		
33	PTD-121	Professional Elective-I							
34		(Bulk Drug Technology)	0.44	2.53	2.93	2.88	2.52		
35	BED-110	Open Elective							
36		(Industrial Safety & Management)	2.67	2.48	2.39	2.40			
37	CED-115	Chemical Reaction Engineering	2.90	2.36	2.95	2.90	2.86		
38	BED-111	Plant Design & Layout	2.94	2.89	2.54	2.55	2.52	2.55	
39	PTD-124	Professional Core Elective-II							
40		(Cosmetic Technology)	2.93	1.70	2.07	2.64	2.78	2.95	
41	PTD-125	Herbal Drug Technology	2.78	2.66	2.73	2.88			
42	PTD-126	Quality Assurance Techniques	1.46	1.67	1.54	1.70			
43	BED-112	Economics and Business Management	2.40	2.26	2.10	1.40			
44	BSH-110	Applied Statistics	2.53	2.10	2.14	2.93			
45	PTD-130	Entrepreneurship Development in Pharmaceutical Industry	2.20	2.35	2.24	2.10			
46	PTD-131	Pharmacy Practice	2.90	2.84	2.78	2.95	2.93	2.93	2.95
47	PTD-132	Pharmaceutical Biotechnology	2.70	2.95	2.93	2.84			

Sr	Code	Course	CO1	CO2	CO3	CO4	CO5	CO6	CO7
1	BSH-101	Mathematics -I	1.69	1.99	2.04	1.42			
2	BSH-102	CHEMISTRY-I	1.65	1.53	1.47	1.58			
3	BED-101	Engineering Graphics	2.98	2.82	2.74	2.85	2.90		
4	BED-102	Engineering Application of Computer	2.84	2.16	2.39	2.20			
5	BED-103	Basic Civil Engineering	2.47	2.50	2.20	2.08			
6	BSH-104	Mathematics-II	1.93	1.93	2.15	2.02			
7	BSH-105	Chemistry-II	2.10	1.93	2.15	2.10			
8	BSH-106	Biology	2.00	1.93	2.10	2.02			
9	BED-106	Basic Mechanical Engineering	2.13	2.10	1.90	2.13			
10	BSH-107	Physics	2.00	2.00	1.93	2.10			

11	BED-109	Basics of Electricals and Electronics Engineering	3.00	2.95	3.00	2.95	2.95	0.53	
12	CED-101	Fluid Mechanics	2.95	2.76	2.60				
13	CED-102	Process Calculations	1.70	2.36	1.99				
14	FTD-101	Food Chemistry-I	2.90	3.00	2.89				
15	FTD-102	Food Microbiology	2.95	2.84	3.00	2.93	2.90		
16	CED-104	Process Utilities and Mechanical Operations	2.84	2.93	2.84	2.93	3.00		
17	CED-105	Heat Transfer	3.00	2.93	3.00				
18	FTD-105	Food Biochemistry	2.90	2.93	3.00	2.40			
19	FTD-106	Food Nutrition	2.90	2.95	3.00	3.00	2.95		
20	FTD-107	Food Chemistry-II	2.88	2.90	3.00	2.95			
21	FTD-108	Principles of Food Processing	2.95	3.00	2.94	2.90			
22	CED-108	Mass Transfer Operations	2.94	2.58	2.86	2.98	2.14		
23	CED-109	Chemical Process Industries	2.93	2.90	2.94	3.00	2.40		
24	FTD-111	Technology of Cereals, Legumes and Oil Seeds	2.94	3.00	2.90				
25	FTD-112	Fruit and Vegetable Technology	2.93	2.94					
26	FTD-113	Food Packaging Technology	3.00	2.98	2.90	2.40	2.40		
27	FTD-114	Technology of Meat, Poultry and Fish	2.60	2.70	2.64	2.40	2.40	2.40	2.40
28	CED-111	Industrial Pollution Control	2.38	2.42	2.36	2.12	2.06		
29	CED-112	Process Control Dynamics	2.04	2.15	2.10				
30	FTD-118	Bakery & Confectionary Technology	2.06	2.55	2.18	0.55			
31	FTD-119	Dairy Products Processing	2.54	2.44	2.58	2.69	2.53	2.70	
32	FTD-120	Food Biotechnology	2.58	2.56	2.32	2.54	2.44		
33 34	FTD-121	Professional Elective-I (Food Additives)	1.87	2.04	1.96	1.90	1.56		
35 36	BED-110	Open Elective (Industrial Safety & Management)	2.67	2.48	2.39	2.40			
37	CED-115	Chemical Reaction Engineering	2.90	2.36	2.95	2.90	2.86		
38	BED-111	Plant Design & Layout	2.94	2.89	2.54	2.55	2.52	0.55	
39 40	FTD-124	Professional Core Elective-II (Food Regulation & Quality Control)	1.40	1.75	0.84	0.95	0.40	0.48	
41	FTD-125	Spices & Flavor Technology	2.95	3.00	2.84	0.44			
42	FTD-126	Techniques in Food Analysis	1.88	2.31	1.96	2.04	2.06	2.06	
43	BED-112	Economics and Business Management	2.41	2.31	2.10	1.94			
44	BSH-110	Applied Statistics	2.44	2.15	2.20	2.90			
45	FTD-130	Entrepreneurship Development in Food Industry	2.90	1.84	1.89	2.36	2.68	2.31	
46	FTD-131	Specialty Food Processing Technology	2.15	2.38	1.80	1.64	1.15	2.90	1.99
47	FTD-132	Food Safety and Standards	2.90	2.90	2.94	2.96	2.74	2.54	

*The set target level is 02.

3.3 Attainment of Program Outcomes and Program Specific Outcomes (75) Total Marks 65.00

3.3.1 Describe assessment tools and processes used for measuring the attainment of each Program Outcome and Program Specific Outcomes (10) Institute Marks : 10.00

		Direct assessment Methods
Sl. No	**Direct Assessment**	**Method Description**
1	Internal Assessment Test	1. CIE comprises of 2 tests, each of 10/20 marks with 0.5/l hr duration and ESE of 40/80 marks with 2/3 hr duration 2. Each CIE will be covering 2-3 complete unit 3. Internal assessment test paper will be as per the approved format of Examination unit of the Chemical Technology 4. Assignment/quiz/ objective tests carries marks as per the teachers discretion for Teachers Assesment
2	Lab Assignments	1. Each laboratory subject is evaluated for 50 marks (25 CIE and 25 SEE) 2. Allocation of 25 marks for CIE 3. Performance and Journal write-up: marks for each experiment = 25 marks/No. of proposed experiments. 4. One practical test, for 25 marks (5 write-up, 10 conduction, calculation, Result etc., 10 –viva-voce)
3	Semester End Examination	1. No. of questions: 10 for 80 marks paper and 8 for 40 marks paper 2. No. of Questions per section: 5 for 80 marks paper and 4 for 40 marks paper 3. Compulsary Questions: 1 & 6 for 80 marks paper and 1 & 5 for 40 marks paper 4. Any two questions are to be answered from each section
4	Practical Semester Examination	1. Allocation of 25 marks for SEE, 2. Major and Minor : (Write-up, conduction, calculation and results) 3. Spotting 4. Viva-Voce
5	Project	1. The total credits allotted for project is 8 credits, Which is divided into project Phase –I and Phase-II. Phase-I consists of 4 credits and Phase-II of 4 credits. Projects will be selected based on the need based and student's interest. Phase-I will be evaluated based on problem identification. 2. In project phase-II students are expected to clearly define the objectives, work plan and Methodology with the support literature survey.

Direct measures are provided through direct examinations or observations of student knowledge or skills against measureable course outcomes. The knowledge and skills described by the task. Throughout the semester the faculty records the performance of each student on each course outcome. At the end of the semester students receive grades from external exams.Direct methods display the student's knowledge and skills from their performance in the continuous internal assessment tests, semester end examinations, seminars and laboratory assignments etc. These methods provide a sampling of what students know and provide strong evidence of student learning.They assess opinions or thoughts about the graduate's knowledge or skills

The attainment of PO can be assessed by evaluating

1. Evaluation of Internal exam: The Continuous Internal Evaluation is conducted for attainments of Cos which in turn is related to the PO at each stage (2 CIE's) of the learning the course.
2. Evaluation of seminar/assignment: Seminar/assignment is conducted for each course and evaluated for 5% of the marks.
3. Evaluation of lab test: Laboratory courses are evaluated by conducting an internal assessment at end of the each semester.
4. Evaluation of project work: The project work of each student is evaluated at each stage of the work.
5. Semester end examination: At end of the each semester examination is conducted and evaluated for attainment of COS

Individual faculty prepares the continuous internal evaluation questions/problems, laboratory work or assignment/quizzes, or other graded work that probes specific learning objectives for their direct assessment. After evaluating the individual student performance measures for these items are logged, often in a spreadsheet. These performance measures are based on a standard that indicates whether a student substantially understands the topic area. For instance, a faculty member might decide that a grade of 50% or higher on an exam problem indicates a substantial or acceptable ability with the topic or related learning objective.

The assessment of student performance in a subject is commonly done based on examination. In general, examination may have different objectives, like achievement testing, prediction testing, endurance testing and creativity testing and testing for ranking. In technical education, the assessment has to be preferably of achievement of testing type, so that the student knowledge, understanding and competence in the subject studied is properly assessed and certified.

Typically achievement testing is done in two parts namely Continuous Internal Evaluation (CIE) and Semester End Evaluation (SEE). Both of them are important in assessing the achievement of a student.

Each course is either assessed for 50 or 100 marks with weight-age distribution for CIE and SEE i.e., 20 for CIE and 80 for SEE. The standards of passing CIE and SEE for each course registered is as given in table **3.3.1b**

Standards of Passing

Evaluation Method	Passing requirements
Continuous Internal Evaluation (CIE)	40% of Max marks
Semester End Evaluation (SEE)	40% of Max marks

3.3.2 Provide results of evaluation of each PO & PSO (65)

Institute Marks : 55.00

PO Attainment

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-101	2	2	2	PO4	2	2	PO7	PO8	PO9	PO10	PO11	PO12
CED-104	3	3	PO3	PO4	PO5	3	3	3	PO9	PO10	PO11	PO12
PTD-105	3	2.17	1.83	2	1.67	2.17	1.83	1	2.33	1.83	2.67	2
FTD 113	1	2	2.75	3	2.67	1	PO7	1	PO9	PO10	PO11	PO12
PTD-119	3	2	2	1	3	2	3	3	3	3	3	2
CRE-115	2.33	2.33	2	3	PO5	2.5	PO7	PO8	PO9	PO10	PO11	PO12
BED-111	2.6	2.25	3	PO4	3	2.5	PO7	3	PO9	PO10	PO11	PO12
PTD-131	PO1	2	PO3	2	PO5	PO6	PO7	2	PO9	PO10	2	2
FTD-119	2	3	PO3	2	3	3	PO7	PO8	PO9	PO10	PO11	PO12
BSH-101	2.5	2.5	PO3	PO4	PO5	2	PO7	PO8	PO9	PO10	2	PO12
FTD-101	2.33	2	1	1	PO5	1	PO7	PO8	PO9	PO10	PO11	PO12
BED-102	2	2	2	PO4	1	PO6	2	PO8	PO9	PO10	PO11	PO12
BSH-102	2	2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-101	1.75	1.5	1.6	PO4	1.5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-103	2	PO2	PO3	PO4	PO5	PO6	2	1.5	PO9	PO10	PO11	PO12
BSH-104	2.5	2.5	PO3	3	PO5	2	PO7	PO8	PO9	PO10	2	PO12
BSH-105	2	2	PO3	PO4	PO5	PO6	PO7	2	PO9	PO10	PO11	PO12
BSH-106	2.33	2	PO3	PO4	2	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-106	2	2	2	PO4	2	2	PO7	PO8	PO9	PO10	PO11	PO12
BSH-107	2	PO2	2	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-109	PO1	PO2	3	PO4	PO5	PO6	3	3	3	3	2	3
CED-101	3	3	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CED-102	3	3	3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-102	PO1	3	PO3	3	PO5	PO6	PO7	3	3	3	PO11	3
CED-105	2.67	2	PO3	PO4	PO5	1	3	3	PO9	PO10	PO11	PO12
PTD-106	2	2	PO3	2	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-107	2	2	PO3	2	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-108	2	PO2	2	PO4	2	PO6	2	PO8	PO9	PO10	PO11	PO12
CED-108	2.6	2	2.5	2.5	2	3	PO7	3	PO9	PO10	PO11	PO12
CED-109	2.6	2.5	3	1	3	3	PO7	3	PO9	PO10	PO11	PO12
PTD-111	PO1	PO2	PO3	PO4	PO5	PO6	PO7	2	2	PO10	PO11	2
PTD-112	3	2.4	2	2	2	2.2	2.4	1	2.4	2.4	2.6	2
PTD-113	PO1	2	PO3	PO4	1	PO6	1	PO8	PO9	PO10	PO11	1
PTD-114	PO1	3	3	PO4	PO5	PO6	3	3	3	PO10	3	3
CED-111	2.6	2.5	3	PO4	3	3	PO7	3	PO9	PO10	PO11	PO12
CED-112	2.5	2	3	2	PO5	2	PO7	3	PO9	PO10	PO11	PO12
BED-110	1.5	2	3	PO4	2	PO6	2	2	1	PO10	2	PO12
PTD-121	2	2	2	PO4	2	2	2	2	PO9	PO10	2	PO12
PTD-118	PO1	PO2	PO3	PO4	1	PO6	PO7	PO8	2	2	PO11	PO12
PTD-120	2	2	PO3	2	2	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PTD-124	PO1	2	2	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	2
PTD-125	PO1	2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	1
PTD-126	2	2	PO3	PO4	2	PO6	2	PO8	PO9	PO10	PO11	PO12
BED-112	2	PO2	PO3	PO4	PO5	PO6	2	2	2	PO10	2	PO12
BSH-110	1.5	2	3	PO4	2	PO6	2	PO8	2	1	PO11	2
PTD-130	2	PO2	2	PO4	2	PO6	2	PO8	PO9	2	PO11	PO12
PTD-132	PO1	2	PO3	2	PO5	2	PO7	PO8	2	PO10	2	PO12
PTD-133	PO1	2	PO3	2	PO5	2	PO7	PO8	2	PO10	2	PO12
PTD-134	PO1	2	PO3	2	PO5	2	PO7	PO8	2	PO10	2	PO12
FTD-102	1	1.5	2	1.67	2.6	3	PO7	PO8	PO9	PO10	PO11	PO12
FTD-105	2	2.25	1.67	1	1.5	1	PO7	PO8	PO9	PO10	PO11	PO12
FTD-106	2	2	1.75	1.33	1.25	2	1	PO8	PO9	PO10	PO11	PO12
FTD-107	2	2	2.33	2.6	2	1	PO7	PO8	PO9	PO10	PO11	PO12
FTD-108	1.5	2	2.25	1.5	1	1	2	PO8	PO9	PO10	PO11	PO12
FTD-111	2	1.5	2	1.6	1.67	1	1	1	PO9	PO10	PO11	PO12
FTD-112	1.67	2	1.67	2	1.33	2	1.5	2	PO9	PO10	PO11	PO12
FTD-113	1	2	2.75	3	2.67	1	PO7	1	PO9	PO10	PO11	PO12
FTD-114	0.93	2.33	2.17	2.53	2.8	PO6	PO7	PO8	PO9	PO10	1.87	PO12

FTD-118	1.47	1.22	1.47	1.28	1.28	0.73	1.47	PO8	PO9	PO10	PO11	PO12
FTD-120	1.33	PO2	PO3	2	2.8	3	PO7	2	PO9	PO10	PO11	PO12
FTD-121	1.2	1.67	2.5	1.5	1.6	1	PO7	PO8	PO9	PO10	3	PO12
FTD-124	1	1	PO3	1	2.2	2.6	PO7	3	PO9	PO10	PO11	PO12
FTD-125	2	1.67	2.67	1.67	1.67	1	PO7	PO8	PO9	PO10	PO11	PO12
FTD-126	1	2	PO3	2.8	PO5	PO6	PO7	3	PO9	3	PO11	PO12
FTD-130	PO1	PO2	2	2	1	2	2.33	1	1.5	2	1	3
FTD-131	PO1	1	PO3	2	2.25	2.5	2	1	2	PO10	PO11	3
FTD-132	PO1	2.5	1.5	2	1	1	3	1	2	PO10	3	2.33
FTD-133	PO1	PO2	PO3	PO4	2	1.5	PO7	2.33	2.33	1.5	2	PO12
FTD-134	PO1	PO2	PO3	PO4	PO5	2	2.5	2	2	3	PO11	PO12

PO Attainment Indirect

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
ALUMNI SU	2	2	1	1	1	1	2	2	2	1	2	1
Student exi	2	2	2	1	1	1	1	2	1	1	2	1
Parents sur	2	2	2	2	2	1	1	1	1	2	2	1
Indirect Att	1	1.5	2	1.5	2	2	2	1.5	2	2	2	1.5

PO Attainment Level

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
InDirect Attainment	1.75	1.88	1.75	1.38	1.5	1.25	1.5	1.62	1.5	1.5	2	1.12
Direct Attainment	2.03	2.09	2.24	1.97	1.96	1.92	2.12	2.15	2.19	2.31	2.22	2.22

PSO Attainment

Course	PSO1	PSO2	PSO3
BED-101	1	2	PSO3
BED-102	2	2	2
BED-103	1	PSO2	PSO3
BED-106	2	PSO2	PSO3
BED-109	3	PSO2	PSO3
BED-110	PSO1	2	2
BED-111	2	2	PSO3
BED-112	1	2	1
BSH-101	2	1.67	3
BSH-102	1.67	1	PSO3
BSH-104	2	1.67	3
BSH-105	2	1	PSO3
BSH-106	2.5	PSO2	PSO3
BSH-107	2	1	PSO3
BSH-110	2	1	PSO3
CED-101	1	2	PSO3
CED-102	2	2	PSO3
CED-104	2	2	PSO3
CED-105	1	2	PSO3
CED-108	2	2	PSO3
CED-109	1	2	PSO3
CED-111	2	3	PSO3
CED-112	2	2	PSO3
CED-115	PSO1	2.5	PSO3
FTD-101	2.33	2	PSO3
FTD-102	2	2	PSO3
FTD-105	1.5	PSO2	PSO3
FTD-106	1.4	PSO2	PSO3
FTD-107	2	2	PSO3
FTD-108	2	PSO2	PSO3
FTD-111	1.4	1	PSO3
FTD-112	1.67	2	PSO3
FTD-113	1	PSO2	PSO3
FTD-114	1.33	PSO2	PSO3
FTD-118	2	2	PSO3
FTD-119	2.5	PSO2	PSO3
FTD-120	2	1	PSO3

FTD-121	1.6	PSO2	1
FTD-124	1	1	2
FTD-125	1.67	PSO2	PSO3
FTD-126	1	1.5	PSO3
FTD-130	2	1	2
FTD-131	1	2	PSO3
FTD-132	1.5	PSO2	2
FTD-133	2	1.5	2
FTD-134	2	2	2
PTD-101	2	2	PSO3
PTD-102	3	3	PSO3
PTD-105	2	1	PSO3
PTD-106	2	2	PSO3
PTD-107	PSO1	2	PSO3
PTD-108	2	1	1
PTD-111	2	2	2
PTD-112	2	1	2
PTD-113	PSO1	PSO2	2
PTD-114	3	3	3
PTD-118	2	PSO2	PSO3
PTD-119	1	2	2
PTD-120	2	1	1
PTD-121	1	1	2
PTD-124	2	2	2
PTD-125	PSO1	PSO2	2
PTD-126	1	2	2
PTD-130	1	PSO2	2
PTD-131	2	PSO2	2
PTD-132	1	1	PSO3
PTD-133	2	1.5	2
PTD-134	2	2	2

PSO Attainment Indirect

Survey	PSO1	PSO2	PSO3
EXIT BATCH ,ALUMNI	2	2	1
Parent Survey	2	1	2

PSO Attainment Level

Course	PSO1	PSO2	PSO3
Direct Attainment	1.76	1.75	1.96
InDirect Attainment	2	1.5	1.5

4 STUDENTS' PERFORMANCE (100) Total Marks 76.98

Institute Marks :

Table 4.1

Item (Information to be provided cumulatively for all the shifts with explicit headings, wherever applicable)	**2022-23 (CAY)**	**2021-22 (CAYm1)**	**2020-21 (CAYm2)**	**2019-20 (CAYm3)**	**2018-19 (CAYm4)**	**2017-18 (CAYm5)**	**2016-17 (CAYm6)**
Sanctioned intake of the program(N)	24	24	24	24	24	24	24
Total number of students admitted in first year minus number of students migrated to other programs/ institutions plus No. of students migrated to this program (N1)	13	12	22	23	23	19	22
Number of students admitted in 2nd year in the same batch via lateral entry (N2)	0	5	3	3	2	6	7
Separate division students, If applicable (N3)	0	0	0	0	0	0	0
Total number of students admitted in the programme(N1 + N2 + N3)	13	17	25	26	25	25	29

Table 4.2

Year of entry	**Total No of students admitted in the program (N1 + N2 + N3)**	**Number of students who have successfully graduated without backlogs in any semester/ year of study (Without Backlog means no compartment or failures in any semester/ year of study)**			
		I year	**II year**	**III year**	**IV year**
2022-23 (CAY)	13				
2021-22 (CAYm1)	17	6			
2020-21 (CAYm2)	25	21	15		
2019-20 (CAYm3)	26	12	13	13	
2018-19 (LYG)	25	15	17	17	17
2017-18 (LYGm1)	25	5	8	8	8
2016-17 (LYGm2)	29	7	8	7	7

Table 4.3

Year of entry	**Total No of students admitted in the program (N1 + N2 + N3)**	**Number of students who have successfully graduated in stipulated period of study) [Total of with Backlog + without Backlog]**			
		I year	**II year**	**III year**	**IV year**
2022-23 (CAY)	13				
2021-22 (CAYm1)	17	12			
2020-21 (CAYm2)	25	22	23		
2019-20 (CAYm3)	26	23	25	25	
2018-19 (LYG)	25	23	24	24	24
2017-18 (LYGm1)	25	19	22	22	22
2016-17 (LYGm2)	29	22	25	24	24

4.1 Enrolment Ratio (20) Total Marks 14.00

Institute Marks : 14.00

	N (From Table 4.1)	N1 (From Table 4.1)	Enrollment Ratio [(N1/N)*100]
2022-23 (CAY)	24	13	54.17
2021-22 (CAYm1)	24	12	50.00
2020-21 (CAYm2)	24	22	91.67

Average [(ER1 + ER2 + ER3) / 3] : 65.28

Assessment : 14.00

4.2 Success Rate in the stipulated period of the program (20) Total Marks 10.60

4.2.1 Success rate without backlogs in any semester / year of study (15) Institute Marks : 6.15

Item	Latest Year of Graduation, LYG (2018-19)	Latest Year of Graduation minus 1, LYGm1 (2017-18)	Latest Year of Graduation minus 2 LYGm2 (2016-17)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and seperated division, if applicable	25.00	25.00	29.00
Y Number of students who have graduated without backlogs in the stipulated period	17.00	8.00	7.00
Success Index [SI = Y / X]	0.68	0.32	0.24

Average SI [(SI1 + SI2 + SI3) / 3] : 0.41

Assessment [15 * Average SI] : 6.15

4.2.2 Sucess rate in stipulated period (5) Institute Marks : 4.45

Item	Latest Year of Graduation, LYG (2018-19)	Latest Year of Graduation minus 1, LYGm1 (2017-18)	Latest Year of Graduation minus 2 LYGm2 (2016-17)
X Number of students admitted in the corresponding First year + admitted in 2nd year via lateral entry and seperated division, if applicable	25.00	25.00	29.00
Y Number of students who have graduated in the stipulated period	24.00	22.00	24.00
Success Index [SI = Y / X]	0.96	0.88	0.83

Average SI[(SI1 + SI2 + SI3) / 3]: 0.89

Assessment [5 * Average SI] : 4.45

Note : If 100% students clear without any backlog then also total marks scored will be 20 as both 4.2.1 & 4.2.2 will be applicable simultaneously.

4.3 Academic Performance in Second Year (10) Total Marks 7.38

Institute Marks : 7.38

Academic Performance	CAYm2 (2020-21)	CAYm3 (2019-20)	LYG (2018-19)
Mean of CGPA or mean percentage of all successful students(X)	7.73	8.51	7.13
Total number of successful students (Y)	23.00	25.00	24.00
Total number of students appeared in the examination (Z)	25.00	26.00	25.00
API [X * (Y/Z)]	7.11	8.18	6.84

Average API [(AP1 + AP2 + AP3)/3] : 7.38

Assessment [AverageAPI] : 7.38

4.4 Placement, Higher Studies and Entrepreneurship (30) Total Marks 25.00

Institute Marks : 25.00

Item	LYG(2018-19)	LYGm1(2017-18)	LYGm2(2016-17)
Total No of Final Year Students(N)	24.00	22.00	24.00
No of students placed in the companies or goverment sector(X)	12.00	13.00	10.00
No of students admitted to higher studies with valid qualifying scores(GATE or equivalent State or National Level tests, GRE, GMAT etc.) (Y)	4.00	8.00	11.00
No of students turned enterpreneur in engineering/technology (Z)	0.00	0.00	0.00
Placement Index [(X+Y+Z)/N] :	0.67	0.95	0.88

Average Placement [(P1 + P2 + P3)/3] : 0.83

Assessment [30 * Average Placement] : 25.00

Program Name : Chemical Tech.
Assessment Year : 2021-22 (CAYm1)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Hrutvik Pure	E106333	Sun pharmaceuticals	Apr 1
2	Trishna Khadke	E106329	Sun pharmaceuticals	Apr 2
3	Amir Jambhulkar	E106327	Sun pharmaceuticals	Apr 3
4	Seema Chavan	C11	Fine Taste Food Majano	22
5	Samadhan Chavan	A12	Fine Taste Food Majano	22
6	Varad Kadre	C17	Sarda Biopolymers	22
7	Sagar Salve	D42	Post Office, Govt. of India	22
8	Bhagwan Shravane	E55	Britania Industries Ltd., Khopoli	22
9	Nikita Walke	F95	ABD Satara	22
10	Shyamal Gajbhiye	G456	ABD Aurangabad	22
11	Gayatri Pawar	H221	Flemingo	22
12	Suraj Salve	J759	Post Office, Govt. of India	22

Assessment Year : 2020-21 (CAYm2)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Vikas Adsul	B	Kuroli Foods LLP	21
2	Dahiphale Pritesh	A11245	Gram Shri Foundation, Kanker, Chhatisgarh	21
3	Mahesh Dake	S1245	Radico Industries, Shendra	21
4	Rahul Patil	Q12467	Nexton Foods Pvt. Ltd.	21
5	Neena Shivhare	W12467	Haldiram	21
6	Adarsh Yadav	F21367	Kasbekar Oils, Aurangabad	21
7	Urja Chavan	G12467	Alexis Pvt. Ltd., Pune	21
8	Suyash Dhawale	H15467	Harshvaibhav Chem Pharma Pvt. Ltd., Aurangabad	21
9	Kaustubh Mhaisane	R128645	Wockhardt Ltd., Aurangabad	21
10	Sakshi Patil	J35261	Ecolab, Pune	21
11	Vijay Sutar	K382765	Shreshtha Solvents	21
12	Rahul Vanarase	K66382	Radico NV Distillaries, Shendra	21

Assessment Year : 2019-20 (CAYm3)

S.No	Student Name	Enrollment No	Employee Name	Appointment No
1	Vishal Jaiwal	D22286	Smilee Bakers, Waluj	20
2	Pallavi Jumde	G225371	Matrix Life Sciences, Paithan	20
3	Amol Khedkar	T3274389	Prabhat Dairy, Mumbai	20
4	Anand Kole	J647329	Kirti Gold Oils, Latur	20
5	Nikita Manwar	U463288	Spice Board, India	20
6	Pallavi Jadhav	293847	Radico Industries, Shendra	20
7	Abhilasha Alandkar	K463282	Happy A Digital Landing Fintech, Mumbai	20
8	Sayali Gundewar	V27384	TNQ Techniques	20
9	Sanket Kamble	L372645	IDFC, Pune	20
10	Suryakant Naik	D273454567	IPCA, New Mumbai	20
11	Rahul Hodbe	S2364785	Monginis Pvt. Ltd., Shendra	20
12	Priya Ramteke	V2748586	Vardhaman Nagari Bank, Aurangabad	20
13	Swapnil Tagawale	Fh647585	Fosters, Goa	20

4.5 Professional Activities (20) Total Marks 20.00

4.5.1 Professional societies/chapters and organizing engineering events (5) Institute Marks : 5.00

1. On the eve of World Food Day

16 Oct 2019 : One day conference on Palm oils

16 Oct 2022:Oneday seminar with State FDA department

2. 27-30 July 2022:- 04 day workshop for Students on Personality development and soft skills

4.4.2 Publication of technical magazines, newsletters, etc. (5) Institute Marks : 5.00

1. Discovery, Design, and Development of effective and stable binding compounds for mutant EGFR inhibition

Kshipra S. Karnik, Aniket P. Sarkate, **Vaishanavi S. Jambhorkar**, Pravin S. Wakte

Letters in Drug Design & Discovery (Accepted)

(ISSN 1875-628X)

2. Assessment of binding site and development of small molecule inhibitors targeting epidermal growth factor receptor mutations in Non-Small Cell Lung Cancer (NSCLC)

Kshipra S. Karnik, Aniket P. Sarkate, **Aishwarya P. Rajhans**, Pravin S. Wakte

Letters in Drug Design & Discovery (Accepted)

(ISSN 1875-628X)

3. Microwave assisted chlorosulfonic acid catalyzed convenient synthesis of some quinazolinones from 2-phenylindole

A. P. Sarkate, P. P. Sarode, S. V. Bhandari, K. S. Karnik, **I. S. Narula, B. D. Kale, V. S. Jambhorkar and A. P. Rajhans**

Russian Journal of Organic Chemistry, 58 (3), 2022, 428-432

(ISSN: 1608-3393)

4. Development of Triple mutant T790M/C797S Allosteric EGFR inhibitors:

A Computational Approach

Kshipra S. Karnik, **Aniket P. Sarkate**, Deepak K. Lokwani, **Ishudeep S. Narula**, Prasad V. L. S. Burra, Pravin S. Wakte

Journal of Biomolecular Structure & Dynamics, 39 (15), 2021, 5376-5398

(ISSN: 1538-0254

5. Microwave assisted copper slag catalyzed green S-arylation of benzene boronic acids and thiophenols

A. P. Sarkate, D. S. Gavane, B. D. Kale, K. S. Karnik, I. S. Narula, A. L. Khandare, **A. P. Rajhans and V. S. Jambhorkar**

Russian Journal of Organic Chemistry; 56 (7), 2020, 1300-1303 **Int**

(ISSN: 1608-3393)

6. Synthesis and evaluation of novel sulfonamide analogues of 6/7-aminoflavones as anticancer agents via topoisomerase II inhibition

Rohini N. Shelke, Dattatraya N. Pansare, Aniket P. Sarkate, **Ishudeep K. Narula**, Deepak K. Lokwani, Shailee V. Tiwari, Rajaram Azad, Shankar R. Thopate

Bioorganic & Medicinal Chemistry Letters; 30, 2020, 127246 **Int (ISSN 0960-894X**

4.4.3 Participation in inter-institute events by students of the program of study (10) Institute Marks : 10.00

4.5.3 Participation in inter-institute events by students of the program of study (10/10)

(The Department shall provide a table indicating those publications, which received awards in the events/conferences organized by other institutes)

Workshop/paper presentation participated by students(2018-22)

S. No.	Name of the Students	Date	Place	Title	Award
1	Vaishanavi Sakharam Jambhorkar	Feb 2018	Aurangabad	Science day National Science day Successfully participation in Quiz and Essay,DR BAMU	
2	Vaishanavi Sakharam Jambhorkar	Dec 2018	ICT Mumbai	Vortex Imnusia, ICT Mumbai	2nd Prize
3	Vaishanavi Sakharam Jambhorkar	10-12th Jan 2019	Deogiri College ,Aurangabad	International Conference on EXPLORING NEW HORIZONS IN CHEMICAL SCIENCES	
4	Vaishanavi Sakharam Jambhorkar	29th Feb to 2nd March 2020	BITS Pilani, Hyderabad	International Conference on Drug Discovery	
5	Aishwarya Pradeep Rajhans	Dec 2018	ICT Mumbai	Vortex Imnusia 2nd Prize Winner	2nd Prize
6	Aishwarya Pradeep Rajhans			Workshop on Drug Discovery Design and Development	
7	Aishwarya Pradeep Rajhans			Attended video lectures over computer aided drug design organized by Schrodinger.	
8	Aishwarya Pradeep Rajhans			Attended webinar on "The Dos & Don'ts of publishing in premium journals" organized by cell page journal	
9	Aishwarya Pradeep Rajhans			Webinar on MUST KNOW TIPS FOR PUBLISHING IN PREMIUM JOURNALS	
10	Aishwarya Pradeep Rajhans			Certification for participating in poster presentation in International Conference of Drug Designing 2020, held at BITS, Hyderabad	
11	Aishwarya Pradeep Rajhans			Certification for attending video lecture for computer aided drug designing organized by biotechnika.	
12	Ishudeep Singh Narula			National Science day 3rd prize winner	
13	Ishudeep Singh Narula			INTERNATIONAL CONFERENCE ON ADVANCES INCHEMICAL SCIENCES	
14	Ishudeep Singh Narula	Dec 2018		Vortex Imnusia	1st Prize Winner

15	Ishudeep Singh Narula	Jan 2019		international conference on EXPLORING NEW HORIZONS IN CHEMICAL SCIENCES	
16	Ishudeep Singh Narula	Jan 2019		Workshop on computer Aided Drug Design	
17	Ishudeep Singh Narula	Jan 2019		Workshop on Drug Discovery Design and Development	
18	Ishudeep Singh Narula	Feb 2020		International Conference on Drug Discovery	
19	Ishudeep Singh Narula	March 2020		Webinar on MUST KNOW TIPS FOR PUBLISHING IN PREMIUM JOURNALS	
20	Ishudeep Singh Narula	May 2020		Workshop on Basic to Advanced programming using python	
21	Ishudeep Singh Narula	June 2020		Webinar on "COVID-19 PANDEMIC OUTBREAK:GLOBAL SCENARIO	
22	Ishudeep Singh Narula	June 2020		Webinar on QUANTUM MECHANICS INUNDERSTANDING BIOLOGICALPROCESSES AND DRUG DISCOVERY	
23	Ishudeep Singh Narula	July 2020		INTERNATIONAL E-CONFERENCE ON RECENT TRENDSIN DRUG DISCOVERY, DIAGNOSTICS ANDTHERAPEUTICS	
24	Ishudeep Singh Narula	Nov 2020		Workshop on COMPUTER AIDED DRUG DESIGN AND COMPUTATIONAL BIOLOGY	
25	Ishudeep Singh Narula	Jan 2021		Consolation Prize winner in MHRD innovation cell organized international level drug discovery hackathon for designing potential molecules against Covid19	
26	Ishudeep Singh Narula	May 2021		Workshop on "MACHINE LEARNING APPLICATIONS IN DRUG DISCOVERY: BASICS TO ADVANCED"	
27	Rahul Sindhani	Feb 2018		Poster Presentation on National Science Day	1st Prize Winner
28	Rahul Sindhani	Dec 2018		International Food Convention Conference (IFCON 2018) at CFTRI Mysore	
29	Rahul Sindhani	Dec 2018		ICT Tech Fest VORTEX 2018	

30	Rahul Sindhani	Jan 2019		Poster Presentation on State Level Poster Presentation Competition BRAINSTORM 2019	3rd Prize Winner
31	Rahul Sindhani	Dec 2019		Internship / Training at Food and Drug Administration Laboratory (FDA Aurangabad)	
32	Rahul Sindhani	Feb 2020		Campus Ambassador of Food and Agriculture Spectrum	
33	Rahul Sindhani	Feb 2021		Internship / Training at Bake Heaven Confectioneries LLP Mumbai	
34	Rahul Sindhani	April 2021		FSSAI FOSTAC Food Safety Supervisor Training Basic Manufacturing (Level 1)	
35	Rahul Sindhani	May 2021		Webinar on " Smart Protein Innovation Ecosystem in India organized by Foodyai and Good Food Institute	
36	Rahul Sindhani	May 2021		5 Days FDP Program on Food Product Development Organised by MRIIRS	
37	Rahul Sindhani	Jun 2021		Webinar on " HACCP, TACCP, VACCP and Food Safety	
38	Rahul Sindhani	Jun 2021		National Webinar on Scaling-Up Milk Fortification organized by FFRC, FSSAI Delhi	
39	Rahul Sindhani	Jun 2021		FSSAI FOSTAC Food Safety Supervisor Training Advance Manufacturing (Level 2)	
40	Rahul Sindhani	Jun 2021		Virtual Internship on Food Product Development & Process Control Organised by Food Tech Club India	
41	Rahul Sindhani	Aug 2021		Internship Programme at Foodyaari as a Content Developer-Campus Ambassador (3 Month)	
42	Mrinmayee Warode	Oct 2020		Project Green Challenge 2020	Finalist
43	Mrinmayee Warode	Jul 2021		Completed Online Course as an ACS Reviewer	
44	Sayali Gundewar	2018		Poster Presentation at Institute of Chemical Technology, Mumbai, titled "Chemistry of Dyes" (VORTEX 2018)	
45	Sayali Gundewar	2019		Poster Presentation at Institute of Chemical Technology, Mumbai, titled "Benefits of EPA and DHA." (VORTEX 2019)	

46	Sayali Gundewar	Aug 2019		National Conference on " Materials for Advance Technology and Application" , MIT Aurangabad	
47	Sayali Gundewar	2019		Published Review Paper in VORTEX THE CHEMFEST 2019 titled "Biodegradable Foam Packaging"	
48	Avantika Chougule	Aug 2020		Completed Course on " Remote Sensing Applications in Agricultural Water Management" by IIRS-ISRO	
49	Avantika Chougule	2021		Webinar on " Rethinking Malaria in Context of COVID -19" by Harvard	
50	Avantika Chougule	Nov 2022		Symposium on "Advances in natural products research for the treatment of infectious diseases and metabolic disorders" at NIPER, Hyderabad	
51	Avantika Chougule	Nov 2022		Springer Nature Author Workshop	
52	Avantika Chougule	Apr 2023		Member of UGC-Experts Committee for Internship Guidelines for Undergraduate Students	

5 FACULTY INFORMATION AND CONTRIBUTIONS (200) Total Marks 176.00

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Sr. No	Name	PAN No.	University Degree	Date of Receiving Degree	Area of Specialization	Research Paper Publications	Ph.D Guidance	Faculty receiving Ph.D during the assessment year	Current Designation	Date (Designated as Prof / Assoc. Prof.)	Initial Date of Joining	Association Type	At present working with the Institution (Yes / No)	Date of Leaving	IS HOD?
1	PRAVIN SHRIDHARAO WAKTE	AAVPW5005G	ME/M. Tech and PhD	06/02/2008	PHARMACY	48	04	02	Professor	05/06/2014	03/09/1999	Regular	Yes		Yes
2	DEVANAND BABURAO SHINDE	AEOPS4361L	M.Sc. and PhD	18/05/1991	CHEMISTRY,PHARMACY	30	0	0	Professor	02/12/2005	14/03/1996	Regular	No	28/02/2023	No
3	BHAGWAN KASHIRAM SAKHALE	BHQPS2093P	ME/M. Tech and PhD	11/10/2008	FOOD TECHNOLOGY	30	05	02	Professor	04/12/2021	02/12/2005	Regular	Yes		No
4	VINAY VIJAY LOMTE	ACTPL7951J	M.E/M.Tech	22/09/2008	MECHANICAL ENGINEERING	02	0	0	Assistant Professor		02/12/2005	Regular	Yes		No
5	CHANDRASHEKHAR DIGAMBARAPPA GOURSHETE	ABPPG6486N	M.E/M.Tech	15/05/1996	CHEMICAL ENGINEERING	0	0	0	Assistant Professor		03/12/1997	Regular	No	29/06/2022	No
6	VIVEK DIGAMBAR RATHOD	AJZPR8409A	M.E/M.Tech	20/05/2021	PHARMACEUTICAL TECHNOLOGY	0	0	0	Assistant Professor		06/12/2005	Regular	Yes		No
7	GANESH R PANDHRE	AUNPP5456A	M.Sc	26/07/2004	FOOD TECHNOLOGY	0	0	0	Assistant Professor		25/10/2007	Regular	Yes		No
8	GAURI A KALLAWAR	BTPPK4523B	M.E/M.Tech	08/10/2009	CHEMICAL ENGINEERING	1	0	0	Assistant Professor		05/05/2010	Regular	Yes		No
9	ANIKET PRADEEP SARKATE	CCRPS7129H	ME/M. Tech and PhD	29/02/2016	PHARMACY	69	04	0	Assistant Professor		03/09/2009	Regular	Yes		No
10	SACHIN SHIVLING BHUSARI	AHLPB8947P	ME/M. Tech and PhD	24/01/2011	PHARMACY	43	0	0	Assistant Professor		22/09/2009	Regular	Yes		No

5.1 Student-Faculty Ratio (SFR) (20) Total Marks 20.00

Institute Marks : 20

UG

No. of UG Programs in the Department 1

CHEMICAL TECHNOLOGY						
Year of Study	**CAY**		**CAYm1**		**CAYm2**	
	(2022-23)		**(2021-22)**		**(2020-21)**	
	Sanction Intake	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**	**Sanction Intake**	**Actual admitted through lateral entry students**
2nd Year	24	4	24	5	24	3
3rd Year	24	0	24	0	24	0
4th Year	24	0	24	0	24	0
Sub-Total	**72**	**4**	**72**	**5**	**72**	**3**
Total	**76**		**77**		**75**	
Grand Total	76		77		75	

PG

No. of PG Programs in the Department 1

DRUGS AND PHARMACEUTICALS			
Year of Study	**CAY(2022-23)**	**CAYm1(2021-22)**	**CAYm2 (2020-21)**
	Sanction Intake	**Sanction Intake**	**Sanction Intake**
1st Year	10	10	10
2nd Year	10	10	10
Total	**20**	**20**	**20**
Grand Total	20	20	20

SFR

No. of UG Programs in the Department 1

No. of PG Programs in the Department 1

Description	**CAY(2022-23)**	**CAYm1 (2021-22)**	**CAYm2 (2020-21)**
Total No. of Students in the Department(S)	96 **Sum total of all (UG+PG) students**	97 **Sum total of all (UG+PG) students**	95 **Sum total of all (UG+PG) students**
No. of Faculty in the Department(F)	7 **F1**	8 **F2**	7 **F3**
Student Faculty Ratio(SFR)	13.71 **SFR1=S1/F1**	13.57 **SFR2=S2/F2**	12.13 **SFR3=S3/F3**
Average SFR	13.14 **SFR=(SFR1+SFR2+SFR3)/3**		
F=Total Number of Faculty Members in the Department (excluding first year faculty)			

Note: All the faculty whether regular or contractual (except Part-Time), will be considered. The contractual faculty (doing away with the terminology of visiting/adjunct faculty, whatsoever) who have taught for 2 consecutive semesters in the corresponding academic year on full time basis shall be considered for the purpose of calculation in the Faculty Student Ratio. However, following will be ensured in case of contractual faculty:

1. Shall have the AICTE prescribed qualifications and experience.

2. Shall be appointed on full time basis and worked for consecutive two semesters during the particular academic year under consideration.

3. Should have gone through an appropriate process of selection and the records of the same shall be made available to the visiting team during NBA visit

5.1.1. Provide the information about the regular and contractual faculty as per the format mentioned below:

	Total number of regular faculty in the department	**Total number of contractual faculty in the department**
CAY(2022-23)	7	0
CAYm1(2021-22)	8	0
CAYm2(2020-21)	7	0

Average SFR for three assessment years : 13.14

Assessment SFR : 20

5.2 Faculty Cadre Proportion (20) Total Marks 20.00

Institute Marks : 20.00

Year	Professors		Associate Professors		Assistant Professors	
	Required F1	Available	Required F2	Available	Required F3	Available
CAY(2022-23)	1.00	2.00	1.00	0.00	3.00	5.00
CAYm1(2021-22)	1.00	2.00	1.00	0.00	3.00	6.00
CAYm2(2020-21)	1.00	1.00	1.00	1.00	3.00	5.00
Average Numbers	1.00	1.67	1.00	0.33	3.00	5.33

Cadre Ratio Marks [(AF1 / RF1) + [(AF2 / RF2) * 0.6] + [(AF3 / RF3) * 0.4]] * 10 : 20.00

5.3 Faculty Qualification (20)

Total Marks 20.00

Institute Marks : 20.00

	X	Y	F	FQ = 2 x [(10X + 4Y) / F)]
2022-23(CAY)	4	3	4.00	26.00
2021-22(CAYm1)	4	4	4.00	28.00
2020-21(CAYm2)	4	3	4.00	26.00

Average Assessment : 26.67

5.4 Faculty Retention (10)

Total Marks 10.00

Institute Marks : 10.00

Description	2021-22 (CAYm1)	2022-23 (CAY)
No of Faculty Retained	7	6
Total No of Faculty	7	7
% of Faculty Retained	100	86

Average : 93.00

Assessment Marks : 10.00

5.5 Faculty competencies in correlation to Program Specific Criteria (10)

Total Marks 10.00

Institute Marks : 10.00

Name of the faculty	Research	Course Development	Teaching
Dr. D. B. Shinde	PSO1	PSO2, PSO3	PSO2
Dr. P. S. Wakte	PSO1	PSO2, PSO3	PSO2
Dr. B. K. Sakhale	PSO1	PSO2, PSO3	PSO2
Mr. C. D. Gourshete	-	PSO2	PSO2
Mr. V. D. Rathod	-	PSO2	PSO2
Mr. G. R. Pandhre	PSO1	PSO2	PSO2
Miss. G. A. Kallawar	PSO1	PSO2	PSO2
Mr. V. V. Lomte	PSO1	PSO2, PSO3	PSO2
Dr. A. P. Sarkate	PSO1	PSO2, PSO3	PSO2
Dr. S. S. Bhusari	PSO1	PSO2, PSO3	PSO2

5.6 Innovations by the Faculty in Teaching and Learning (10)

Total Marks 10.00

Institute Marks : 10.00

Following are the innovative tools used by the Faculty in Teaching and Learning Process:

Multimedia Learning Process:

The faculties are using multimedia elements LCD projectors in the Class room. It will help the faculties to represent the content in a more meaningful way using different media elements

Tools	Methods	Metaphor
Power Point Presentation by referring Elearning videos	Easy to prepare and it can be prepared with many of the popular multimedia Technique's.	**Slide based**
Smart Class Room	Teaching through Smart boards	**Interactive based**
Demonstration Videos and Lectures	Easy to prepare and download	**Web Based Learning**

5.7 Faculty as participants in Faculty development/training activities/STTPs (15)

Total Marks 15.00

Institute Marks : 15.00

Name of the faculty	Max 5 Per Faculty		
	2021-22(CAYm1)	2020-21(CAYm2)	2019-20(CAYm3)
Mr. V. V. Lomte	5.00	5.00	0.00
Dr. S. S. Bhusari	5.00	5.00	0.00
Dr. A. P. Sarkate	5.00	5.00	5.00
Ms. G. A. Kallawar	0.00	0.00	5.00
Sum	15.00	15.00	10.00
RF = Number of Faculty required to comply with 20:1 Student Faculty Ratioas per 5.1	4.00	4.00	4.00
Assessment [3*(Sum / 0.5RF)]	22.50	22.50	15.00

Average assessment over 3 years: 15.00

5.8 Research and Development (75)

Total Marks 60.00

5.8.1 Academic Research (20)

Institute Marks : 20.00

Publication details:

I. Dr. Devanand B. Shinde

1. Synthesis and Biological Activity of Structurally Diverse Phthalazine derivatives : A Systematic Review

   Jaiprakash Sangshetti, (https://www.sciencedirect.com/science/article/pii/S0968089619310193#!) Shahebaaz K. Pathan, (https://www.sciencedirect.com/science/article/pii/S0968089619310193#!) Rajesh Patil, (https://www.sciencedirect.com/science/article/pii/S0968089619310193#!) Siddique Akber Ansari, (https://www.sciencedirect.com/science/article/pii/S0968089619310193#!) Santosh Chhajed, (https://www.sciencedirect.com/science/article/pii/S0968089619310193#!) Rohidas Arote, (https://www.sciencedirect.com/science/article/pii/S0968089619310193#!) **Devanand B. Shinde** (https://www.sciencedirect.com/science/article/pii/S0968089619310193#!)

   Bioorganic and Medicinal Chemistry; 27 (18), 2019, 3979-3997

2. (Substituted)-benzo[b]thiophene-4-carboxamide synthesis and anti-proliferative activity study

   Chandrakant D. Pawar, Dattatraya N. Pansare, **Devanand B. Shinde**

   Letters in Drug Design & Discovery; 17 (5), 2020, 561-571 **Int**

3. Molecular docking, pharmacophore based virtual screening and molecular dynamics studies towards the identification of potential leads for the management of *H. pylori*

   Manoj G. Damale, Rajesh B. Patil, Siddique Akber Ansari, Hamad M. Alkahtani,

   Abdulrahman A. Almehizia, **Devanand B. Shinde**, Rohidas Arote and Jaiprakash Sangshetti

   RSC Advances; 9, 2019, 26176-26208 **Int**

4. Synthesis of (Z)-5-(substituted benzylidene)-2-((substituted phenyl) amino)thiazol-4(5H)-one analogues with antitubercular activity

   Rohini N. Shelke, Dattatraya N. Pansare, Aniket P. Sarkate, Kshipra S. Karnik, Ajinkya P. Sarkate, **Devanand B. Shinde**, Shankar R. Thopate

   Journal of Taibah University for Science; 13 (1), 2019, 678-686 **Int**

5. Synthesis of 2-((5-benzylidene-4-oxo- 4, 5-dihydrothiazol- 2-yl)-substituted amino acids as anticancer and antimicrobial agents

   Rohini N. Shelke, Dattatraya N. Pansare, Chandraknat D. Pawar, Mininath C. Khade, Vrushali N. Jadhav, Satish U. Deshmukh, Aniket P. Sarkate, Nileema S. Gore, Rajendra P. Pawar, **Devanand B. Shinde**, Shankar R. Thopate

   European Chemical Bulletin; 8 (2), 2019, 63-70 **Int**

6. A facile synthesis of substituted 2-(5-(benzylthio)-1,3,4-oxadiazol-2-yl) pyrazine using microwave irradiation and conventional method with antioxidant and anti-cancer activity

   Sanjeev R. Patil, Aniket P. Sarkate, Kshipra S. Karnik, Ashish Arsondkar, Vrushali Patil, Jaiprakash N. Sangshetti, Anil S.Bobade, **Devanand B. Shinde**

   Journal of Heterocyclic Chemistry; 56 (3), 2019, 859-866 **Int**

7. Synthesis, anti-proliferative activity, SAR and Kinase inhibition studies of thiazol-2-yl- substituted sulfonamide derivatives

   Chandrakant D. Pawar, Sadhana L. Chavan, Umakant D. Pawar, Dattatraya N. Pansare, Santosh V. Deshmukh, **Devanand B. Shinde**

   Journal of the Chinese Chemical Society; 66, 2019, 257-264 **Int**

8. Synthesis and anticancer evaluation of new benzene sulfonamide derivatives

   Rohini N. Shelke, Dattatraya N. Pansare, Chandraknat D. Pawar, Mininath C. Khade, Vrushali N. Jadhav, Satish U. Deshmukh, Ajit K. Dhas, Pravin N. Chavan, Aniket P. Sarkate, Rajendra P. Pawar, **Devanand B. Shinde** and Shankar R. Thopate

   European Chemical Bulletin; 8 (1), 2019, 1-6 **Int**

9. Synthesis, biological evaluations and computational studies of *N*-(3-(-2-(7-Chloroquinolin-2-yl)vinyl) benzylidene)anilines as fungal biofilm inhibitors

   Firoz A. Kalam Khan, Rashmi N. Kaduskar, Rajesh Patil, Rajendra H. Patil, Siddique Akber Ansari, Hamad M. Alkahtani, Abdulrahman A. Almehizia, **Devanand B. Shinde**, Jaiprakash N. Sangshetti

   Bioorganic & Medicinal Chemistry Letters; 29 (4), 2019, 623-630 **Int**

10. Copper-Catalyzed Convenient Synthesis and SAR Studies of Substituted-1,2,3-Triazole as Antimicrobial Agents

    Aniket P. Sarkate, Kshipra S. Karnik, Pravin S. Wakte, Ajinkya P. Sarkate, Ashwini V. Izankar, **Devanand B. Shinde**

    Letters in Drug Design & Discovery; 16 (1), 2019, 3-10 **Int**

11. Palladium catalyzed tricyclohexylphosphine ligand associated synthesis of N-(2-(pyridine-4-yl)-1H-pyrrolo[3,2-c]-pyridin-6-yl-(substituted)-sulfonamide derivatives as antiproliferative agents

    Chandrakant D. Pawar, Aniket P. Sarkate, Kshipra S. Karnik, **Devanand B. Shinde**

    Journal of Heterocyclic Chemistry; 55, 2018, 1695-1701 **Int**

12. Synthesis of new 3-(substituted phenyl)-N-(2-hydroxy-2-(substituted phenyl)ethyl)-N-methylthiophene-2-sulfonamide derivatives as antiproliferative agents.

    Chandrakant Pawar, Dattatraya Pansare and **Devanand Shinde**

    European Journal of Chemistry; 9 (1), 2018, 13-21 **Int**

13. Microwave-assisted synthesis of novel 5-substituted benzylidene amino-2-butyl benzofuran-3-yl-4-methoxyphenyl methanones as antileishmanial and antioxidant agents

    Sanjeev R. Patil, Satyanarayana Bollikonda, Rajendra H. Patil, Jaiprakash N. Sangshetti, Anil S. Bobade, Ashish Asrondkar, Padi Pratap Reddy, **Devanand B. Shinde**

    Bioorganic & Medicinal Chemistry Letters; 28 (3), 2018, 482-487 **Int**

14. Novel 2-(nitrooxy)ethyl 2-(4-(substituted phenyl)-2-((substituted phenyl)amino)thiazol-5-yl)acetate as anti-inflammatory, analgesic and nitric oxide releasing agents: Synthesis and Molecular Docking studies

    Aniket P. Sarkate, Deepak K. Lokwani, Kshipra S. Karnik, **Devanand B. Shinde**

    Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry; 16 (3),

    2017, 153-167 **Int**

15. Synthesis and antiproliferative activity of 3-(substituted)-4,5,6,7-tetrahydro-6- (substituted)-1H-pyrazolo[3,4-c]pyridine derivatives

Chandrakant Pawar, Dattatraya Pansare and **Devanand Shinde**

European Journal of Chemistry; 8 (4), 2017, 400-409 **Int**

16. Synthesis and antiproliferative evaluation of new (4-substituted-3,4-dihydro-2*H*-benzo[b][1,4]oxazin-2-yl)methane substituted sulfonamide derivatives

Chandrakant Dhondiram Pawar, Aniket Sarkate, Kshipra Karnik, Dattatraya Navnath Pansare and **Devanand Baburao Shinde**

European Journal of Chemistry; 8 (4), 2017, 384-390 **Int**

17. Antileishmanial potential of fused 5-(pyrazin-2-yl)-4H-1,2,4-triazole-3-thiols: Synthesis, biological evaluations and computational studies

Sanjeev R. Patil, Ashish Asrondkar, Vrushali Patil, Jaiprakash N. Sangshetti, Firoz A. Kalam Khan, Manoj G. Damale, Rajendra H. Patil, Anil S.Bobade, **Devanand B. Shinde**

Bioorganic & Medicinal Chemistry Letters; 27, 2017, 3845-3850 **Int**

18. A Facial Synthesis and Anticancer Activity of (*Z*)-2-((5-(4-nitrobenzylidene)-4-oxo-4,5-dihydrothiazol-2-yl)amino)-substituted Acid

Dattatraya N. Pansare, Rohini N. Shelke, **Devanand B. Shinde**

Journal of Heterocyclic Chemistry; 54, 6, 2017, 3077-3086 **Int**

19. Mur Ligase Inhibitors as Anti-bacterials: A Comprehensive Review

Jaiprakash Sangshetti, Suyog Joshi, Rajendra Patil, Mark Moloney, **Devanand B. Shinde**

Current Pharmaceutical Design; 23, 21, 2017, 3164-3196 **Int**

20. Synthesis and evaluation of N-(Substituted phenyl)-2-(3-substituted) sulfamoyl) phenyl) acetamide derivatives as Anticancer Agents

Chandrakant D. Pawar, Aniket P. Sarkate, Kshipra S. Karnik, **Devanand B. Shinde**

Egyptian Journal of Basic and Applied Sciences; 4, 2017, 310-314 **Int**

21. Novel O-alkylated chromones as antimicrobial agents: Ultrasound mediated synthesis, molecular docking and ADME prediction

Vidya S. Dofe, Aniket P. Sarkate, Deepak K. Lokwani, **Devanand B. Shinde**, Santosh H. Kathwate,Charansing H. Gill

Journal of Heterocyclic Chemistry; 54 (5), 2017, 2678-2685 **Int**

22. Greener approach: Ionic liquid [Et3NH][HSO4] catalyzed multicomponent synthesis of 4-arylidene-2-phenyl-5(4H)-oxazolones or azlactones under solvent free condition

Santosh A. Jadhav, Aniket P. Sarkate, Mazahar Farooqui, **Devanand B. Shinde**

Synthetic Communications; 47 (18), 2017, 1676-1683 **Int**

23. Expeditious One pot Multicomponent Microwave assisted Green synthesis of substituted 2-phenyl Quinoxaline and 7-Bromo-3-(4-ethylphenyl) pyrido[2,3-b]pyrazine in Water-PEG and Water-Ethanol

Santosh A. Jadhav, Aniket P. Sarkate, Mahesh G. Shioorkar , **Devanand B. Shinde**

Synthetic Communications; 47 (18), 2017, 1661-1667 **Int**

24. ZrO_2 nano particle catalyzed multicomponent synthesis of 3-benzylidene-1-phenylquinoline-2,4(1*H*,3*H*)-diones and its antimicrobial activity

Santosh A. Jadhav, Aniket P. Sarkate, Anil V. Raut, **D. B. Shinde**

Research on Chemical Intermediates; 43, 2017, 4531-4547 **Int**

25. Microwave and conventional method assisted synthesis of 2-(substituted) -3-(4-methoxybenzyl) thiazolidin-4-ones using $ZrOCl_2{\cdot}8H_2O$ as a catalyst

Aniket P. Sarkate, Dattatraya N. Pansare, Ishwari A. Kale, **Devanand B. Shinde**

Current Microwave Chemistry; 4, 2017, 139-145 **Int**

26. Microwave assisted copper-catalyzed synthesis of substituted benzamides through decarboxylative C-N cross coupling

Aniket P. Sarkate, Dattatraya N. Pansare, Kshipra S. Karnik, Ishwari A. Kale, Sushilkumar S. Bahekar, **Devanand B. Shinde**

Current Microwave Chemistry; 4, 2017, 163-167 **Int**

27. Two Decades of Antifilarial Drug Discovery: A Review

Sangshetti, J. N., **Shinde, D. B.,** Kulkarni, A. A., Arote, R.

RSC Advances; 7 (33), 2017, 20628-20666 **Int**

28. Identification, Synthesis, and Characterization of Potential Process Related Compounds of Rivastigmine Tartrate

Sanjeev R Patil, Bollikonda Satyanarayana, Ketan Amrutia, Maloyesh Biswas, Jaiprakash N Sangshetti, Anil S Bobade, Padi Pratap Reddy, Rajendra Agarwal, **Devanand B Shinde**

Der Pharma Chemica; 9 (9), 2017, 31-35 **Int**

29. Identification, synthesis, and strategy for reduction of process related potential impurities in sildenafil citrate

Sanjeev R. Patil, Bollikonda Satyanarayan, Ketan Amrutia, Maloyesh Biswas, Jaiprakash N. Sangshetti, Sreenu Pathakokila, Sambhaji S.Powar, Anil S. Bobade, Padi Pratap Reddy, Rajendra Agarwal, and **Devanand B. Shinde**

Research Journal of Pharmaceutical, Biological and Chemical Sciences; 8 (2), 2017, 1374-1380 **Int**

30. A rapid an efficient one pot microwave assisted synthesis of 2- phenylimidazo[1,2-a]pyridines and 2-phenylimidazo[1,2-a]quinoline in Water-PEG-400

Santosh A. Jadhav, Mahesh G. Shioorkar, Omprakash S. Chavan, Aniket P. Sarkate, **Devanand B. Shinde**

Synthetic Communications; 47 (4), 2017, 285-290 **Int**

II. Dr. P. S. Wakte

Sr. No.	Title	Name of Journal	Volume & Page	Year	ISSN No.
1.	HR-LCMS assisted phytochemical screening and an assessment of anticancer activity of SargassumSquarrossum and DictyotaDichotomausing in vitro and molecular docking approaches	Journal of Molecular Structure	1270: 1-16	2022	0022-2860
2.	High-resolution liquid chromatography and mass spectrometry (HR-LCMS) assisted phytochemical profiling and an assessment of anticancer activities of Gracilaria foliifera and Turbinaria conoides using in vitro and molecular docking analysis	Journal of Bimolecular Structure and Dynamics	1-16	2022	1538-0254
3.	High Performance Liquid Chromatography Method Validation and Forced degradation Studies of Pterostilbene	Research Journal of Pharmacy and Technology	15(7): 2969-2975	2022	0974-360X
4.	Design, synthesis, biological evaluation and in silico studies of EGFR inhibitors based on 4-oxo-chromane scaffold targeting resistance in non-small cell lung cancer (NSCLC)	Medicinal Chemistry Research	31: 1500–1516	2022	1054-2523
5.	Encapsulation of exemestane with B-cyclodextrin and ternary agent: formulation, evaluation and anticancer activity	International Journal of Applied Pharmaceutics	14(5): 119-127	2022	0975-7058
6.	Development and Validation of High-Performance Liquid Chromatography Method for Apigenin from Parsley Leaves Extract	International Journal of Recent Advances in Multidisciplinary Topics	3(4): 179-183	2022	2582-7839
7.	Molecular dynamic simulations based discovery and development of thiazolidin-4-one derivatives as EGFR inhibitors targeting resistance in non-small cell lung cancer (NSCLC)	Journal of Bimolecular Structure and Dynamics	1-15	2022	1538-0254
8.	Development and validation of a novel and simple RP-HPLC method for estimation of tangeretin in orange peel powder extracts	World Journal of Pharmaceutical Research	11(7): 578-588	2022	2277–7105
9.	Development and Validation of UV-Visible Spectrophotometric Method for Estimation of Morin in Bulk and Formulation	International Journal of Research Publication and Reviews	3(2): 545-553	2022	2582-7421
10.	Cyclodextrin Based Nanosponges: A Multidimensional Drug Delivery System and itsBiomedical Applications	Current Drug Delivery	18(10): 1467-1493	2021	1875-5704
11.	Neoteric Approaches for Extraction of Bioactives from Marine Macroflora	International Journal of Research in Pharmaceutical Sciences	12(4): 2507-2518	2021	0975-7538
12.	WaterSwap Analysis, a Computation-based Method for the Discovery of Effective and Stable Binding Compounds for Mutant EGFR Inhibition	Research Square		2021	2693-5015
13.	Development and Validation of UV-Visible Spectrophotometric Method for Estimation of Apigenin in Parsley Leaves Extract	International Journal of Recent Advances in Multidisciplinary Topics	2(8): 68-72	2021	2582-7839
14.	Free energy perturbation guided Synthesis with Biological Evaluation of Substituted Quinoline derivatives as small molecule L858R/T790M/C797S mutant EGFR inhibitors targeting resistance in Non-Small Cell Lung Cancer (NSCLC)	Bioorganic Chemistry	115(105226): 1-12	2021	0045-2068
15.	Breast cancer: Understanding etiology, addressing molecular signaling pathways, identifying therapeutic targets and strategizing the treatment.	International Journal of Research in Pharmaceutical Sciences	12(3):1757-1769	2021	0975-7538
16.	A review on Phytochemicals and biological attributes of *Madhucalongifolia*	Asian Journal of Pharmacy and Pharmacology	7(2):74-84	2021	2455-2674
17.	Computational and Synthetic approach with Biological Evaluation of Substituted Quinoline derivatives as small molecule L858R/T790M/C797S triple mutant EGFR inhibitors targeting resistance in Non-Small Cell Lung Cancer (NSCLC)	Bioorganic Chemistry	107(104612): 1-16	2021	0045-2068

18.	Phytochemical Investigation, TLC-HPLC Fingerprinting and Antioxidant Activity of *Cissus repanda* Roots	Indian Journal of Pharmaceutical Education and Research	54(4): 1104-1108	2020	0019-5464
19.	Development and validation of UV spectrophotometricmethod for estimation ofTangeretin in orange peel powder	World Journal of Pharmaceutical Research	9(15): 1345-1356	2020	2277–7105
20.	Development and evaluation of Paliperidone capsulefor sustained release activity using natural polymer	World Journal of Pharmaceutical Research	9(8): 2017-2030	2020	2277–7105
21.	Development of triple mutantT790M/C797S allosteric EGFR inhibitors: acomputational approach	Journal of Bimolecular Structure and Dynamics	39(15)	2020	
22.	In-Vitro Anti-Oxidant Activity and Free Radical scavenging Potential of *Alangiumsalvifolium* seeds	Research Journal of Pharmacy and Technology	13(7): 3081-3085	2020	0974-360X
23.	Development and Validation of High-Performance Thin Layer Chromatography Method for Estimation of Rifabutin in Bulk and Formulation	Asian Journal of Pharmaceutical Analysis	10(1): 1-5	2020	2231–5675
24.	Auto QSAR- A Fast Approach for Creation and Application of QSAR Modelsthrough Automation	Chemistry Select	5(19): 5756-5762	2020	2365-6549
25.	Development and validation of q-absorbance ratio spectrophotometric method for the simultaneous estimation of rifampicin and its bioenhancer; 3', 5-dihydroxyflavone-7-o-β-d-galacturonide-4'-o-β-d-glucopyranoside;in bulk and formulation	Journal of Pharmaceutical and Scientific Innovation	8(5): 182-188	2019	2277 –4572
26.	Optimization of Ultrasound-Assisted extraction for Tephrosia purpurea by Response Surface Methodology and evaluation of its antioxidant activity	Journal of Drug Delivery and Therapeutics	9(3-s):401-406	2019	2250-1177
27.	Development and Validation of UV-Visible Spectrophotometric method for simultaneous estimation of Etoposide and Picroside-II in bulk and pharmaceutical formulation	Journal of Drug Delivery and Therapeutics	9(3):257-262	2019	2250-1177
28.	Development and validation of a spectrofluorimetric method for the estimation of camptothecin in bulk and formulation	Journal of Drug Delivery and Therapeutics	9(2-s):1-5	2019	2250-1177
29.	Comparative Evaluation of Baicalein from *Oroxylum indicum* by using Conventional and Non-Conventional Extraction Methodology	Research Journal of Pharmacy and Technology	12(4): 1817-1822	2019	0974-360X
30.	Development and validation of UV-spectrophotometric method for estimation of Baicalein in *Oroxylum indicum* leaf extract	The Pharma Innovation Journal	8(1): 366-370	2019	2277-7695
31.	Anal fistula: A comprehensive review	The Pharma Innovation Journal	8(1): 201-208	2019	2277-7695
32.	Pharmacognostic and phytochemical investigation of *Cissus repanda*Vahl leaves	Asian Journal of Pharmacy and Pharmacology	5(4):793-798	2019	2455-2674
33.	Physicochemical properties determination of Picroside-II	Indian Drugs	56(08):27-37	2019	0019-462X
34.	Anti-Hepatotoxic Effect and Phytochemical Analysis of *BerberisAristata* Bark Against Carbon Tetrachloride-Induced Hepatic Damage in Rats	International Journal of Pharmacy and Biological Sciences	9(1): 616-621	2019	2230-7605
35.	Copper-catalyzed Convenient Synthesis and SARStudies of Substituted-1,2,3-triazole asAntimicrobial Agents	Letters in Drug Design and Discovery	16(1): 3-10	2019	1570-1808
36.	UPLC, HR-MS, and In-SilicoTools for Simultaneous Separation, Characterization, and In-Silico Toxicity Prediction of Degradation Products of Atorvastatin and Olmesartan	ActaChromatographica	31(1): 33–44	2018	1233-2356
37.	A Validated Chiral HPLC Method For Enantiomeric Separation of Glycidyl Butyrate on Cellulose Based Stationary Phase	IOSR Journal of Applied Chemistry	11(9): 12-18	2018	2278-5736
38.	A New Short Validated U-HPLC Method for theDetermination of Recombinant Human Insulin inMicrospheres	Current Pharmaceutical Analysis	14(5): 501-512	2018	1573-4129
39.	Pharmacognostic and Phytochemical investigation of stems of *Pergulariadaemia*	Asian Journal of Pharmacy and Pharmacology	4(4): 500-504	2018	2455-2674

40.	Insulin Oral Delivery: A Review on Challenges and Potential Approaches	Research Journal of Pharmaceutical Biological and Chemical Sciences	9(3): 1530-1547	2018	0975-8585
41.	LC andLC–MS/MS studiesfortheidentification andcharacterizationofDegradationproducts ofacebutolol	Journal ofPharmaceuticalAnalysis	8: 357–365	2018	2095-1779
42.	Copper Catalyzed Ligand Free Microwave Mediated Synthesis of α-ketoamides from Aromatic Ketones	Current Microwave Chemistry	5(1): 39-45	2018	2213-3356
43.	Stability Indicating Validated HPLC Method for Simultaneous Quantification of Nitazoxanide and Ofloxacin in Pharmaceutical Dosage Form	Latin American Journal of Pharmacy	37(1): 29-36	2018	2362-3853
44.	Formulation, physicochemical characterization and in vitro evaluation of human insulin-loaded microspheres as potential oral carrier	Progress in Biomaterials	6:125–136	2017	2194-0517
45.	PAT-Based Control of Fluid Bed Coating Process Using NIR Spectroscopy to Monitor the Cellulose Coating on Pharmaceutical Pellets	AAPS PharmSciTech,	18(6): 2045-2054	2017	1530-9932
46.	Formulation Optimization of Human Insulin Loaded Microspheres for Controlled Oral Delivery Using Response Surface Methodology	Endocrine, Metabolic & Immune Disorders-Drug Targets	17(2): 149-165	2017	2212-3873
47.	Real Time Imaging as an Emerging Process Analytical Technology Tool for Monitoring of Fluid Bed Coating Process	Pharmaceutical Development and Technology	23(6):1-25	2017	1097-9867
48.	A Validated Stability Indicating High Performance Liquid Chromatographic Method for Olanzapine	Latin American Journal of Pharmacy	36(7): 1462-1468	2017	2362-3853

III. Dr. B. K. Sakhale

1. Pawar, S.D., Lomte, V.V. and **Sakhale B.K.** (2017). Effect of Pretreatments on Drying Characteristics of Thompson Seedless Grapes. Asian J. Dairy & Food Research 36 (4): 332-336
2. Gaikwad Sandeep Sopanrao, **SakhaleBhagwan K.** and Chavan Ramesh F. (2017). Effect of 1-Methyl Cyclopropene on post harvest quality and shelf life of tomato fruits treated with exogenous ethylene Int. J. Agric. Sci. Research 7(5): 565-574.
3. Gaikwad Sandeep Sopanrao, **SakhaleBhagwan K.** and Chavan Ramesh F. (2017). Effect of 1- Methylcyclopropene concentration, Storage time and temperature on Post harvest Quality and Shelf life of tomato fruit. Int. J. Agric. Sci. Research 7(6): 265-272.
4. **Sakhale, B.K**, Gaikwad, S.S and Chavan R.F. (2017). Application of 1- Methylcyclopropene on Mango fruit (Kesar): Potential for Shelf Life Enhancement and Retention of Quality. J. Food Sci. Tech. 55 (2): 776-781 (DOI :10.1007/s13197-017-2990-0)
5. Kulkarni D.B., **Sakhale B.K**. and Giri N.A. (2018). A Potential Review on Millet Grain Processing. Int. J. Nutr. Sci. 3(1): 10-18.
6. Dange V.U., **Sakhale B.K.** and Giri N.A. (2018). Enzyme Application for Reduction of Acrylamide Formation in Fried Potato Chips. Curr. Res. Nutr. Food Sci. Jour., 6 (1): 222-226.
7. Kulkarni D.B., Deshpande H.W. and **Sakhale B.K.** (2018). Sweet Sorghum Syrup - An Alternative Sweetner for Preparation of Sesame Chikki. J. Food Nutri. Packaging, 05: 07-13
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IV. Dr. S. S. Bhusari

Sr. No.	Title	Name of Journal	Volume & Page	Year	ISSN No.

1	Development and Validation of UV-Visible Spectrophotometric Method for Simultaneous Estimation of Picroside I and Picroside II in Bulk Drug and Pharmaceutical Formulation.	GIS SCIENCE JOURNAL	9(6):790-809.	2022	1869-9391
2	Development and Validation of UV-Spectrophotometric Method for Estimation of Canagliflozin in Bulk& Pharmaceutical Form.	The International journal of analytical and experimental modal analysis.	14(6): 652-668	2022	0886-9367
3	Development and Validation of A Novel and Simple RPHPLC Method for Estimation of Tangeretin in OrangePeel Powder Extracts.	World Journal of Pharmaceutical Research	11(7): 578-588	2022	2277– 7105
4	Development and Validation of High-Performance Liquid Chromatography method for Apigenin from parsley leaves extract.	International Journal of Recent Advances in Multidisciplinary Topics.	3 (4): 179-183	2022	**2582-7839**
5	Development and Validation of Q-Absorbance Ratio SpectrophotometricMethod for the Simultaneous Estimation of Metformin and Empagliflozin; inBulk and Formulation.	Journal of Science, Technology and Development.	11(4): 18-39	**2022**	0950-0707
6	Formulation & Evaluation of Proliposome of Morin by using Solvent Evaporation Technique.	European Journal of Pharmaceutical and Medical Research	9(3): 68-75	**2022**	2394-3211
7	Development and Validation of UV-Visible Spectrophotometric Method for Estimation of Morin in Bulk and Formulation.	International Journal of Research Publication and Reviews.	3(2): 545-553	**2022**	2582-7421
8	Development and Validation of UV-Visible SpectrophotometricMethod for Etodolac.	International Journal of Pharmaceutical Research and Applications.	7(1):1392-1397	**2022**	2249-7781
9	Formulation and Evaluation of Sustained Release Pellets of Metformin Hydrochloride by Using Natural Polymer.	International Journal of All Research Education and Scientific Methods.	9(12): 446-458	**2021**	2455-6211
10	Role of Polymeric Interaction in Solubility Enhancement of Etodolac by Ball Milling and Hot Melt Extrusion Techniques.	World Journal of Pharmaceutical Research	10 (12) 1537-1548	**2021**	2277–7105
11	Biochemical and Antibacterial Studies of Hemidesmus Indicus Root Extracts against selected Multi Drug Resistance Human Pathogens.	International Journal of Research Publication and Reviews.	2(10):117-122	**2021**	2582-7421
12	Development and Validation of A Simple UV Spectrophotometric Method for the Determination of Resveratrol in Bulk and Marketed Dosage Formulations.	International Journal of Pharmaceutical and Biological Science Archive.	9(4): 34-39	**2021**	2349-2678

13	Development and Validation of UV-Visible Spectrophotometric Method for Estimation of Apigenin in Parsley Leaves Extract.	International Journal of Recent Advances in Multidisciplinary Topics.	2(8): 68-72	**2021**	2582-7839
14	Phytochemical Investigation, TLC-HPLC Fingerprinting and Antioxidant Activity of Cissus repanda Roots.	Indian Journal of Pharmaceutical Education and Research.	54 (4), 1104-1108	**2020**	-
15	Development and Validation of UV-Spectrophotometric Method for Estimation of Tangeretin in Orange Peel Powder.	World Journal of Pharmaceutical Research.	9(15): 1345-1356	**2020**	2277– 7105
16	Development and Validation of UV-Spectrophotometric Method for Estimation of Daidzein in Soy Dry Extracts.	World Journal of Pharmaceutical and life sciences	6(11): 102-107	**2020**	2454-2229
17	Formulation and Evaluation of sustained release pellets of Zidovudine by using Extrusion and Spheronization Technique.	Asian Journal of Research in Pharmaceutical Sciences	10(4): 241-247	**2020**	2231–5640(print) 231–5659 (Online)
18	Development and Evaluation of Paliperidone Capsule for Sustained Release Activity using Natural Polymer.	World Journal of Pharmaceutical Research	9(8): 2017-2030	**2020**	2277– 7105
19	"Formulation & Evaluation of Proliposome of Eletriptan Hydrobromide by using Solvent Evaporation Technique"	World Journal of Pharmacy and Pharmaceutical Sciences	9(8): 1651-1667	**2020**	2278 – 4357
20	Development & evaluation of matrix type sustained release tablet of lamivudine by using natural polymers.	International Journal of Research in Pharmacy and Pharmaceutical Sciences	5(4): 40-46	2020	2455-698X
21	Development and Validation of High-Performance Thin Layer Chromatography Method for Estimation of Rifabutin in Bulk and Formulation.	Asian Journal of Pharmaceutical Analysis	10(1): 1-5	**2020**	2231–5667 (Print) 2231–5675 (Online
22	Physicochemical properties determination of Picroside-II.	Indian Drugs	56(8): 27-37	**2019**	
23	Development and Validation of Q-absorbance ratio spectrophotometric method for the simultaneous estimation of Rifampicin and its bioenhancer; 3', 5-dihydroxyflavone-7-O-β-D-galacturonide-4'-O-β-D-glucopyranoside; in bulk and formulation.	Journal of Pharmaceutical and Scientific Innovation	8(5): 182-188	**2019**	2277 –4572
24	Simultaneous UV-Visible spectrophotometric determination of etoposide and piperine analog-i in bulk and pharmaceutical formulation by first-order derivative spectroscopic method.	European Journal of Pharmaceutical and Medical Research	6(8): 425-432	**2019**	2394-3211

25	Development and validation of RP-HPLC method for Simultaneous estimation of doxorubicin and hydroxychavicol in bulk and pharmaceutical formulation: implications in routine analysis.	Asian Journal of Research in Chemistry and Pharmaceutical Sciences	7(2): 499-507	**2019**	2349 – 7106
26	Validated RP-HPLC for Simultaneous Estimation of Etoposide and Picroside-II in Patented Pharmaceutical Formulation and the Bulk.	International Journal of Pharmaceutical and Phytopharmacological Research	9(2): 83-90	**2019**	2250-1029
27	Comparative Evaluation of Baicalein from *Oroxylum indicum* by using Conventional and Non-Conventional Extraction Methodology	Research Journal of Pharmacy and Technology	12(4): 1817-1822	**2019**	**0974-3618**
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31	Development and Validation of Spectrofluorimetric Method for the Estimation Picroside II in *Picrorhiza Kurroa* Extracts: Application in standardization**.**	Asian Journal of Research in Chemistry and Pharmaceutical Sciences.	7(1):206-213	**2019**	**2230-7605**
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33	Anti-hepatotoxic effect and phytochemical analysis of *Berberis aristata*bark against carbon tetrachloride-induced hepatic damage in rats.	International Journal of Pharmacy and Biological Sciences	9(1): 616-621	**2019**	**2321-3272**
34	Comparative Evaluation of Baicalein from *Oroxylum indicum* by Using Conventional and Non-Conventional Extraction Methodology.	Research Journal of Pharmacy & Technology	-	**2018**	**0974-3618**
35	Development and Validation of UV-Visible Spectrophotometric Method for Estimation of Darifenacin Hydrobromide in Bulk and Formulation.	Asian Journal of Biochemical and Pharmaceutical Research	8(4): 57-64	**2018**	**2231-2560**

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38	Development and validation of UV-visible spectrophotometric method for estimation of Budesonide in bulk and formulation	Journal of Pharma Research	7(12):300-304.	**2018**	**2319-5622**
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42	Development & Validation of UV-visible spectrometry method for water soluble vitamin folic acid in pellet formulation.	International Journal of Research in Pharmacy and Pharmaceutical Sciences	3(2): 107-110	**2018**	**2455-698X**
43	Validated simultaneous HPLC assay for rifampicin, isoniazid and piperine formulation.	Journal of Pharmacy & Pharmaceutical Sciences	7(7): 1441-1451	**2018**	**2278-4357**

V. Dr. A. P. Sarkate

1. Molecular Dynamic Simulations based Discovery and Development of Thiazolidin-4-one derivatives as EGFR inhibitors targeting resistance in Non-Small Cell Lung Cancer (NSCLC)

   Kshipra S. Karnik, **Aniket P. Sarkate**, Deepak K. Lokwani, Shailee V. Tiwari, Rajaram Azad,Pravin S. Wakte

   Journal of Biomolecular Structure & Dynamics (Accepted)

(ISSN: 1538-0254)

2. Discovery, Design, and Development of effective and stable binding compounds for mutant EGFR inhibition

   Kshipra S. Karnik, **Aniket P. Sarkate**, Vaishanavi S. Jambhorkar, Pravin S. Wakte

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4. A Rational approach to anticancer drug design: 2D and 3D- QSAR, Molecular docking and ADME properties in silico studies of thymidine phosphorylase inhibitors

   Shashikant V. Bhandari, Vaibhav V. Raut, Shital M. Patil, **Aniket P. Sarkate**

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5. Design, Synthesis, Biological evaluation and in silico studies ofEGFR inhibitors based on 4-oxo-chromane scaffoldtargeting resistance in Non-Small Cell Lung Cancer (NSCLC)

   Kshipra S. Karnik, **Aniket P. Sarkate**, Shailee V. Tiwari, Rajaram Azad, Pravin S. Wakte

   Medicinal Chemistry Research, 31, 2022, 1500-1516

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6. Explorations of novel pyridine-pyrimidine hybrid phosphonate derivatives as aurora kinase inhibitors

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7. Microwave assisted chlorosulfonic acid catalyzed convenient synthesis of some quinazolinones from 2-phenylindole

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Russian Journal of Organic Chemistry, 58 (3), 2022, 428-432

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8. Development of Triple mutant T790M/C797S Allosteric EGFR inhibitors:

A Computational Approach

Kshipra S. Karnik, **Aniket P. Sarkate**, Deepak K. Lokwani, Ishudeep S. Narula, Prasad V. L. S. Burra, Pravin S. Wakte

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9. Free energy perturbation guided Synthesis with Biological Evaluation of Substituted Quinoline derivatives as small molecule L858R/T790M/C797S mutant EGFR inhibitors targeting resistance in Non-Small Cell Lung Cancer (NSCLC)

Kshipra S. Karnik, **Aniket P. Sarkate**, Shailee V. Tiwari, Rajaram Azad, Pravin S. Wakte

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10. Copper catalyzed synthesis of aryloxy tethered symmetrical 1,2,3-triazoles as potent 14 α-demethylase inhibitors and antifungal agents

Tejshri R. Deshmukh, Vijay M. Khedkar, **Aniket P. Sarkate**, Jaiprakash N. Sangshetti, Shailee V. Tiwari, Bapurao B. Shingate

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12. Synthesis and in vitro anticancer activities of new 1,4-disubstituted-1,2,3-triazoles derivatives through Click Approach

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13. Design, Synthesis and Biological Evaluation of Tetrahydrodibenzo [b,g] [1,8] napthyridinones as Potential Anticancer Agents and Novel Aurora Kinases Inhibitors

Asha V. Chate, Pramod A. Tagad, Giribala M. Bondle, **Aniket P. Sarkate**, Shailee V. Tiwari, Rajaram Azad

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14. N-Benzylation of 6-aminoflavone by reductive amination and efficient access to some novel anticancer agents via topoisomerase II inhibition

Nitin M. Thorat, **Aniket P. Sarkate**, Deepak K. Lokwani, Shailee V. Tiwari, Rajaram Azad, Shankar R. Thopate

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15. One pot synthesis, in silico study and evaluation of some novel flavonoids as potent topoisomerase II inhibitors

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16. Computational and Synthetic approach with Biological Evaluation of Substituted Quinoline derivatives as small molecule L858R/T790M/C797S triple mutant EGFR inhibitors targeting resistance in Non-Small Cell Lung Cancer (NSCLC)

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17. Ultrasound assisted synthesis of tetrazole based pyrazolines and isoxazolines as potent anticancer agents via inhibition of tubulin polymerization

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18. Microwave assisted copper slag catalyzed green S-arylation of benzene boronic acids and thiophenols

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19. Synthesis and evaluation of novel sulfonamide analogues of 6/7-aminoflavones as anticancer agents via topoisomerase II inhibition

Rohini N. Shelke, Dattatraya N. Pansare, **Aniket P. Sarkate**, Ishudeep K. Narula, Deepak K. Lokwani, Shailee V. Tiwari, Rajaram Azad, Shankar R. Thopate

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20. Auto QSAR- A Fast Approach for Creation and Application of QSAR Models through Automation

Kshipra S. Karnik, Ishudeep Singh Narula, **Aniket P. Sarkate**, and Pravin S. Wakte

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Deepak K. Lokwani, **Aniket P. Sarkate**, Kshipra S. Karnik, Anna Pratima G. Nikalje, Julio A. Saijas

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22. New amide linked dimeric 1,2,3-triazoles bearing aryloxy scaffolds as a potent antiproliferative agents and EGFR tyrosine kinase phosphorylation inhibitors

Tejshri R. Deshmukh, **Aniket P. Sarkate**, Deepak K. Lokwani, Shailee V. Tiwari, Rajaram Azad, Bapurao B. Shingate

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23. A convenient catalyst-free synthesis of some substituted pyridine benzamides from aryl aldehydes

Vaishanavi S. Jambhorkar, **Aniket P. Sarkate**, Aishwarya P. Rajhans, Kshipra S. Karnik, Sajed H. Ansari, Shambala U. Chavan, Yogesh W. More, Dattatraya N. Pansare

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(ISSN 2063-5346)

24. Spectral elucidation with molecular docking study between isatin analogous and bovine serum albumin

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(ISSN 2405-8300)

25. Simple chromium catalyzed oxidative synthesis of quinazolinones and benzoxazinones from 2-aminobenzamide and anthranilic acid with arylaldehydes

Ashwini V. Izankar, **Aniket P. Sarkate**, Pramod S. Patil, Arjun L. Khandare, S. N. Sinha, Kshipra S. Karnik, Yogesh W. More and Dattatraya N. Pansare

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(ISSN 2063-5346)

26. A new efficient domino approach for the synthesis of coumarin-pyrazolines as antimicrobial agents targeting bacterial D-alanine-D-alanine ligase

Asha V. Chate, Ankita A. Redlawar, Girabala M. Bondle, **Aniket P. Sarkate**, Shailee V. Tiwari, Deepak K. Lokwani

New Journal of Chemistry; 43, 2019, 9002-9011 **Int**

(ISSN 1369-9261)

27. Green synthesis of 4-methoxybenzylidene thiazole derivatives using potassium carbonate as base under ultrasound irradiation

Dattatraya N. Pansare, Rohini N. Shelke, Chandraknat D. Pawar, **Aniket P. Sarkate**, Pravin N. Chavan, Shankar R. Thopate and Devanand B. Shinde

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28. Straightforward multicomponent synthesis of pyrano[2,3-d]pyrimidine-2,4,7-triones in β-cyclodextrin cavity and evaluation of their anticancer activity

Manisha R. Bhosale, Pooja Andil, Diksha Wahul, Giribala M. Bondle, **Aniket Sarkate**, Shailee V. Tiwari

Journal of the Iranian Chemical Society; 16, 2019, 1553-1561 **Int**

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29. Peel extract associated oxidative green dakin synthesis of some phenols using aqueous banana extract catalyst

Ishwari A. Kale, Nileema S. Gore, **Aniket P. Sarkate**, Bhagwan K. Sakhale, Arjun L. Khandare, S. N. Sinha, Kshipra S. Karnik, Dattatraya N. Pansare

European Chemical Bulletin; 8 (5), 2019, 160-163 **Int**

(ISSN 2063-5346)

30. Synthesis of (Z)-5-(substituted benzylidene)-2-((substituted phenyl) amino)thiazol-4(5H)-one analogues with antitubercular activity

Rohini N. Shelke, Dattatraya N. Pansare, **Aniket P. Sarkate**, Kshipra S. Karnik, Ajinkya P. Sarkate, Devanand B. Shinde, Shankar R. Thopate

Journal of Taibah University for Science; 13 (1), 2019, 678-686 **Int**

(ISSN 1658-3655)

31. Thionyl chloride induced convenient synthesis of benzamides from 3-bromo-5-nitrobenzoic acid and amines under solvent free conditions

Shritesh D. Jagtap, **Aniket P. Sarkate**, Arjun L. Khandare, Ishudeep K. Narula, Kshipra S. Karnik, Dattatraya N. Pansare, Rohini N. Shelke

European Chemical Bulletin; 8 (4), 2019, 123-127 **Int**

(ISSN 2063-5346)

32. Synthesis of 2-((5-benzylidene-4-oxo- 4, 5-dihydrothiazol- 2-yl)-substituted amino acids as anticancer and antimicrobial agents

Rohini N. Shelke, Dattatraya N. Pansare, Chandraknat D. Pawar, Mininath C. Khade, Vrushali N. Jadhav, Satish U. Deshmukh, **Aniket P. Sarkate**, Nileema S. Gore, Rajendra P. Pawar, Devanand B. Shinde, Shankar R. Thopate

European Chemical Bulletin; 8 (2), 2019, 63-70 **Int**

(ISSN 2063-5346)

33. Nano copper catalyzed microwave assisted coupling of benzene boronic acids with thiophenols

Dinesh S. Gavhane, **Aniket P. Sarkate**, Kshipra S. Karnik, Shritesh D. Jagtap, Sajed H. Ansari, Ashwini V. Izankar, Ishudeep K. Narula, Vaishnavi S. Jambhorkar, Aishwarya P. Rajhans

Letters in Organic Chemistry; 16 (6), 2019, 491-494 **Int**

(ISSN 1875-6255)

34. A facile synthesis of substituted 2-(5-(benzylthio)-1,3,4-oxadiazol-2-yl) pyrazine using microwave irradiation and conventional method with antioxidant and anti-cancer activity

Sanjeev R. Patil, **Aniket P. Sarkate**, Kshipra S. Karnik, Ashish Arsondkar, Vrushali Patil, Jaiprakash N. Sangshetti, Anil S.Bobade, Devanand B. Shinde

Journal of Heterocyclic Chemistry; 56 (3), 2019, 859-866 **Int**

(ISSN 1943-5193)

35. Synthesis and anticancer evaluation of new benzene sulfonamide derivatives

Rohini N. Shelke, Dattatraya N. Pansare, Chandraknat D. Pawar, Mininath C. Khade, Vrushali N. Jadhav, Satish U. Deshmukh, Ajit K. Dhas, Pravin N. Chavan, **Aniket P. Sarkate**, Rajendra P. Pawar, Devanand B. Shinde and Shankar R. Thopate

European Chemical Bulletin; 8 (1), 2019, 1-6 **Int**

(ISSN 2063-5346)

36. Glycerol mediated synthesis, biological evaluation and molecular docking study of 4-(1H-pyrazol-4-yl)-polyhydroquinolines as potent antitubercular agents

Dattatraya K. Jamale, Santosh S. Undare, Navanath J. Valekar, **Aniket P. Sarkate**, Govind B Kolekar, Prashant V. Anbhule

Journal of Heterocyclic Chemistry; 56 (2), 2019, 608-618 **Int**

(ISSN 1943-5193)

37. Copper-Catalyzed Convenient Synthesis and SAR Studies of Substituted-1,2,3-Triazole as Antimicrobial Agents

Aniket P. Sarkate, Kshipra S. Karnik, Pravin S. Wakte, Ajinkya P. Sarkate, Ashwini V. Izankar, Devanand B. Shinde

Letters in Drug Design & Discovery; 16 (1), 2019, 3-10 **Int**

(ISSN 1875-628X)

38. DIPEAc promoted one-pot synthesis of dihydropyrido[2,3-d:6,5-d]dipyrimidinetetraone and pyrimido[4,5 d]pyrimidine derivatives as potent tyrosinase inhibitors and anticancer agents: *in vitro* screening, Molecular docking and ADMET predictions

Manisha R. Bhosle, Lalit D. Khillare, Jyotirling R. Mali, **Aniket P. Sarkate**, Deepak K. Lokwani, Shailee V. Tiwari

New Journal of Chemistry; 42, 2018, 18621-18632 **Int**

(ISSN 1369-9261)

39. Design, synthesis and SAR study of novel spiro[pyrimido[5,4-b]quinoline-10,5-pyrrolo[2,3-d]pyrimidine] derivatives as promising anticancer agents

Asha V. Chate, Sagar P. Kamdi, Amruta N. Bhagat, Chetan K. Jadhav, Amol Nipte, **Aniket P. Sarkate**, Shailee V. Tiwari, Charansingh H. Gill

Journal of Heterocyclic Chemistry; 55, 2018, 2297-2302 **Int**

(ISSN 1943-5193)

40. An efficient multicomponent synthesis and *in vitro* anticancer activity of dihydropyranochromene and chromenopyrimidine-2,5-diones

Manisha R. Bhosle, Diksha B. Wahul, Giribala M. Bondle, **Aniket Sarkate**, Shailee V. Tiwari

Synthetic Communications; 48, 2018, 2046-2060 **Int**

(ISSN 1532-2432)

41. Palladium catalyzed tricyclohexylphosphine ligand associated synthesis of N-(2-(pyridine-4-yl)-1H-pyrrolo[3,2-c]-pyridin-6-yl-(substituted)-sulfonamide derivatives as antiproliferative agents

Chandrakant D. Pawar, **Aniket P. Sarkate**, Kshipra S. Karnik, Devanand B. Shinde

Journal of Heterocyclic Chemistry; 55, 2018, 1695-1701 **Int**

(ISSN 1943-5193)

42. One-Pot, Four-Component Synthesis and SAR studies of Spiro[pyrimido[5,4-b]quinoline-10,5-pyrrolo[2,3-d]pyrimidine] derivatives Catalyzed by -cyclodextrin in water as potential anticancer agents

Asha V. Chate, Gajanan Y. Shinde, **Aniket P. Sarkate**, Shailee V. Tiwari, Charansingh H. Gill

Research on Chemical Intermediates; 44, 2018, 4029-4043 **Int**

(ISSN 1568-5675)

43. Copper catalyzed ligand free microwave mediated synthesis of α-ketoamides from aromatic ketones

Kshipra S. Karnik, **Aniket P. Sarkate**, Shritesh D. Jagtap, Pravin S. Wakte

Current Microwave Chemistry; 5, 2018, 39-45 **Int**

(ISSN 2213-3364)

44. Synthesis, biological evaluation, molecular docking study and acute oral toxicity study of coupled Imidazolyl-Pyrimidine derivatives

Shailee V. Tiwari, Anna Pratima G. Nikalje, Deepak K. Lokwani, **Aniket P. Sarkate** and Kizukala Jamir

Letters in Drug Design & Discovery; 15 (5), 2018, 475-487 **Int**

(ISSN 1875-628X)

45. Ultrasound assisted synthesis of novel pyrazole and pyrimidine derivatives as antimicrobial agents

Vidya S. Dofe, **Aniket P. Sarkate**, Zarina M. Shaikh, Chetan K. Jadhav, Amol S. Nipte, Charansingh H. Gill

Journal of Heterocyclic Chemistry; 55(3), 2018, 756-762 **Int**

(ISSN 1943-5193)

46. Ultrasound assisted synthesis, antimicrobial activity of novel tetrazole based pyrazole and pyrimidine derivatives

Vidya S. Dofe, **Aniket P. Sarkate**, Zarina M. Shaikh, Charansingh H. Gill

Heterocyclic Communications; 24 (1), 2018, 59-65 **Int**

(ISSN 2191-0197)

47. Ionic Liquid Promoted Synthesis Of Novel Chromone-Pyrimidine Coupled Derivatives, Antimicrobial Analysis, Enzyme Assay, Docking Study And Toxicity Study

Shailee V. Tiwari, Julio A. Seijas, Maria Pilar Vazquez-Tato, **Aniket P. Sarkate**, Kshipra S. Karnik and Anna Pratima G. Nikalje

Molecules; 23 (2), 440, 2018, 1-23 **Int**

(ISSN 1420-3049)

48. Imidazole-thiazole coupled derivatives as novel lanosterol 14-α demethylase inhibitors: Ionic liquid mediated synthesis, biological evaluation and molecular docking study

Anna Pratima G. Nikalje, Shailee V. Tiwari, **Aniket P. Sarkate**, Kshipra S. Karnik

Medicinal Chemistry Research; 27, 2018, 592-606 **Int**

(ISSN 1554-8120)

49. Design and synthesis of some new piritrexim analogs as potential anticancer agents

Poojali P. Warekar, Kirti T. Patil, Priyanka T. Patil, **Aniket P. Sarkate**, Kshipra S. Karnik, Santosh S. Undare, Govind B. Kolekar, Madhukar B. Deshmukh, Shivadatta Prabhu, Prashant V. Anbhule

Research on Chemical Intermediates; 44 (2), 2018, 749-767 **Int**

(ISSN 1568-5675)

50. Green synthesis and inhibitory effect of novel quinoline based thiazolidinones on the growth of MCF-7 human breast cancer cell line by G2/M cell cycle arrest

Vidya S. Dofe, **Aniket P. Sarkate**, Rajaram Azad, Charansingh H. Gill

Research on Chemical Intermediates; 44 (2), 2018, 1149-1160 **Int**

(ISSN 1568-5675)

51. Novel 2-(nitrooxy)ethyl 2-(4-(substituted phenyl)-2-((substituted phenyl)amino)thiazol-5-yl)acetate as anti-inflammatory, analgesic and nitric oxide releasing agents: Synthesis and Molecular Docking studies

Aniket P. Sarkate, Deepak K. Lokwani, Kshipra S. Karnik, Devanand B. Shinde

Anti-Inflammatory & Anti-Allergy Agents in Medicinal Chemistry; 16 (3),

2017, 153-167 Int

(ISSN 1875-614X)

52. Synthesis and antiproliferative evaluation of new (4-substituted-3,4-dihydro-2*H*-benzo[b][1,4]oxazin-2-yl)methane substituted sulfonamide derivatives

Chandrakant Dhondiram Pawar, **Aniket Sarkate**, Kshipra Karnik, Dattatraya Navnath Pansare and Devanand Baburao Shinde

European Journal of Chemistry; 8 (4), 2017, 384-390 **Int**

(ISSN 2153-2257)

53. Synthesis and evaluation of N-(Substituted phenyl)-2-(3-substituted) sulfamoyl) phenyl) acetamide derivatives as Anticancer Agents

Chandrakant D. Pawar, **Aniket P. Sarkate**, Kshipra S. Karnik, Devanand B. Shinde

Egyptian Journal of Basic and Applied Sciences; 4, 2017, 310-314 **Int**

(ISSN 2314-808X)

54. Ultrasound mediated synthesis of novel 1,2,3-triazole based pyrazole and pyrimidine derivatives as antimicrobial agents

Vidya S. Dofe, **Aniket P. Sarkate**, Zarina M. Shaikh, Charansing H. Gill

Journal of Heterocyclic Chemistry; 54, 6, 2017, 3195-3201 **Int**

(ISSN 1943-5193)

55. Novel quinoline-based oxadiazole derivatives induce G2/M arrest and apoptosis in human breast cancer MCF-7 cell line

Vidya S. Dofe, **Aniket P. Sarkate**, Rajaram Azad, Charansingh H. Gill

Research on Chemical Intermediates; 43, 2017, 7331-7345 **Int**

(ISSN 1568-5675)

56. Ligand free Microwave Assisted Copper-Catalyzed Convenient Synthesis of Substituted Tertiary Amines from Nitroarenes

Kshipra S. Karnik, **Aniket P. Sarkate**, Sushilkumar S. Bahekar, Pravin S. Wakte

Current Microwave Chemistry; 4(3), 2017, 256-261 **Int**

(ISSN 2213-3364)

57. Novel O-alkylated chromones as antimicrobial agents: Ultrasound mediated synthesis, molecular docking and ADME prediction

Vidya S. Dofe, **Aniket P. Sarkate**, Deepak K. Lokwani,Devanand B. Shinde, Santosh H. Kathwate,Charansing H. Gill

Journal of Heterocyclic Chemistry; 54 (5), 2017, 2678-2685 **Int**

(ISSN 1943-5193)

58. Greener approach: Ionic liquid [Et3NH][HSO4] catalyzed multicomponent synthesis of 4-arylidene-2-phenyl-5(4H)-oxazolones or azlactones under solvent free condition

Santosh A. Jadhav, **Aniket P. Sarkate**, Mazahar Farooqui, Devanand B. Shinde

Synthetic Communications; 47 (18), 2017, 1676-1683 **Int**

(ISSN 1532-2432)

59. Expeditious One pot Multicomponent Microwave assisted Green synthesis of substituted 2-phenyl Quinoxaline and 7-Bromo-3-(4-ethylphenyl) pyrido[2,3-b]pyrazine in Water-PEG and Water-Ethanol

Santosh A. Jadhav, **Aniket P. Sarkate**, Mahesh G. Shioorkar , Devanand B. Shinde

Synthetic Communications; 47 (18), 2017, 1661-1667 **Int**

(ISSN 1532-2432)

60. Synthesis, antimicrobial activity and anti-biofilm activity of novel tetrazole derivatives

V. S. Dofe , **A. P. Sarkate**, S. H. Kathwate , C. H. Gill

Heterocyclic Communications; 23 (4), 2017, 325-330 **Int**

(ISSN 2191-0197)

61. Rapid One-Pot Microwave Assisted Synthesis of 4-Arylidene-2-Phenyl-5(4*H*)-Oxazolones or Azlactones

Santosh A. Jadhav, Rajendra S. Dhamnaskar, **Aniket P. Sarkate**, Rajendra K. Pardeshi

Heterocyclic Letters; 7 (3), 2017, 683-691 **Int**

(ISSN 2230-9632)

62. ZrO_2 nano particle catalyzed multicomponent synthesis of 3-benzylidene-1-phenylquinoline-2,4(1*H*,3*H*)-diones and its antimicrobial activity

Santosh A. Jadhav, **Aniket P. Sarkate**, Anil V. Raut, D. B. Shinde

Research on Chemical Intermediates; 43, 2017, 4531-4547 **Int**

(ISSN 1568-5675)

63. Facile Synthesis Of Novel Coumarin Derivatives, Antimicrobial analysis, Enzyme Assay, Docking Study, ADMET Prediction And Toxicity Study

Shailee V. Tiwari, Julio A. Seijas, M. Pilar Vazquez-Tato, **Aniket P. Sarkate**, Kshipra S. Karnik, Anna Pratima G. Nikalje

Molecules; 22 (7), 1172, 2017, 1-18 **Int**

(ISSN 1420-3049)

64. Microwave-assisted Facile Synthesis, Anticancer Evaluation and Docking study Of *N*-((5-(substituted methylene amino)-1,3,4-thiadiazol-2-yl)methyl) Benzamide Derivatives.

Shailee V. Tiwari, Sumaiya Siddiqui, Julio A. Seijas, M. Pilar Vazquez-Tato , Aniket P. Sarkate, Deepak K. Lokwani and Anna Pratima G. Nikalje

Molecules; 22 (6), 995, 2017, 1-14 **Int**

(ISSN 1420-3049)

65. Microwave and conventional method assisted synthesis of 2-(substituted) -3-(4-methoxybenzyl) thiazolidin-4-ones using $ZrOCl_2{\cdot}8H_2O$ as a catalyst

Aniket P. Sarkate, Dattatraya N. Pansare, Ishwari A. Kale, Devanand B. Shinde

Current Microwave Chemistry; 4, 2017, 139-145 **Int**

(ISSN 2213-3364)

66. Microwave assisted copper-catalyzed synthesis of substituted benzamides through decarboxylative C-N cross coupling

Aniket P. Sarkate, Dattatraya N. Pansare, Kshipra S. Karnik, Ishwari A. Kale, Sushilkumar S. Bahekar, Devanand B. Shinde

Current Microwave Chemistry; 4 (2), 2017, 163-167 **Int**

(ISSN 2213-3364)

67. Rapid and efficient one pot microwave assisted synthesis of 2- phenylimidazo[1,2-a]pyridines and 2-phenylimidazo[1,2-a]quinoline in Water-PEG-400

Santosh A. Jadhav, Mahesh G. Shioorkar, Omprakash S. Chavan, **Aniket P. Sarkate**, Devanand B. Shinde

Synthetic Communications; 47 (4), 2017, 285-290 **Int**

(ISSN 1532-2432)

68. Synthesis and Evaluation of 1,2,3-Triazole-Containing Vinyl and Allyl Sulfones as Anti-Trypanosomal Agents

William Doherty, Nikoletta Adler, Andrew Knox, Derek Nolan, Joanna McGouran, Anna Pratima Nikalje, Deepak Lokwani, **Aniket Sarkate** and Paul Evans

European Journal of Organic Chemistry; 1, 2017, 175-185 **Int**

(ISSN 1099-0690)

69. Synthesis, antimicrobial evaluation, and molecular docking Studies of novel chromone based 1,2,3-triazoles

Vidya S. Dofe, **Aniket P. Sarkate**, Deepak K. Lokwani, Santosh H. Kathwate, Charansingh H. Gill

Research on Chemical Intermediates; 43, 1, 2017, 15-28 **Int**

(ISSN 1568-5675)

VI. Mr. V. V. Lomte

1. Pawar, S.D., Lomte, V.V. and **Sakhale B.K.** (2017). Effect of Pretreatments on Drying Characteristics of Thompson Seedless Grapes. Asian J. Dairy & Food Research 36 (4): 332-336.

2. **EFFECT OF DEEP CRYOGENIC TREATMENT ON MECHANICAL PROPERTIES OF 7075 ALUMINUM ALLOY**

Shirish Patil, Vinay Lomte

International Journal of Mechanical Engineering and Technology (IJMET) Volume 12, Issue 01, January 2021, pp. 16-26.

VII. Miss. G. A. Kallawar

1. Bismuth titanate based photocatalysts for degradation of persistent organic compounds in wastewater: A comprehensive review on synthesis methods, performance as photocatalyst and challenges

Gauri A.Kallawar, Divya P.Barai, Bharat A.Bhanvase

Journal of Cleaner Production, Volume 318, 10 October 2021, 128563.

Book Chapter

Name of faculty	Name of Book Chapter	Name of Book	ISBN Number	Year	Publisher
Dr. B. K. Sakhale	Nutritional Values & Processing of Tropical Tuber Crops	Technologies for Value Addition in Food Products and Processes	9781771887984	2019	CRC Press
	Rheological Properties of Dough	Engineering Properties of Agricultural Produce	978-93-89130-44-7	2020	New India Publishing Agency, New Delhi
	Sweet Potato: Nutritional Quality & Processing Technology	Sweet Potatoes: Growth, Development and Harvesting	978-1-53618-611-6	2020	Nova Science Publisher, Inc., New York, USA
	Natural Food Antioxidants	Plant Antioxidant and Health	978-3-030-78161-3	2022	Springer Nature
	Grape Polyphenolics	Plant Antioxidant and Health	978-3-030-78161-3	2022	Springer Nature
	Advances in Antimicrobial Food Packaging	Annual Technical Volume on "Recent Developments in Food Processing Industry"	978-81-945201-3-9	2020	Chemical Engineering Division, The Institution of Engineers (India), (IEI), Kolkata
	Application of Novel Chemicals for Shelf Life Extension of Fruits and Vegetables	Annual Technical Volume on "Recent Development in Food Processing Industry"	978-81-945201-3-9	2020	Chemical Engineering Division, The Institution of Engineers (India), (IEI), Kolkata
	Processing Technology for Development of Little Millet Based Probiotic Rice	Annual Technical Volume on "Recent Development in Food Processing Industry"	978-81-945201-3-9	2020	Chemical Engineering Division, The Institution of Engineers (India), (IEI), Kolkata
	Phytochemicals in Human Health	Novel Processing Methods for Plant–Based Health Foods: Extraction, Encapsulation and Health Benefits of Bioactive Compounds	9781774910740	2022	Apple Academic Press, USA

	Microencapsulation of Natural Pigments	Novel Processing Methods for Plant–Based Health Foods: Extraction, Encapsulation and Health Benefits of Bioactive Compounds	9781774910740	2022	Apple Academic Press, USA
	Supercritical Fluid Technique: Recent Trends in Food Processing	Advances in Food Process Engineering: Novel Processing, Preservation and Decontamination of Foods	9781774911143	2022	Apple Academic Press, USA
	Basic and Applied Concepts of Edible Packaging for Food Preservation	Fundamentals of Food Processing & Preservation	978-93-5461-146-9	2022	Daya Publishing House® A Division of Astral International Pvt. Ltd. New Delhi – 110 002
	Processing of Turmeric and Ginger	Advanced Trends in Agricultural Extension (Vol. III)	9789393502049	2022	Integrated Publications, Delhi
Dr. A. P. Sarkate	Natural Food Antioxidants	Plant Antioxidant and Health	978-3-030-78161-3	2022	Springer Nature
	Potential of Ultrasound Technology in Nutraceuticals and Pharmaceuticals	Advanced Research Methods in Food Processing Technologies	9781774913482	2022	CRC Press
	Applications of Microwave Technology in Food Processing	Advanced Research Methods in Food Processing Technologies	9781774913482	2022	CRC Press
	Supercritical Fluid Technology: Recent Trends in Food Processing	Advances in Food Process Engineering: Novel Processing, Preservation and Decontamination of Foods	9781774911143	2022	CRC Press
Miss. G. A. Kallawar	Nanomaterial-based photocatalytic membrane for organic pollutants removal	Handbook of Nanomaterials for Wastewater Treatment	978-0-12-821496-1	2021	Elsevier

Details of books

Name of faculty	Name of Book	ISBN Number	Year	Publisher
Dr. B. K. Sakhale	Objective Food Science and Technology	9788193404669	2017	Brillion Publishing
	Extrusion Cooking of Food	978-81-945327-3-6	2020	Agri-Biovet Press
	Nutraceuticals and Human Health	978-93-90757-21-3	2021	Brillion Publishing
Dr. A. P. Sarkate	A Practical Book of Pharmaceutical Chemistry-II	97815-43343-45-8	2019	S. Vikas and Company

	A Practical Book of Pharmaceutical Chemistry-I	97815-43344-0 2-8	2020	S. Vikas and Company
	Nutraceuticals and Human Health	978-93-90757-2 1-3	2021	Brillion Publishing
	A Practical Book of Pharmaceutical Chemistry-I	97815-43345-5 7-5	2022	S. Vikas and Company
	A Text Book of Pharmacy Law and Ethics	97815-43345-9 6-4	2022	S. Vikas and Company
	An Approach to Biochemistry & Clinical Pathology	97815-43346-7 6-3	2022	S. Vikas and Company

Patents

Name of faculty	Name of patent	Year	Number	Status
Dr. P. S. Wakte	Novel heterocyclic compounds as EGFR and ER inhibitors methods of preparation thereof	2021	202121016528	Filed
	"PHARMACEUTICAL COMPOSITION FOR ENHANCING BIOAVAILABILITY OR BIOEFFICACY OF ANTI-HIV DRUG"	2021	201721014398 (Patent No. 372981)	Granted
	"PHARMACOKINETIC APPROACH BASED BIOAVAILABILITY OR BIOEFFICACY ENHANCEMENT OF A DRUG"	2021	201721033775 (Patent No. 380641)	Granted
	"PHARMACEUTICAL COMPOSITION FOR ENHANCING BIOAVAILABILITY OR BIOEFFICACY OF A DRUG"	2022	201721000684 (Patent No. 400467)	Granted
Dr. B. K. Sakhale	High Protein-Fiber, Low Calorie, Gluten Free and Low Glycemic Food Products Incorporated with Sweet Potato Flour	2020	202021041352	Published
	Foxtail Millet-Based Gluten Free Cookies	2022	202221012403	Filed
Dr. S. S. Bhusari	"PHARMACEUTICAL COMPOSITION FOR ENHANCING BIOAVAILABILITY OR BIOEFFICACY OF ANTI-HIV DRUG"	2021	201721014398 (Patent No. 372981)	Granted

	"PHARMACOKINETIC APPROACH BASED BIOAVAILABILITY OR BIOEFFICACY ENHANCEMENT OF A DRUG"	2021	201721033775 (Patent No. 380641)	Granted
	"PHARMACEUTICAL COMPOSITION FOR ENHANCING BIOAVAILABILITY OR BIOEFFICACY OF A DRUG"	2022	201721000684 (Patent No. 400467)	Granted
Dr. A. P. Sarkate	Novel heterocyclic compounds as EGFR and ER inhibitors methods of preparation thereof	2021	202121016528	Filed
	Substituted 3, 5-diaryl pyrazole compounds as anti-cancer agents	2021	202121001303	Filed
	Substituted *N*-Phenyl-2, 2-dichloroacetamide compounds as anti-cancer agents	2021	202121002076	Filed

Details of Ph.D. students

Details of Ph.D. students

Name of faculty	Name of the student	Title of thesis	Registration year	Status
Dr. D. B. Shinde	Chandrakant D. Pawar	Development of Some Potentially Active Nitrogen Heterocycles	2014	Degree Awarded (2018)
Dr. P. S. Wakte	Venkata R. Naidu	Development Of Process Analytical Technology Tools (PAT) For Quality Pharmaceutical Formulations	2013	Degree awarded (2018)
	Gaurav Agrawal	Controlled Delivery of Therapeutic Protein/Peptide Drug Candidate of Recombinant DNA Origin	2014	Degree awarded (2018)
	Udaykumar K. Rakibe	Development& Validation of Pharmaceuticals using Modern Analytical Techniques	2013	Degree awarded (2019)
	Kshipra Satyendra Karnik	Development of some novel molecules as anticancer agents	2018	Thesis Submitted
	Nutan Subhash Kendre	Development of some bioactive compounds as anti-cancer agents	2018	Work in progress
	Kanchan Diliprao nikam	Optimization of extraction methodologies for therapeutically important phytochemical(s)	2018	Work in progress
	Mohini Anandrao Salunke	Exploration of anticancer bioactive compounds from marine macroflora	2018	Work in progress

	Preeti Tanaji Mane	COMBINATORIAL APPROACH OF PARTICLE ENGINEERING & NANOTECHNOLOGY FOR THE DEVELOPMENT OF ADVANCED DRUG DELIVERY SYSTEM (s)	2018	Work in progress
Dr. B. K. Sakhale	Sandeep S. Gaikwad	Studies on the Effect of 1-MCP on Shelf life and Postharvest Qualities of Mango and Tomato fruits	2013	Degree Awarded (2018)
	Namrata A. Giri	Studies on Development of Low Glycemic and Gluten-Free Functional Foods from Sweet potato (*Ipomoea batatus* L.)	2016	Degree Awarded (2020)
	Dhanashree B. Kulkarni	Studies on Development of Millet Based Value Added Food Products	2015	Degree Awarded (2022)
	Ramesh F. Chavan	Studies on Effect of Different Chemicals on Postharvest Quality and Shelf life of selected Cultivars of Tomato fruits	2018	Final Synopsis Submitted
	Shrutika S. Mulavekar	Studies on Extraction of Bioactive Compounds from Processing Waste of Selected Fruits and Vegetables and their Applications in Food Products	2018	Work in progress
	SyedaAmrinQuadri	Studies on Extraction of Functional Components from Different Food Sources and their Application in Formulation of Various Nutraceutically Enriched Value-added Products	2021	Work in progress
	Bhagyashri N. Raut	Effect of Different Drying Modes on Quality Characteristics of Fresh Water Fishes	2021	Work in progress
	Radha S. Waghchaure	Studies on Nutritional Profiling and Processing of Selected Local Wild Vegetables	2021	Work in progress
	Pravin R. Vairagar	Development of Novel Techniques for Rapid Evaluation of Selected Fresh and Processed Foods	2021	Work in progress
Dr. S. S. Bhusari	Avinash Narayanrao Chaudhary	Development of bioenhancer(s); an ayurveda guided concept containing formulation(s) for improved oral bioavailability of folic acid	June-2018	Work in Progress
	Gaurav BhagwandasShrangare	Oral bioavailability enhancement of selected active pharmaceutical ingredient(s) by kadme approach and its formulation development	June-2018	Work in Progress
	Nitin Madhukar Kadam	Development & optimization of alternate novel drug delivery systems using quality by design approach for poorly bioavailable oral anticancer drugs	June-2019	Work in Progress

	Mahesh Vilas Rindhe	Selected studies on some naturally occuring hepatoprotective agent(s): implications in partial development of investigational new drug application dossier	October-2020	Work in Progress
Dr. A. P. Sarkate	Mayuri Anil Patil	Development of Novel Heterocyclic Compounds as Anticancer Agents	2021	Work in progress
	Sonali Aandeep Shinde	Development of Some Compounds as Novel Anti-Cancer Agents	2021	Work in progress
	Kalusing Sega Padvi	Design and Development of Anticancer Agents by using Computer Aided Drug Design Techniques	2021	Work in progress
	Mahadevi Vitthal Kendre	Development of Novel Anticancer Agents by Molecular Modeling Approach	2021	Work in progress

5.8.2 Sponsored Research (20) Institute Marks : 20.00

2021-22 (CAYm1)

Project Title	Duration	Funding Agency	Amount(in Rupees)

2020-21 (CAYm2)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Isolation of Anti-anal fistula	2018-2021	SERB-CRG	2005000.00
			Total Amount(Y): 2005000.00

2019-20 (CAYm3)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Development of Bioenhanc	2019-22	CSIR	1908000.00
Development of National Fa	2019-22	DST-DPRP	36700000.00
			Total Amount(Z): 38608000.00

Cumulative Amount(X + Y + Z) =

5.8.3 Development activities (15) Institute Marks : 15.00

Provide details:

· Product Development

(Fortified Cookies, Fortified extruded products, Amla products, Mango processing products, Mango RTS, Apple cider, Banana wine, Tea tablet)

· Research laboratories

Herbal Drug Technology Laboratory, Sophisticated Analytical Instrumentation lab, Animal house.

· Instructional materials

Various lab manuals, SOP of instruments and MSDS of chemicals.

· Working models/charts/monograms etc.

Various instructional charts of chemical engineering, pharmaceutical and food technology. Model of Popcorn making machine, essential oil extractor

5.8.4 Consultancy (from Industry) (20) Institute Marks : 5.00

2021-22 (CAYm1)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Ghansal Rice M	1	Ghansal Rice M	40000.00
Samyak Spices	1	Samyak Spices	30000.00
Turmeric Cluste	1	Turmeric Cluste	30000.00
Masal Cluster I	1	Masala Cluster	50000.00
Honey Cluster	1	DIC Honey CLu	40000.00
Suwarnapalesh	1	Suwarnapalesh	40000.00
Bakery Cluster	1	DIC Bakery Clu	50000.00
			Total Amount(X): 280000.00

2020-21 (CAYm2)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Jaggery Cluste	1	Jaggery Cluste	30000.00
			Total Amount(Y): 30000.00

2019-20 (CAYm3)

Project Title	Duration	Funding Agency	Amount(in Rupees)
Optimnization of waste proc	02 Months	Marathwada Cl	30000.00
Cluster for Dream Soap	1 year	Dream Soap C	50000.00
Soice Cluster DIC	1 year	MSI-CDP, Yoge	40000.00
			Total Amount(Z): 120000.00

Cumulative Amount(X + Y + Z) = 430000.00

5.9 Faculty Performance Appraisal and Development System (FPADS) (10) Total Marks 10.00

Institute Marks : 10.00

Faculty Performance Appraisal letter is collected from each faculty in which they need to show their innovations and research for their self-renewal to cope up with changes in technology and develop expertise for effective implementation of curricula.

Following faculties are promoted through CAS promotion policy of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad.

Name of faculty	Cadre			
	AGP- 6000 to 7000	AGP- 7000-8000	Associate Professor	Professor
Dr. P. S. Wakte	-	-	-	√ (04/06/2014)
Dr. B. K. Sakhale	-	-	√ (05/12/2017)	√ (04/02/2021)
Mr. G. R. Pandhre	√ (25/10/2013)	√ (25/10/2018)	-	-
Miss. G. A. Kallawar	√ (20/05/2016)	-	-	-

Key points for faculty appraisal are:

A. Category I: Includes teaching and examination related work.

B. Category II: Includes curricular and extra curricular activities.

C. Category III: Includes Research and development activities.

5.10 Visiting/Adjunct/Emeritus Faculty etc. (10) Total Marks 1.00

Institute Marks : 1.00

Adjunct Faculty has been provided

1. Prof D.B Shinde:- Member MPSC,Former Vice Chancellor,SHivaji University
2. Prof.R.D Kulkarni
3. Prof U.S Annapure

6 FACILITIES AND TECHNICAL SUPPORT (80) Total Marks 80.00

6.1 Adequate and well equipped laboratories, and technical manpower (40) Total Marks 40.00

Institute Marks : 40.00

Sr. No	Name of the Laboratory	Number of students per set up(Batch Size)	Name of the Important Equipment	Weekly utilization status(all the courses for which the lab is utilized)	Technical Manpower Support		
					Name of the Technical staff	Designation	Qualification
1	Pharma Tech L	12	UV Spectroph	Utilized for the	Mr. M.R. Jagda	Laboratory Tec	B. A
2	Pharma Tech L	12	Dissolution Tes	Utilized for the	Mr. M.R. Jagda	Laboratory Tec	B. A
3	Pharma Tech L	12	Autoclave Hot	Utilized for the	Mr. M.R. Jagda	Laboratory Tec	B. A
4	Pharma.Tech. I	12	Kilo Lab React	Utiilized for 8 to	Mr. M.R. Jagda	Laboratory Tec	B. A
5	Chemistry Lab	12	Ice Flacker Sha	Utiilized for 8 to	Mr. M.R. Jagda	Laboratory Tec	B. A
6	Herbal Drug Te	12	Accelerated Sc	Utiilized for 8 to	Mr. M. R. Jagd	Laboratory Tec	B. A
7	Chemical Engi	22	Iso themial bat	Utiilized for 8 to	Mr Vikas Manw	Senior Assistar	HSC
8	Chemical Engi	22	Two tank Inter	Utiilized for 8 to	Mr Vikas Manw	Senior Assistar	HSC
9	Mechanical Op	22	Jaw Chusher I	Utiilized for 8 to	Mr Vikas Manw	Senior Assistar	HSC
10	Computer Lab-	22	14 Computer I	Utiilized for 8 to	Mr. S.J. Ghodk	Laboratory Tec	B.Sc
11	Food Lab (XI)	12	Analyser 2.Digi	Utiilized for 8 to	Mr. S.J. Ghodk	Laboratory Tec	B.Sc
12	Food Lab (XII)	12	2.Fermentor/Bi	Utiilized for 8 to	Mr. S.J. Ghodk	Laboratory Tec	B.Sc
13	Food Lab (XIII)	12	2.Fibre Extmct	Utiilized for 8 to	Mr. S.J. Ghodk	Laboratory Tec	B.Sc
14	Pilot Plant Foo	12	Sterilizer 2.Khc	Utiilized for 8 to	Mr. S.J. Ghodk	Laboratory Tec	B.Sc
15	Machine Works	22	Lathe,Milling,D	Utiilized for 8 to	Sl Telure,Amol	Welder,Mechar	ITT,B.E,ITI
16	Engineering Gr	22	Drawing Board	Utiilized for 8 to	Mr. Amol Saruk	Mechanic	B. E.

6.2 Laboratories maintenance and overall ambiance (10)

Total Marks 10.00

Institute Marks : 10.00

- Dos and Donts and Safety measures rules are diplayed in each laboratory.
- Safety shower are installed at entrance of laboratory for safety purpose
- Well trained Technical Staff are available for maintenance of Laboratory equipment.
- Servicing/Repair/Maintenance of each laboratory is done frequently.
- Department having internet speed of 100 Mbps is maintained for students and Faculty usage.
- All necessary PC system regular software like Microsoft office, browser, lab software; antivirus software etc, is installed and maintained.

Ambiance :

- Department has Full furnished with well-equipped equipments catering to all UG courses as per curriculum requirements.
- Chairs/benches are in good condition.
- Department has experienced faculty to educate the students in the fields of Chemical Technology.
- All the labs are actively functioning
- Sufficient number of windows are available for ventilation and natural light and every lab has two exit.
- Lighting system is very effective, along with the natural light in every corner of the rooms.
- Each Lab is equipped with white/black board, computer, Internet and such other amenities.

6.3 Safety measures in laboratories (10)

Total Marks 10.00

Institute Marks : 10.00

Sr. No	Laboratory Name	Safety Measures
1	Laboratories (16 No.) as per 6.1	Apron, Hand Gloves, Face Mask, safety Goggles, Head Cover, Pipette Pump, Fire extinguisher, First Aid box, Safety Shower & charts are provided in all the 16 laboratories of the Chemical Technology.

6.4 Project laboratory (20)

Total Marks 20.00

Institute Marks : 20.00

Department is having Sophisticated Analytical Instrumentation Facility which includes Equipments like UV, HPLC, FT-IR, DSC, Flash Chromotogrpahy, LC-MS-MS, GC, GC-MS/MS, ELISA Reader, Luminescence Spectrometer, Hydrogenator, Kilo Lab Reactor, Multi-station reactors, Rotavapors, Accelearted Solvent Extraction System, Lyophilizer, Schrodinger software for Docking studies.

Department of Chemical Technology has received "National Facility for Bio-analysis" which is sponsored by Department of Science & Technology (DST), Goverment of India.

The project laboratories are fully functional and operational.

7 CONTINUOUS IMPROVEMENT (75)

Total Marks 65.00

7.1 Actions taken based on the results of evaluation of each of the COs, POs & PSOs (30)

Total Marks 25.00

Institute Marks : 25.00

POs Attainment Levels and Actions for Improvement- (2021-22)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	3	2	The Chemical Technology program is more inclined towards the technological aspects of specializations.
Action 1: Efforts to improvise the engineering aspects of the specialized technologies through interactive teaching learning methodology Action 2 : Conduction of regular industrial visits for deep understanding of process utilities and mechanical operations.			
PO 2 : Problem Analysis			
PO 2	3	2	1. The laboratories and the infra-structure of the chemical engineering courses are aged due to which the accuracy and precision of the practical results are deviating. 2. In some of the program core courses (PCC), engineering science course (ESC) and basic science courses (BSC) of the Chemical Technology program, the course attainment was low.
Action 1: The departmental committee of the Chemical Technology approved the laboratory requirements of the chemical engineering. Action 2 : Apart from the remedial classes, the respective course in-charge were switched in the consecutive academic year.			
PO 3 : Design/development of Solutions			
PO 3	3	2	Constant up-gradation in related industry operation and research areas needs to be incorporated in curricula for updated and industry ready manpower.
Action 1 : Continuous curriculum up-gradation with more focus on project based learning. Action 2 : Incorporation of industry stakeholders in regular curriculum update			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	3	2	Continuous monitoring of students is needed while performing off campus curricular assignments like In plant training.
Action 1: Empowerment of Industry stake holders for the continuous assessment of students during off campus curricular assignments. Action 2: Students are exposed to real time industrial problems through internships.			
PO 5 : Modern Tool Usage			
PO 5	3	2	The UG students are well aware about the modern techniques and tools to be utilized during practical performances. Making availability of modern academic and research tools needs to be a continuous process.
Action 1: Use of open source course wares of reputed national and international academic institutes, molecular modelling software and experimental designing soft wares. Action 2 : The students were encouraged to used the search engines, e resources for the regular study purpose.			
PO 6 : The Engineer and Society			
PO 6	3	2	The courses of Chemical Technology need to address the societal health and safety.
Action 1: Special awareness programs and guest lectures about health & safety are arranged. Action 2: Some of the courses like Industrial Safety & Management are given more emphasis during the regular academics.			
PO 7 : Environment and Sustainability			
PO 7	3	2	The courses incorporating environment & sustainability awareness along with the issues like pollution should be the integral part of Chemical Technology
Action 1: The courses like Industrial Pollution Control, Chemical Process Industries, Industrial Safety & Management are incorporated in the syllabus of the B. Tech. Chemical Technology Program. Action 2: Students are motivated to refer green technology and eco-friendly processing for their assignments. Action 3: Annual tree plantation by the faculty members and the students is the regular activity of the Chemical Technology Department.			
PO 8 : Ethics			
PO 8	3	2	Role of ethics and morals in the professional practice be addressed extensively to the Chemical Technology students
Action 1: Through various programs like Induction, Human ethics Values & formal/informal interactions of Mentor - Mentee, awareness is created amongst students Action 2: Career readiness program, corporate lectures and motivational talks are arranged to improve the professional ethical value of students. Action 3: Students are exposed to the specialized collaborative programs of Sant Peeth, Shri Kshetra, Paithan			
PO 9 : Individual and Team Work			
PO 9	3	2	There is a need to incorporate the understanding of techno-economics & human resource management in entrepreneurial setup.
Action 1: Various courses like Economics & Business Management, Development of Skills-I & II, Computer applications in Engineering are introduced. Action 2: Student activities like annual day celebration, Freshers Party, Fairwell functions, Sports Weeks are supported by the department.			
PO 10 : Communication			
PO 10	3	1	In spite of sound technical knowledge, the students of rural background need to improve the presentation and communication skills.
Action 1: Courses like Development of Skills-I & Development of Skills-II are integral part of syllabus of Chemical Technology Action 2: Skill-will Club is created for the development of corporate ethics Action 3: Soft skills training is imparted to students to enhance various aspects of communication/technical talks by group discussions, presentations and new learning outcomes.			
PO 11 : Project Management and Finance			
PO 11	3	2	There is a need to incorporate understanding of Project economics and financial management.
Action 1: The courses like Economics & Business Management, Project Report & Seminar are introduced Action 2: The students are exposed to interact with industry experts and management experts Action 3: The students are inspired to gain informal practical training in the laboratories.			
PO 12 : Life-long Learning			
PO 12	3	1	The students need to understand the benefits of life-long learning in the broadest context of technological change.
Action 1: Awareness is created amongst students for the continuous updates in theoretical & practical knowledge of the courses of Chemical Technology and its application in the real life situations.			

PSOs Attainment Levels and Actions for Improvement- (2021-22)

PSOs	Target Level	Attainment Level	Observations
PSO 1 : Graduates will apply knowledge in chemistry, physics, biology and basic engineering to investigate and solve complex problems in formulation development, processing and research to meet the specified needs with appropriate considerations for the society.			
PSO 1	3	2	There is need to expose the students to current issues and problems of Pharmaceutical, Food and Chemical industries.
Action 1: Frequent industry interaction sessions are arranged for the students			
PSO 2 : Graduates will able to attain ability to control processes by analyzing, applying mathematics, process control, instrumentation and design and integrate knowledge of Chemical Technology techniques in specific industries.			
PSO 2	3	2	There is a need to expose the students for practical integration of knowledge set.
Action 1: Integration based project proposals are designed and offered to the students Action 2 : Correlations between various arms of the Chemical Technology are explained to the students through practical work Action 3: Students are exposed to real time examples of the integration of the work			
PSO 3 : Equip students of Chemical Technology in specific industries and create passion among students for lifelong learning process with ethical & professional behavior to serve the profession by research in advanced fields of study.			
PSO 3	3	2	Need an emphasis on the awareness of lifelong learning process and professional behavior
Action 1: Emphasis is given on continuous exposure of professional activities like workshops, conferences, seminars. Action 2: Development of skills is an integral part of the curriculum which focuses on ethical and professional behavior.			

7.2 Academic Audit and actions taken thereof during the period of Assessment (15) Total Marks 15.00

Institute Marks : 15.00

The Following audit agencies are visiting and conducting audit annually and giving their feedback:

1. AICTE
2. DTE 3. Management Committee
4. Academic review by Head
5. Stock verification/validation Committee

1. **Course file evaluation**

Course files are prepared by faculty members before the semester starts. Course file contents are as per recommendations mentioned in below table. The academic committee consisting of HOD, course coordinator and few of departmental senior faculty members performs audit of course files i.e. verify the contents of the course file, lesson plan, assignments, extra material lecture notes, etc. The comments of the committee are given as feedback to the faculty member to include the recommended material. This audit ensures the quality deliverables to the students.

2. **Lectures/ Lab evaluation**

The academic committee during their random observation of the lectures/lab check delivery of course material as per the lesson plan, teaching aids used, communication skill and classroom management etc. parameters to ensure the teaching methods of benchmarked standards are being used throughout the institute. Feedback is communicated to the faculty member. The academic committee for observation consists of HOD, and few senior faculty members.

3. **Faculty development program (FDP)**

A faculty member has to undergo faculty development program. The FDP to improve the communication skills and to improve the methods of teaching-learning are carried out at the institute level itself by the learning and development team. The technical component in the teaching are improvised with the help of faculty members attending workshops, expert lectures etc. either organized at our institute or at other institute.

4. **Review**

Review of the faculty member is taken at the end of the semester again to compare the levels – what was at the beginning and after the various feedbacks and training received.

Action taken by the faculty members:

Faculty members incorporate changes suggested by the academic committee, if any gaps are found, to ensure quality deliverables.

Faculty members have to match the pace of their deliverables as per the students' requirements as well as they have to schedule the lecture plans in such a way that the syllabus is completed on time. To achieve this they can arrange extra lectures and cope-up the syllabus.

Regular analysis of the results of internal assessment examination of all subjects is done and concerned faculties are guided to take necessary actions. Remedial classes are scheduled in reference to academic progress of the student.

Faculty members attend FDP as required for the overall development of teaching skills in terms of communication, methods and technical.

The academic audit is carried out at the beginning of the semester as soon as the faculty members are ready with their course files.

The academic observation is carried out considering two criteria – feedback from students (requested to the authorities) and randomized observation.

FDP for communication skill development and improving methods of teaching-learning are being carried out regularly by the learning and development department.

Technical FDP, expert lectures, seminars etc. are being arranged by the individual departments at least once in a semester.

S. No.	Contents of Course File
1	Plan of course delivery
2	Question papers
3	Answer scripts

4	Assignments and Reports of Assignments
5	Project Reports
6	Report of Design Projects
7	List of Laboratory Experiments
8	Reports of Laboratory Experiments
9	Include any other relevant information

7.3 Improvement in Placement, Higher Studies and Entrepreneurship (10)

Total Marks 10.00

Institute Marks : 10.00

Item	LYG(2018-19)	LYGm1(2017-18)	LYGm2(2016-17)
Total No of Final Year Students(N)	24.00	22.00	24.00
No of students placed in the companies or goverment sector(X)	12.00	13.00	10.00
No of students admitted to higher studies with valid qualifying scores(GATE or equivalent State or National Level tests, GRE, GMAT etc.) (Y)	4.00	8.00	11.00
No of students turned enterpreneur in engineering/technology (Z)	0.00	0.00	0.00
Placement Index [(X+Y+Z)/N] :	0.67	0.95	0.88

7.4 Improvement in the quality of students admitted to the program (20)

Total Marks 15.00

Institute Marks : 15.00

Item		2022-23	2021-22	2020-21
National Level Entrance Examination CAT/GATE	No of students admitted	03	01	02
	Opening Score/Rank	31.6	35	95.11
	Closing Score/Rank	25.67	35	74.5
State/ University/ Level Entrance Examination/ Others ICT	No of students admitted	0	04	02
	Opening Score/Rank	0	43	23
	Closing Score/Rank	0	30	22
Name of the Entrance Examination for Lateral Entry or lateral entry details	No of students admitted	0	0	0
	Opening Score/Rank	0	0	0
	Closing Score/Rank	0	0	0
Average CBSE/Any other board result of admitted students(Physics, Chemistry&Maths)		79	88	80

8 FIRST YEAR ACADEMICS (50)

Total Marks 41.71

8.1 First Year Student-Faculty Ratio (FYSFR) (5)

Total Marks 4.17

Institute Marks : 4.17

Please provide First year faculty information considering load

Name of the faculty member	PAN No.	Qualification	Date of Receiving Highest Degree	Area of Specialization	Designation	Date of joining	Teaching load (%)			Currently Associated (Yes / No)	Nature Of Association (Regular / Contract)	Date Of leaving(In case Currently Associated is 'No')
							CAY	CAYm1	CAYm2			
Mr. V. V. Lomte	ACTPL7951J	M.E/M.Tech	22/09/2007	Mechanical Engineering	Assistant Professor	02/12/2005	31	31	31	Yes	Regular	
Mr. P. V. Maske	AMWPM5657F	M.Sc	17/09/1996	Chemistry	Assistant Professor	08/08/2018	22	22	22	Yes	Contractual	
Dr. V. L. Chinch	AOUPC2942P	M.Sc. and PhD	05/12/2015	Mathematics	Assistant Professor	06/08/2018	11	11	11	Yes	Contractual	
Dr. Asha Tupe	AHSPT3586H	ME/M. Tech and PhD	30/01/2023	Electronics Engineering	Assistant Professor	06/08/2018	11	11	11	Yes	Contractual	
Dr. Rahul Panc	AYYPP0661Q	ME/M. Tech and PhD	21/12/2021	Structural Engineering	Assistant Professor	06/08/2018	6	6	6	Yes	Contractual	
Dr. S. Rizwan	ALDPS2629H	M.Sc. and PhD	14/03/2011	Food Microbiology	Assistant Professor	06/08/2018	6	6	6	Yes	Contractual	
DR D.B SHINC	AEOPS4361L	M.Sc. and PhD	18/07/1991	ORGANIC CHEMEISTRY	Professor	02/12/2005	0	0	11	No	Regular	28/02/2023
Dr. P. B. Undre	ABHPU7162R	M.Sc. and PhD	27/02/2006	Physics	Assistant Professor	08/08/2019	11	11	11	Yes	Regular	

Year	Number Of Students(approved intake strength) N	Number of Faculty members(considering fractional load) F	FYSFR (N/F)	*Assessment=(5*20)/FYSFR(Limited to Max.5)
2020-21(CAYm2)	24	1	24	4
2021-22(CAYm1)	24	1	24	4
2022-23(CAY)	24	1	24	4
Average	24	1	24	4

AverageFYSFR: 0.00

Assessment [(5 * 15) / AverageFYSFR]: 4.00

8.2 Qualification of Faculty Teaching First Year Common Courses (5) Total Marks 0.00

Institute Marks : 0.00

Year	x (Number Of Regular Faculty with Ph.D)	y (Number Of Regular Faculty with Post graduate Qualification)	RF (Number Of Faculty Members required as per SFR of 20:1)	Assessment Of Faculty Qualification [(5x + 3y) / RF]
2020-21	0	0	1	0.00
2021-22	0	0	1	0.00
2022-23	0	0	1	0.00

Average Assessment: 0.00

8.3 First Year Academic Performance (10) Total Marks 7.54

Institute Marks : 7.54

Academic Performance	CAYm1(2021-22)	CAYm2(2020-21)	CAYm3 (2019-20)
Mean of CGPA or mean percentage of all successful students(X)	7.43	8.87	6.33
Total Number of successful students(Y)	12.00	22.00	23.00
Total Number of students appeared in the examination(Z)	12.00	22.00	23.00
API [X*(Y/Z)]	7.43	8.87	6.33

Average API[(AP1+AP2+AP3)/3] : 7.54

Assessment = Average API : 7.54

8.4 Attainment of Course Outcomes of first year courses (10) Total Marks 10.00

8.4.1 Describe the assessment processes used to gather the data upon which the evaluation of Course Outcomes of first year is done (5) Institute Marks : 5.00

Continues Internal Examination (CIE): CIE assessment carries 20% marks of any course.

The mechanism strategized to ensure rigour of CIE for theory, laboratory, and projects is given below. Theory Course: Each theory subject is assessed for 80 marks with equal weightage for CIE and SEE (80% for CIE and 20% for SEE).

CIE comprises of 2 tests each of 10/20 marks of one hour duration, totalling to 20/40 marks and is later scaled down to 10/20 marks(Average of the two tests).

The two CIE's are conducted centrally by the college on the dates mentioned in the academic calendar.

The format of CIE may however be modified after obtaining feedback from the faculty and students.

The CIE format is predetermined by the Ad hoc board and Departmental committee .It is informed to all teachers through meeting the format is distributed online .The ESE exam format is also predefined as per OBE and NBA norms.The teachers are specifically instructed to adhere to Blooms taxanomy and check Co and PO attainment.

The modified format if any will be approved by the AC and BOG and further informed to the students at the beginning of the semester. Semester End Examination (SEE

SEE assessment carries 40/80 marks of any course. The mechanism strategized to ensure rigour of SEE for theory, laboratory, and projects is given below. Theory Course: SEE comprises of 1 test 2/3 hour for 40/80 marks. The format of SEE is as per the approved guidelines of examination unit of the Chemical Technology. The percentage distribution of marks for CIE and SEE is given in

Table-B.8.4.1(a)

Continuous Internal Evaluation – I 20%

Continuous Internal Evaluation – II 20%

Assignment/Quizzes/Presentation/Case studies 5% (Teachers Assessment for Practical based courses)

Semester End Examination 80%

8.4.2 Record the attainment of Course Outcomes of all first year courses (5) Institute Marks : 5.00

CO Attainment for Academic Year: 2019-20

Code	Course	CO1	CO2	CO3	CO4	CO5
BSH-101	Mathematics -I	1.69	1.99	2.04	1.42	
BSH-102	Chemistry-I	1.65	1.53	1.47	1.58	
BED-101	Engineering Graphics	2.98	2.82	2.74	2.85	2.90
BED-102	Engineering Application of Computer	2.84	2.16	2.39	2.20	
BED-103	Basic Civil Engineering	2.47	2.50	2.20	2.08	
SCD-101	Development of Skills-I	2.45	2.67	1.9	1.8	
BSH-104	Mathematics-II	1.93	1.93	2.15	2.02	
BSH-105	Chemistry-II	2.10	1.93	2.15	2.10	
BSH-106	Biology	2.00	1.93	2.10	2.02	
BED-106	Basic Mechanical Engineering	2.13	2.10	1.90	2.13	
BSH-107	Physics	2.00	2.00	1.93	2.10	

8.5 Attainment of Program Outcomes from first year courses (20) Total Marks 20.00

8.5.1 Indicate results of evaluation of each relevant PO and/or PSO if applicable (10)

Institute Marks : 10.00

POs Attainment:

Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BSH-1	2	1	2	PO4	1	2	PO7	PO8	1	PO10	PO11	PO12
BSH-1	1	1	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-1	1.75	1.5	1.6	1.5	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-1	1.4	1.4	1.4	0.7	PO5	1.4	PO7	PO8	PO9	PO10	PO11	PO12
BED-1	1.47	PO2	PO3	PO4	PO5	PO6	1.47	1.8	PO9	PO10	PO11	PO12
BSH1C	1	1.2	1	PO4	1	2	PO7	PO8	PO9	PO10	PO11	PO12
BSH-1	2	2	PO3	PO4	PO5	PO6	PO7	2	PO9	PO10	PO11	PO12
BSH-1	2.33	2	PO3	PO4	2	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BED-1	2	2	2	2	2	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BSH-1	1.93	PO2	1.93	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
DOS-I/	PO1	PO2	PO3	PO4	PO5	1	PO7	2	2	2	1	2

PO Attainment Level

PSOs Attainment:

Course	PSO1	PSO2	PSO3
BSH -1	2	1.67	3
BSH-1	1.67	1	0
BED-1	1	2	0
BED-1	2	2	0
BED-1	1	0	0
BSH-1	2	1	3
BSH-1	2	2	0
BSH-1	2.5	0	0
BED-1	2	2	0
BSH-1	3	0	0
DOS-I/	0	0	2

PSO Attainment Level

Course	PO1	PO2	PO3
Direct Attainment	1.92	1.67	2.67
PSO Attainment	1.92	1.67	2.67

8.5.2 Actions taken based on the results of evaluation of relevant POs and PSOs (10)

Institute Marks : 10.00

POs Attainment Levels and Actions for Improvement- (2021-22)

POs	Target Level	Attainment Level	Observations
PO 1 : Engineering Knowledge			
PO 1	2	1.69	1. Students need to understand the co-relation amongst various courses of Chemical Technology. 2. Need more emphasis on hands on training for understanding the concepts
Action 1: Students are advised to interact with teachers of various courses and to understand a birds eye view of Chemical Technology. Action 2: Students are encouraged to get engaged in ongoing research work of the laboratories.			
PO 2 : Problem Analysis			
PO 2	2	1.51	Students needs industrial feed backs for identifying the mechanism behind analyzing problems.
Action 1: Organized expert lectures of industry experts belonging to R & D as well as production and QA-QC for envisaging the problems and the mechanisms to rectify the same.			
PO 3 : Design/development of Solutions			
PO 3	2	1.66	Need to demonstrate real life problems and their solutions of the chemical technology industries.
Action 1: Through industry visits and online virtual platforms, students were demonstrated the solutions for the problems related to Chemical Technology. Action 2: Students were assigned small, in house projects for identifying the practical issues and to develop a solution for the same.			
PO 4 : Conduct Investigations of Complex Problems			
PO 4	2	1.40	Students needs exposure of handling complex problems and conducting thorough investigation is needed.
Action 1: Students are encouraged to join the laboratory for assisting research fellows and research work in the respective research areas. Action 2: Students are allotted mini projects for developing research insight			
PO 5 : Modern Tool Usage			
PO 5	2	1.50	Students need hands on training of the modern tools like molecular modeling software, KYAN and graphics tools.
Action 1: Students were imparted small scale training set of the modern tools before its actual field use. Action 2: Students were encouraged to opt for the informal work related to modern tools. Action 3: Students were made aware about online course platforms like SWAYAM and MOOCs.			
PO 6 : The Engineer and Society			
PO 6	2	1.60	Awareness about society and its connect with the profession of Chemical Technology needs to be percolated amongst first year students.
Action 1: Three weeks induction program was outlined for the contribution of the engineers to the society. Action 2: It is proposed to introduce the courses like Constitution of India at undergraduate level.			
PO 7 : Environment and Sustainability			
PO 7	2	1.47	More emphasis need to be given on the e-waste management and its disposal.
Action 1: The e-waste disposal and its management is demonstrated through audio-visuals. Action 2: Students were encouraged to take active participation in annual tree plantation program. Action 3: Students were encouraged for regular use of solar distillation plant.			
PO 8 : Ethics			
PO 8	2	1.93	Students were found to be aware about professional ethics.
Action 1: Efforts are being made continuously for improving the ethical professional practices.			
PO 9 : Individual and Team Work			
PO 9	2	1.50	Students were found to perform good at individual level but needs to improve at team level.
Action 1: Students were divided into small groups and small projects were assigned to them. Action 2: Students were asked to submit the output of assigned projects individually as well as in groups.			
PO 10 : Communication			
PO 10	2	1	Students especially from rural background needs guidance for effective communication.
Action 1: Courses like Development of Skills -I and II are compulsory part of the curriculum. Action 2: Students are encouraged to communicate in an English.			
PO 11 : Project Management and Finance			
PO 11	2	1	In spite of sound technical knowledge, the understanding of project management and the finance of the students seems to be less.
Action 1: Methodologies are being designed to offer mini projects at first year level. Action 2: Project based learning is offered to the students. Action 3: Students were encouraged to understand the techno economics of readily available in house projects. Action 4: Students were exposed to the expert guest lectures of faculties belonging to finance. Action 5: The courses like economics and business management are integral part of the curriculum of Chemical Technology			
PO 12 : Life-long Learning			
PO 12	2	0.75	Students need to have an ability to engage in independent and life long learning in the broadest context of technological changes.
Action 1: Efforts are being made continuously for improving attainment level by imparting the Universal Human Values courses in first year syllabi. Action 2: Students were exposed to the various activities of center for life long learning of the University.			

PSOs Attainment Levels and Actions for Improvement- (2021-22)

PSOs	Target Level	Attainment Level	Observations
PSO 1 : Graduates will apply knowledge in chemistry, physics, biology and basic engineering to investigate and solve complex problems in formulation development, processing and research to meet the specified needs with appropriate considerations for the society.			
PSO 1	3	1.92	Students need to understand basics of Chemistry & Physics thoroughly.
Action 1: Concerned teachers were instructed to engage additional classes of Chemistry & Physics Action 2: Students were encouraged to learn through videos and online learning material. Action 3: Some of the chemistry concepts like bonding and isomerism were explained using table top models.			
PSO 2 : Graduates will able to attain ability to control processes by analyzing, applying mathematics, process control, instrumentation and design and integrate knowledge of Chemical Technology techniques in specific industries.			
PSO 2	3	1.67	Magnitude of knowledge integration of the students should be high
Action 1: Students were exposed to understand the relation between basic courses and its applications Action 2: Knowledge integration and its application in problem solving was explained to students using readily available online and offline examples.			
PSO 3 : Equip students of Chemical Technology in specific industries and create passion among students for lifelong learning process with ethical & professional behavior to serve the profession by research in advanced fields of study.			
PSO 3	3	2.67	Students need to understand the role of skill-set, value of research and the importance of updates in setting up short- and long term goals in the career,
Action 1: Through Mentor - Mentee interactions and individual guidance, students were counselled for their career paths. Action 2: Guest lectures of industry experts were arranged for the students. Action 3: Lectures of Alumini were arranged to share their experiences and the success stories.			

9 STUDENT SUPPORT SYSTEMS (50)

Total Marks 50.00

9.1 Mentoring system to help at individual level (5)

Total Marks 5.00

Institute Marks : 5.00

In each program every faculty is assigned few students in an academic year. The students interact with the faculty advisor at least once in a month. This also facilitates the pre-registration guidance and enables students to take right courses and appropriate electives. The faculty encourages the students to discuss their ideas and problems in person. The faculty keeps track of the attendance and progress of the students assigned to him. All the details of the students are maintained by the faculty. The same information is reported to the HoD along with necessary measures taken. They also provide advice on career matters. This has created a healthy and congenial atmosphere on the campus.

An effective Student mentoring system (SMS) has already been implemented in our department

- All the students of the department comes under this system from the date of joining.
- A complete track of the student activities like Academic, Curricular, Co curricular Extra Curricular achievements, Social activities and the details of Parent Meetings are registered in the system.
- A Mentoring Register has been distributed to all the staffs of the department. Each staff is allocated with some students under the mentoring system.
- Faculties conducts the meetings with the students periodically and their Academic progress and all his activities are discussed and noted in the register
- Any discrepancies in the student behavior like Attendance, etc is questioned and counselled with care
  - Staff submit thes register to the Mentoring /Counselling Committee with members like HOD, and Head of the institution
  - The committees scrutinizes case by case and suggest corrective measures
  - If necessary the committee will have discussions with the Parents and Medical counselor

9.2 Feedback analysis and reward /corrective measures taken, if any (10)

Total Marks 10.00

Institute Marks : 10.00

The teaching-learning system followed by any educational institution needs continuous refinement. To capacitate this process of continuous refinement, the institution has adopted a feedback system that takes suggestions from students of each program. This eventually helps to fine-tune the teaching-learning process and the curriculum. The institution follows a well-defined and formal feedback system. It has been identified as one of the important process in our Quality Management System. The feedback is taken online and offline mode.

The online mode feedback is taken through the link on the University website after each semester through the university website .The feedback form is all inclusive about respective course,course teacher,course facility,lab facility,hostel,other amenities..etc

9.3 Feedback on facilities (5)

Total Marks 5.00

Institute Marks : 5.00

The Department of Chemical Technology is well equipped with the diffrent facilities related to infrastructure, instrumentation and academic facilities. Department regularly collects the feedback from its stakeholders through online and offline mode. There is a predefined mechanism of action taken. Fullfillment of action taken are expressed in the form of summer laboratory training, industrial visits.

9.4 Self-Learning (5)

Total Marks 5.00

Institute Marks : 5.00

To facilitate self-learning the following activities are incorporated in curriculum:

i. The final year students have to give seminars on Inplant trainings and the Projects undertaken
ii. Each course has 5% weightage for assignments/Quizes/seminars.
iii. Mini projects have to be carried out at the third year level

The institution provides the following facilities for learning beyond syllabus:

i. Campus wide Wi-fi facility is setup. This facilitates learning beyond department hours.
ii. The reading room in the central libray of the University is kept open up to 10 pm.
iii. A digital library is setup to facilitate online access of the information.
iv. Course material and laboratory manuals are provided.
v. Invited talks, Seminars, workshops on latest technologies/tools are organized

9.5 Career Guidance, Training, Placement (10)

Total Marks 10.00

Institute Marks : 10.00

Training & Placement Cell (TPC) is to place the student in competitively good companies by identifying their knowledge skills, attitude matrices of every individual student, creating job profiles for them, identifying areas of training & various methods as per the training requirement, formulate sequence of activities to meet the training schedules for appropriate placement. TPC always involves in the following activities:

- Assist students to develop/clarify their academic and career interests, and their short and long term goals through individual counselling and group sessions
- Provide resource and activities to facilitate the career planning process
- Organizing pre-placement training for students (Soft-skills, Aptitude, Technical and Mock Interviews)
- Empower students with life-long career decision-making skills
- Up gradation of the students skill sets commensurate with the expectations of the industry

9.6 Entrepreneurship Cell Total Marks 5.00

Institute Marks : 5.00

Dr. Babasaheb Ambedkar Marathwada University has started the Bajaj Incubation center through the Atal Innovation Mission Scheme. The Bajaj Incubation Center caters to the entreprenuers and start up projects. The Department of Chemical Technology helps the Bajaj Incubation Center with Technical Consultancy for the various projects and the start ups and the incubators. The Department is actively involved in two start up projects with technical consultancy from the faculty,

1. Development of polymers.

2. Consultancy for patent writing and filing.

9.7 Co-curricular and Extra-curricular Activities Total Marks 10.00

Institute Marks : 10.00

The students are actively involved in

1.Earn and Learn scheme

2. Vishakha Samiti(University Level Grievenace cell)

3. Yuvak Mahotsav(Youth festival)

4.IPR committee

5.Green World competition

6.National Science Day

7.University Open Day

8.Avishkar

9.Sports week

10 Farewell and cultural program

The students are actively involved in research paper publications,National and International conference paper presentation.

10 GOVERNANCE, INSTITUTIONAL SUPPORT AND FINANCIAL RESOURCES (120) Total Marks 120.00

10.1 Organization, Governance and Transparency (55) Total Marks 55.00

10.1.1 State the Vision and Mission of the Institute (5)

Institute Marks : 5.00

Vision

To develop the quality learning centre in Chemical Technology for sustainable regional development.

Mission Statement:

M1: To cater quality academic and research programs in Chemical Technology.

M2:To develop the products,processes and technology in the field of Chemical Technology.

M3:- To provide technological leadership for industrial and societal economic growth and benefit of the country.

10.1.2 Availability of the Institutional Strategic Plan and its Effective Implementation and Monitoring (25)

Institute Marks : 25.00

The University Department of Chemical Technology has a perspective Strategic Plan and deployment document available taking into consideration the set Objectives and Broad Based Goals aligned with the Vision and Mission statement of the University:

The Strategic plan of the university is multi-layered as well as multi-pronged that focuses on Expansion, Inclusion and Excellence (EIE). It subsumes short term, intermediate and long term policies to cater to the ever growing number of Higher Education aspirants resulting in the enhancement of Gross Enrolment Ratio (GER) that will have positive impact on Human Development Index (HDI). Also, it aims at minimizing the menace of migration. Major highlights of Strategic Plan and deployment document are listed below-

A. Curricular Aspects

- Assessment of acceptability and time relevance of existing academic programme and initiation of new courses / programme
- Identification of potential industrial partners for curriculum revision, students internship/in-plant training and for initiation of joint academic program
- Regular reformation in the curriculum to enhance employability and entrepreneur acumen of students
- Introduction of generic and program-specific value added courses
- Development of structured mechanism for feedback collection, analysis and action taken

B. Teaching-Learning and Evaluation

- Assessment of enrolment statistics, identification of gap areas and implementation of new strategies
- Initiation and reformation of pilot initiatives to cater student diversity
- Identification of faculty diversity and reformation in the initiatives in teaching-learning modality
- Development of structured mechanism for attainment of performance outcome of students and evaluative reforms
- Continuous reformation in teaching –learning process and enrichment of teacher profile/quality

C. Research, Innovations and Extension

- Creation of thematic research areas based on University expertise to address societal / Industrial issues
- Promotion and support to IPR related activities
- Enrichment of Departmental Infrastructure and Research Support
- Mechanized consultancy activity
- Continuous Outreach activities and inclusive research
- Establishment of Centres of Excellence (COEs)

D. Infrastructure and Learning Resources

- Augmentation of physical facilities in the campus
- Enrichment of KRC resources
- Financial Provision for infrastructure
- Creation of state of the art technical facilities

E. Student Support and Progression

- Development of all-inclusive policy for student friendly, student owned campus
- Development of student centric academics
- Establishment of a sound mechanism to ensure a positive destination for every student (Graduate Outcome)
- Engagement of alumni in developmental activity
- Exercising financial contribution from alumni for academic augmentation

F. Governance, Leadership and Management

- Creation of pathway towards good governance
- Initiation of quality measures and promotion of quality culture
- Review of effectiveness of strategic plan and subsequent modifications
- Empowerment of teaching and administrative staff

G. Institutional Values and Best Practices

- Practicing initiatives of gender and social equity, social awareness for empowerment of women and socially disadvantaged groups
- Practicing environmental consciousness and sustainability initiatives for ensuring clean and pollution free environment
- Practicing human values and professional ethics initiatives for creation of universal values and integrity among all stake holders of the University

Link :- http://www.bamu.ac.in/Portals/0/institutional_dev_plan_oct18.pdf (http://www.bamu.ac.in/Portals/0/institutional_dev_plan_oct18.pdf%20)

10.1.3 Governing body, administrative setup, functions of various bodies, service rules, procedures, recruitment and promotional policies (10)

Institute Marks : 10.00

The University has a clearly defined organizational hierarchy and structure to support decision making processes. Maharashtra Public University Act along with Statutes and Ordinances of the University has well defined provision for various Statutory Authorities, Committees / Councils to provide policy framework and direction for the functioning of the University and for fulfilment of its objectives. As per Maharashtra Public University Act 2016, University has seventeen statutory Authorities (section 26) and ten Committees / Councils (section 92), some of them are listed below-

i. Senate
ii. Management Council
iii. Academic Council
iv. Faculty
v. Board of Deans
vi. Board of Studies
vii. Board of University Departments and Interdisciplinary Studies
viii. Board of Post-Graduate Education in Colleges
ix. Board for Lifelong Learning and Extension
x. Board of Lifelong Learning and Extension
xi. Board of Examinations and Evaluation
xii. Board of Information Technology
xiii. Board of Innovation, Incubation and linkages

Functions of some of the authorities are as below-

The Senate gives suggestions to the university authorities on improvements that can be made in all areas and domains that are an integral part of the university namely, academics, research and development, administration and governance.

The Management Council reviews and deliberates on short and long term reforms in academic, research and development activities, finances, management and governance that are taking place at the national and global level with a view to allow them to be adapted at and by appropriate sections of the University.

The Academic Council is the principal academic authority of the university and is responsible for regulating and maintaining the standards of teaching, research and evaluation in the university

In addition to the above, each Academic Department has a number of students and faculty committees for decentralized management of activities for better functioning and effective learning of the students.

The roles and responsibilities of various bodies are well defined in order to ensure role clarity and accountability.

The administrative setup of the university is governed by Maharashtra Public University Act and the same is as per following-

- Vice-Chancellor;
- Pro-Vice-Chancellor;
- Registrar (Assisted by several Deputy and Assistant Registrar)
- Deans of Faculties;
- Director of Board of Examinations and Evaluation;
- Finance and Accounts Officer;
- Director of Sub-campus of the University;
- Director of Innovation, Incubation and Linkages;
- Director Knowledge Resource Center;
- Director of Lifelong Learning and Extension;

Service Rules, Academic Freedom Policy, Promotion Policies, Employee Satisfaction, Welfare Schemes and Grievance Redressal Mechanism are in place. The University has well-structured system for professional development of the faculty and staff. Achievements of faculty and staff are recognized with financial and non-financial incentives.

The Grievances of faculty and staff are redressed timely to keep their motivation high all time to ensure that they perform efficiently with satisfaction.

The University also has dedicated 'Women's Grievance Cell' as per the orders of the Supreme Court (VishakhaJudgement), 'Sexual Harassment at Workplace Act, 2013' rules with the aim of promoting gender equality and women empowerment among students and staff members

10.1.4 Decentralization in working and grievance redressal mechanism (5)

Institute Marks : 5.00

The University practices decentralized and participative management approach in all its activities, initiatives and decision making by involving Deans, Heads of the Departments and faculty members at all levels.

University follows healthy practices of constituting several committees, sub-committees and other non-statutory bodies to discuss the issues and their complexities in depth and recommend decisions to the relevant authorities. This enables de facto decentralization, involving wider participation of the faculty and others in decision making. The University has the practice of delegation of powers from authorities to their sub-committees and from higher officers to next level officers.

The administrative and academic responsibilities are decentralized to provide effective educational leadership for effective implementation & monitoring of various policies, regulations & guidelines at various levels.

The Grievances of faculty and staff are redressed timely to keep their motivation high all time to ensure that they perform efficiently with satisfaction.

The University also has dedicated 'Women's Grievance Cell' as per the orders of the Supreme Court (VishakhaJudgement), 'Sexual Harassment at Workplace Act, 2013' rules with the aim of promoting gender equality and women empowerment among students and staff members.

10.1.5 Delegation of financial powers (5)

Institute Marks : 5.00

Sr	Subject	Power to whom delegated	Powers delegated
1)	Administrative sanction for Purchases/ Expenditure - Recurring - (i) Chemicals, Glass wares, stationery, advertisement charges, contingency items, petty supplies, store material, Electronic Components and other Consumables, Printing Material, Exam Bills, University Fellowship scholarship & any other item of recurring nature	Vice-Chancellor	Full powers
		• Registrar	Up to Rs.75,000/- (inclusive)
		• Controller of Examinations	
		• Director, Board of College & University Development	
		• Finance & Accounts Officer	
		Dy. Registrar (concerned)/Chief Accountant	Up to Rs.25,000/- (inclusive)
		HOD/Librarian /Coordinator/ Director of Students Welfare/ Director-Computer Centre/ Chief Rector/ Rector, Vidhyarthi Bhavan	Up to Rs.25,000/- (inclusive)
		Asstt. Registrar (concerned)/Medical Officer	Upto Rs.5,000/- (inclusive)
		Asstt. Registrar (Stores and Accounts)	Upto Rs.5,000/- (inclusive)
	(ii) Sanction of expenditure on postage, courier and franking charges	Registrar Dy. Registrar (Establishment)	Full Powers Upto Rs.50,000/- (inclusive)
	(iii) Fixed Charges	Vice-Chancellor	Full powers
	Rents, Rates, Taxes,		
	Electricity bills, Telephone Bills, Water		
	Charges, Municipal Charges & Other		
	fixed Charges.		
		• Registrar • COE • Director-BCUD • FAO	Up to Rs.1,00,000/- (inclusive)
		Dy. Registrar (concerned)	Up to Rs.20,000/-
			(inclusive)
	(iv) Payment of legal charges	Vice-Chancellor	Full powers
	(v) Hospitality and entertainment charges in connection with visits of distinguished visitors	Vice-Chancellor	Full powers within the budget provisions
		Registrar, Director BCUD, COE, FAO	Up to Rs.5,000/- per annum

	(vi) Fuel and lubricants. (Certificate regarding	Registrar	Full powers

	entries taken in the logbook must be recorded on the bill before it is sanctioned.)	Dy. Registrar (Concerned)	Upto Rs.20,000/- (inclusive)
	(vii) Purchase of current news papers as per norms subject to administrative approval (excluding periodicals and journals)	University Librarian	Full powers
	(viii) Repairs to equipment, machinery including replacement of spare-parts etc.	Vice-Chancellor	Full powers
		• Registrar	Upto Rs.50,000/- (inclusive)
		• COE	
		• Director BCUD	
		• FAO	
		Dy. Registrar/Chief Accountant /HOD/ Librarian/ Coordinator/ DSW/ Director-Computer Centre/ Chief Rector/ Rector,Vidhyarthi Bhavan	Upto Rs.10,000/- (inclusive)
		Asstt. Registrar (concerned)/Medical Officer	Upto Rs.2,000/- (inclusive)
	(ix) Repairs to vehicles	Vice-Chancellor	Full powers (Per vehicle per year)
		Registrar	Upto Rs.25,000/- (Per vehicle per year)
		Dy. Registrar (Concerned)	Upto Rs.10,000/- (Per vehicle per year)
	(x) Repairs to furniture, Fixture & Building (Civil & Electrical Work)	Vice-Chancellor	Full powers
		Registrar	Upto Rs.20,000/- (inclusive)
		Dy.Registrar (Civil)	Upto Rs.10,000/- (inclusive)
		HOD	Upto Rs.5,000/- per year (inclusive)
	(xi) Hiring of vehicles, equipments, furniture and other services	Vice-Chancellor	Full powers
		Registrar, Director-BCUD, COE, FAO	Upto Rs.20,000/- (inclusive) per year
	(xii) Powers to give orders for printing and binding (in case of orders other than University Press, subject to 'No Objection Certificate' from University Press)	Registrar, COE, Director-BCUD and FAO	Full powers
		Dy. Registrar (concerned) /Chief Accountant	Upto Rs.20,000/- (inclusive)
	(xiii) Travelling Allowance claims a) in case of the bills of the - Registrar, COE, Director-BCUD, FAO & University Teachers	Vice-Chancellor	Full Powers

	b) in case of the bills of the - Class I and Other Officers & Staff working under them	• Registrar • Controller of Exams. • Director –BCUD • FAO	Full Powers (in case of the bills of the staff working under them.)
	c) in case of other teachers and persons attending exam. work/meetings and other university work (subject to the existing T.A. Rules)	• Registrar/ • Director-BCUD • COE • FAO	Above Rs.5,000/-
		Dy. Registrar (concerned) /Chief Accountant	Upto Rs.5,000/- (inclusive)
		Asstt. Registrar (concerned)	Upto Rs.2,000/- (inclusive)
	(xiv) Sanctioning advances for - a) T. A. Advances	Vice-Chancellor	Full powers in case of the claims of Registrar COE, Director-BCUD, FAO
		• Registrar, • COE, • Director-BCUD, • FAO	Full powers in case of the claims of the staff working under them.
		Dy. Registrar (Concerned) /Chief Accountant	Up to Rs.5,000/- (inclusive)
		Asstt. Registrar (concerned)	Upto Rs.2,000/- (inclusive)
	b) Pay Advance, Festival Advances, Cycle Advances, Computer Advance, Permanent Advance, all other admissible advances to employees.	Vice-Chancellor	Full Powers (subject to prescribed norms)
	c) Purchase Advances and Other Advances for University work	Vice-Chancellor	Full powers
		• Registrar	Upto Rs.1,00,000/- (inclusive)
		• Controller of Exams	
		• Director, BCUD	
		• Finance & Accounts Officer	
		Dy.Registrar (concerned) /Chief Accountant	Upto Rs.20,000/- (inclusive)
	(xv) Sanction of overtime charges (per annum per employee)	Vice-Chancellor	Above 300 hours
		• Registrar	Upto 300 hours i. Subject to Budget provision, ii. Sanction will be given by the section where the employee is posted.
		• Controller of Exams	
		• Director, BCUD	
		• Finance & Accounts Officer	

	(xvi) Write-off and disposal of obsolete or unserviceable stores or shortages/theft material, subject to recommendations of write -off committee	Management Council	Full Powers
2)	NON-RECURRING		
	(i) Purchase of equipment, instruments, Machinery, Vehicles, Furniture, Books & Journals any other item of Non- recurring nature	Vice-Chancellor	Full powers
		• Registrar	Upto Rs.50,000/- (inclusive)
		• COE	
		• Director - BCUD	

		• FAO	
		Dy. Registrar (concerned) /Chief Accountant	Upto Rs.10,000/- (inclusive)
		HOD/Librarian/Co-ordinator/ DSW/ Director-Computer Centre/Chief Rector/ Rector Vidhyarthi Bhavan	Upto Rs.10,000/- (inclusive)
		Asstt. Registrar (concerned)/Medical Officer	Upto Rs,2,000/- (inclusive)
	(ii) Write-off and disposal of surplus or unserviceable material, articles and equipment of non-recurring nature (subject to recommendations of write -off committee)	Management Council	Full powers
	(iii) (a) Sanction to major works	Building & Works Committee	Full powers
	(b) Sanction of expenditure on maintenance works of the Works Department (All such sanctions are to be reported to the Technical Committee.)	Vice-Chancellor	Full powers
		Registrar	Upto Rs.50,000/- (inclusive)
		Dy. Registrar (Civil/Elect.)	Upto Rs.20,000/- (inclusive)
	(c) Sanction to minor works. (All such sanctions are to be reported to the Technical Committee.)	Registrar	Upto Rs.30,000/- (inclusive)
		Dy.Registrar (Civil/Elect.)	a) Upto Rs.10,000/- (inclusive) at D.S.Rates without quotations. b) Upto Rs. 20,000/- by calling quotations.
	(d) Sanction for expenditure after Technical scrutiny to R.A.Bills/ Final Bills. (All such items are to be scrutinised and sanctioned by the Technical Committee.)	Vice-Chancellor	Full powers
		Registrar	Upto Rs. 1,00,000/-
		Deputy Registrar (Civil/Elect.)	Upto Rs. 50,000/-
	(e) To extend date of completion of works	Building & Works Committee	Full powers

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3)	Sanctioning write-off of loss of Receipt Books/Cheque Books and other money value books/ measurement books subject to approval of Finance Committee	Management Council	Full Powers
4)	Sale of grass, fruits, garden produce, wastepaper, old news papers etc. and dismantle material subject to approval of Sales Committee.	Registrar	Full powers

	Refund of revenue receipts and deposits i) Refund of Student Fees & Deposits other than Library Deposit	Dy. Registrar (Concerned) /Chief Accountant Asstt. Registrar (Concerned)	Above Rs.5,000/- Upto Rs.5,000/- (inclusive)
5)	ii) All other Deposits (security deposits and earnest money deposits shall be refunded after the recommendation of the Engineering/Stores and concerned section.)	Finance & Accounts Officer Dy. Registrar (Finance & Accounts)	Above Rs.20,000/- Upto Rs.20,000/- (inclusive)
		Asstt. Registrar (Finance & Accounts)	Upto Rs.5,000/- (inclusive)
	iii) Refund of Library Deposit	Librarian	Full Powers
6)	i) Calling of Quotations/ Tenders (* Subject to obtaining prior administrative approval)	Dy. Registrar (concerned) /Chief Accountant H.O.D. (Concerned Department) / Librarian/ Coordinator/ Director- Computer Centre/ DSW/ Chief Rector/Rector Vidhyarthi Bhavan etc.	Full Powers* Full Powers*
	ii) Opening of Tenders	a) Technical and financial offer to be opened before F.A.O & two members of Purchase Committee and comparative statement shall be placed before Purchase Committee for acceptance/ approval	Full Powers
	iii) Opening of tenders for works departments	Tender Opening Committee	Full powers
	iv) (a) Opening of Quotations Pertaining to Post Graduate Department	To be opened by Departmental Sub-Committee approved by V.C.	Upto Rs.1,00,000/- (inclusive)
	(b) Opening of Quotations pertaining to other sections	F.A.O. and one member of Purchase Committee	Above Rs.25,000/-
		Jointly by Dy. Registrar (Stores) and Dy. Registrar of concerned department	Upto Rs.25,000/-
	(c) Opening of Quotations pertaining to works departments	Jointly by Dy. Registrar (Accounts) and Dy. Registrar (Civil)	Upto Rs.25,000/-

Upto

		F.A.O. and Dy. Registrar (Civil)	Above Rs.25,000/- up to Rs. 50,000/-
	v) Acceptance of Tenders :	Purchase Committee	Full Powers *

	vi. Acceptance of Quotations a. When three or more quotations are received & Selected on the basis of lowest cost	Officers competent to give administrative sanction	Full Powers *
	b) (i) When less than three quotations are received	Vice- Chancellor	Full powers
	(ii) Quotation recommended other than lowest	Registrar, COE, Director-BCUD, FAO	Upto Rs.10,000/- (Inclusive)
	vii) Purchases directly from the selected manufacturer /Sole dealer, without calling quotations in case of emergency	Vice-Chancellor	Upto Rs.1,00,000/- (inclusive)
	viii) Purchases of items directly from the specific manufacturer	Vice-Chancellor	Full Powers
	ix) placing supply order after obtaining administrative Sanction and after acceptance of tender/quotations by competent authority	Concerned H.O.D./Librarian/ Coordinator/ Director-Computer Centre/Chief Rector/ Rector Vidhyarthi Bhavan	Full Powers
		Dy. Registrar/Chief Accountant /Asstt. Registrar (Concerned)	Full Powers
7)	Re-appropriation of Budgetary Provision (effect to be shown in the revised Budget)	Vice-Chancellor	Full Powers (Subject to final approval of Senate to the revised estimate of that year)
8)	Power to create new Budget head	Vice-Chancellor	Full powers (effect to be shown in the revised Budget and final approval of Senate should be obtained)

Note :

1. All the financial powers delegated above are subject to the provisions of the Maharashtra Universities Act, 1994 (as amended from time to time) and the Statutes and Ordinances framed there under and the rules, norms and procedure laid down by the Management Council from time to time and other prevailing rules.

2. Expenditure involving new service or recurring liability should not be incurred without obtaining the formal approval of the concerned authority.

3. Purchase / work orders should not be split-up to avoid the necessity of obtaining sanction of Higher authority required with reference to the total amount of orders.

10.1.6 Transparency and availability of correct/unambiguous information in public domain (5) Institute Marks : 5.00

Information on policies, rules, processes and dissemination of this information to stakeholders is made available on the web site

www.bamu.ac.in

10.2 Budget Allocation, Utilization, and Public Accounting at Institute level (15) Total Marks 15.00

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Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY : (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 - CFY 2022-2023

Total Income 2343842				Actual expenditure(till…): 25438998			Total No. Of Students 78
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify	Expenditure per student
2143842	0	200000	0	25350038	88960	0	326141

Table 2 - CFYm1 2021-2022

Total Income 3018389				Actual expenditure(till…): 23407174			Total No. Of Students 84
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify	Expenditure per student
3018389	0	0	0	23407174	0	0	278656.83

Table 3 - CFYm2 2020-2021

Total Income 3429932				Actual expenditure(till…): 19186430			Total No. Of Students 98
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify	Expenditure per student
3429932	0	0	0	18395000	791430	0	195779.90

Table 4 - CFYm3 2019-2020

Total Income 41570551				Actual expenditure(till…): 19553787			Total No. Of Students 101
Fee	Govt.	Grants	Other sources(specify)	Recurring including salaries	Non Recurring	Special Projects/Anyother, specify	Expenditure per student
2772551	0	38798000	0	19304784	249003	0	193601.85

Items	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till	Budgeted in 2020-2021	Actual Expenses in 2020-2021 till	Budgeted in 2019-2020	Actual Expenses in 2019-2020 till
Infrastructure Built-Up	0	0	0	0	0	0	0	0
Library	400000	335313	260000	122673	200000	0	200000	0
Laboratory equipment	250000(	88960	250000(	0	250000(	791430	200000(	249003
Laboratory consumables	160000(	1130974	160000(	402218	160000(	37814	160000(	846796
Teaching and non-teaching stal	240000(	240000(	230000(	230000(	183950(	183950(	179950(	179950(
Maintenance and spares	500000	78294	500000	4956	500000	24228	500000	240000
R&D	0	0	0	0	0	0	0	0
Training and Travel	50000	0	50000	0	50000	0	950000	9700
Miscellaneous Expenses*	0	0	0	0	0	0	0	0
Others, specify	375000	141170	375000	0	375000	23406	680000	213203
Total	**29425000**	**25774711**	**28285000**	**23529847**	**23620000**	**19271878**	**23925000**	**19553702**

10.2.1 Adequacy of budget allocation (5) Institute Marks : 5.00

The financial budget allocated by the University for the Department of Chemical Technology over the assessment period (2019-2023) is adequate.

10.2.2 Utilization of allocated funds (5) Institute Marks : 5.00

The allocated financial budget is utilized by the Department of Chemical Technology using predefined and approved process which is in accordance with the general financial rules and the guidelines of the University. There is centrally allocated budget of the R & D which is utilized by the University for the various University Departments. As per the needs and the proposed plans of the University, said budget is solely governed and utilized by the University.

10.2.3 Availability of the audited statements on the institute's website (5) Institute Marks : 5.00

The University regularly publishes online as wll as offline audited statements of the respective accounts on the official website. The webpage links of audited statements of the accounts for the assessment period (2019-2023) are as follows,

Audited statement of 2021-2022

http://bamu.ac.in/LinkClick.aspx?fileticket=bsjUDkH-l70%3d&tabid=3642&portalid=0&mid=11419 (http://bamu.ac.in/LinkClick.aspx?fileticket=bsjUDkH-l70%3d&tabid=3642&portalid=0&mid=11419)

Audited statement 2020-2021

http://bamu.ac.in/LinkClick.aspx?fileticket=qoxUYv-Un5w%3d&tabid=3642&portalid=0&mid=11419 (http://bamu.ac.in/LinkClick.aspx?fileticket=qoxUYv-Un5w%3d&tabid=3642&portalid=0&mid=11419)

Audited statement 2019-2020

http://www.bamu.ac.in/LinkClick.aspx?fileticket=vkra-hJdR4c%3D&tabid=3642&portalid=0&mid=11419 (http://www.bamu.ac.in/LinkClick.aspx?fileticket=vkra-hJdR4c%3D&tabid=3642&portalid=0&mid=11419)

10.3 Program Specific Budget Allocation, Utilization (30) Total Marks 30.00

:

Total Income at Institute level: For CFY,CFYm1,CFYm2 & CFYm3
CFY: (Current Financial Year),
CFYm1 : (Current Financial Year minus 1),
CFYm2 : (Current Financial Year minus 2) and
CFYm3 : (Current Financial Year minus 3)

Table 1 :: CFY 2022-2023

Total Budget 29425000		Actual expenditure (till…): 25774711		Total No. Of Students 78
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
2500000	26925000	88960	25685751	330445.01

Table 2 :: CFYm1 2021-2022

Total Budget 28285000		Actual expenditure (till…): 23529847		Total No. Of Students 84
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
2500000	25785000	0	23529847	280117.23

Table 3 :: CFYm2 2020-2021

Total Budget 23620000		Actual expenditure (till…): 19271878		Total No. Of Students 98
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
2500000	21120000	791430	18480448	196651.82

Table 4 :: CFYm3 2019-2020

Total Budget 23925000		Actual expenditure (till…): 19553702		Total No. Of Students 101
Non Recurring	Recurring	Non Recurring	Recurring	Expenditure per student
2000000	21925000	249003	19304699	193601.01

Items	Budgeted in 2022-2023	Actual Expenses in 2022-2023 till	Budgeted in 2021-2022	Actual Expenses in 2021-2022 till	Budgeted in 2020-2021	Actual Expenses in 2020-2021 till	Budgeted in 2019-2020	Actual Expenses in 2019-2020 till
Laboratory equipment	250000(	88960	250000(	0	250000(	791430	200000(	249003
Software	0	0	0	0	0	0	0	0
Laboratory consumable	160000(	1130974	160000(	402218	160000(	37814	160000(	846796
Maintenance and spares	500000	78294	500000	4956	500000	24228	500000	240000
R & D	0	0	0	0	0	0	0	0
Training and Travel	50000	0	50000	0	50000	0	950000	9700
Miscellaneous Expenses*	0	0	0	0	0	0	0	0
Total	**4650000**	**1298228**	**4650000**	**407174**	**4650000**	**853472**	**5050000**	**1345499**

10.3.1 Adequacy of budget allocation (10) Institute Marks : 10.00

THebudget sanctioned to the department of chemical technology for the B.Tech Chemical Technology program was adequate.

10.3.2 Utilization of allocated funds (20) Institute Marks : 20.00

The allocated financial budget is utilized by the Department of Chemical Technology using predefined and approved process which is in accordance with the general financial rules and the guidelines of the University. There is centrally allocated budget of the R & D which is utilized by the University for the various University Departments. As per the needs and the proposed plans of the University, said budget is solely governed and utilized by the University.

10.4 Library and Internet (20) Total Marks 20.00

10.4.1 Quality of learning resources (hard/soft) (10)

Institute Marks : 10.00

The University Library serves the students with maximum facility with the help of Knwoledge resource Center

Knowledge Resource Center (Library)

Database Name	No. of Journals	chemical technology Journals
American Institute of Physics	19	-
American Physical Society	17	-
Annual Reviews	43	-
Economic & Political Weekly	01	-
Institute for Studies in Industrial Development (ISID) Database	252 Indian social science journals	-
JGate Plus (JCCC)	7900	-
JSTOR	3165	-
Oxford University Press	262	-
Project Muse	731	-
Springer Link 1700 Collection and Nature Journal	1725	-
Taylor and Francis	1078	06
Web of Science		-

E-Books

Publisher Name	No. of E-Books	chemical technology EBooks
Elsevier e-books	29	-
Springer link e-books	3203	-
ACS E-Books	115	115
American Library Association	410	-
McGraw Hill Education	292	20
Taylor and Francis	48	-
Total e-books =	**4097**	**135**

Accessibility of Students

Knowledge Resource Center providing 60 + computers Internet Laboratory, 32 Research Cubical, 28 computers E-Library for accessing e-resources.

Support to students for self learning activities

Knowledge Resource Center (Library) organizing regularly Training Programs, Library Orientations, Author Workshop for Students

10.4.2 Internet (10)

Institute Marks : 10.00

Name of the Internet Provider:
Bharat Sanchar Nigam Ltd.(BSNL)
National Knowledge Network(NKN)
Available Bandwidth
BSNL-1Gbps
NKN-1Gbps
Wi Fi Availability
Yes (MoU with Reliance Jio Infocomm)
Internet access in labs, classrooms, library and offices of all Departments
Yes
Security arrangements
Unified Threat Management (UTM) /Firewall for gateway level security.
Endpoint Security(EPS)/ Antivirus for all PCs in university.

Annexure I
(A) PROGRAM OUTCOME (POs)

Engineering Graduates will be able to:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

(B) PROGRAM SPECIFIC OUTCOME (PSOs)
Program should specify 2-4 program specific outcomes.

PSO1	Graduates will apply knowledge in chemistry, physics, biology and basic engineering to investigate and solve complex problems in formulation development, processing and research to meet the specified needs with appropriate considerations for the society.
PSO2	Graduates will able to attain ability to control processes by analyzing, applying mathematics, process control, instrumentation and design and integrate knowledge of Chemical Technology techniques in specific industries.
PSO3	Equip students of Chemical Technology in specific industries and create passion among students for lifelong learning process with ethical & professional behavior to serve the profession by research in advanced fields of study.

Declaration

The head of the institution needs to make a declaration as per the format given -

- I undertake that, the institution is well aware about the provisions in the NBA's accreditation manual concerned for this application, rules, regulations, notifications and NBA expert visit guidelines inforce as on date and the institutes hall fully abide by them.
- It is submitted that information provided in this Self Assessment Report is factually correct.
- I understand and agree that an appropriate disciplinary action against the Institute willbe initiated by the NBA. In case, any false statement/information is observed during pre-visit, visit, postvisit and subsequent to grant of accreditation.

Head of the Institute
Name : Dr. Pravin Shridhar Wakte
Designation : Professor & Head
Signature :

Seal of The Institution :

Place : Aurangabad
Date : 21-07-2023 15:36:44