

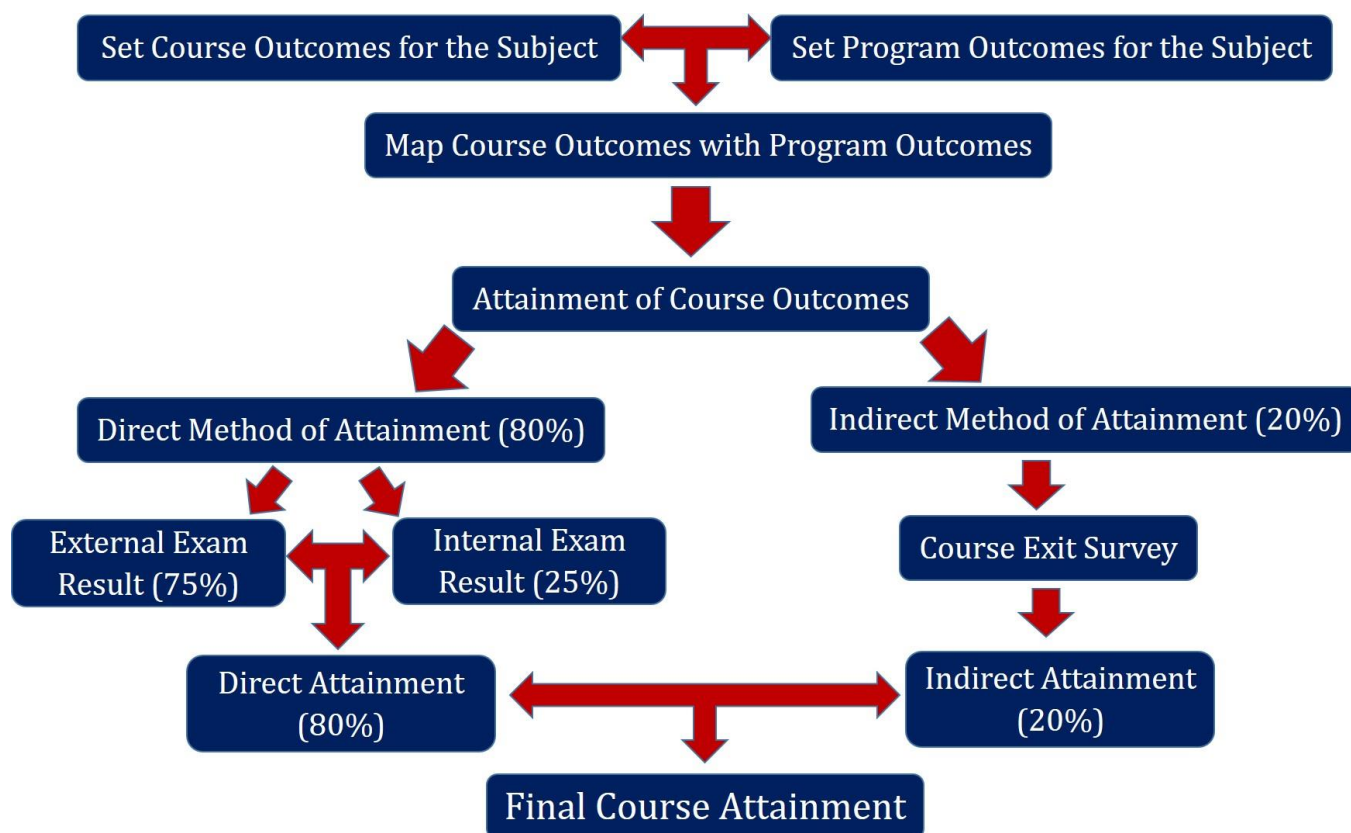
Key Indicator 2.6

Student Performance and Learning Outcomes

Metric No. 2.6.2 QIM

Attainment of POs and COs are evaluated

STEPS FOR ATTAINMENT OF COURSE OUTCOMES



1. Assessment of Course Outcomes: Course outcomes are assessed by students' performance in both internal (sessionals and continuous mode) and external (university) exams.

2. Internal Exams Structure:

- Internal theory exams consist of two sessional and continuous mode assessments.
- Whereas, internal practical exams consist of only two sessional examinations.
- The question paper for internal exams and continuous assessments are framed in such way that all course outcomes will get covered.

3. Compliance with University Guidelines: As the institute is affiliated with Savitribai Phule Pune University (SPPU), all internal examinations question paper are framed as per the format given by the University.

4. Setting Target Levels:

- The target level for the attainment of Course Outcomes (COs) is determined at the AMC meeting based on pass percentage criteria.
- For internal exams, the target is set at 60%.
- For university exams, the target is set at 50%.

5. Levels of Attainment:

- If 60% or more of students achieve marks above the target, the level is considered high (Level 3).
- If 55% to 59.99% of students achieve marks above the target, the level is considered medium (Level 2).
- If 50% to 54.99% of students achieve marks above the target, the level is considered low (Level 1).
- If less than 50% of students achieve marks above the target, the level is considered zero (Level 0).

6. Responsibility for Attainment:

- The respective subject teacher is responsible for the attainment of COs.
- Questions in internal exams and continuous assessments are aligned with Bloom's Taxonomy and mapped to COs and Program Outcomes (POs).

7. Calculation of Final Course Outcome Attainment:

- **It involves a two-fold approach, i.e.,** the direct method (result analysis) has 80% weightage, and the indirect method (course exit surveys) has 20% weightage.
- The **direct method** encompasses evaluating students through both internal (25% weightage) and external (75% weightage) examinations.
- Whereas, **indirect method** evaluation involves conducting course exit surveys upon the conclusion of each semester.



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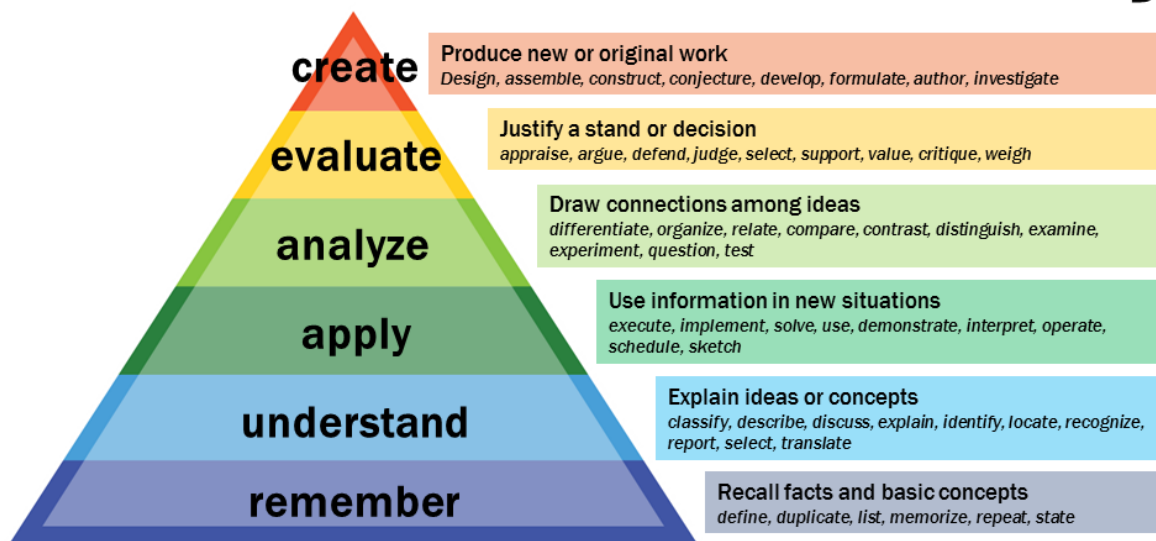
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Case Study

Class	First Year B Pharm.
Semester	I
Name of Subject	Pharmaceutics I (Theory)
Subject code	BP103T
Academic Year	2022-23
Pattern	2019

A. Define Course Outcomes for the Subject aligning with Bloom's Taxonomy

Bloom's Taxonomy



Pharmaceutics I-Theory			
Upon completion of the course, students shall be able to;		Bloom Taxonomy Level	
CO 1	Describe the historical development and scope of the pharmacy profession in India.	Remember	L1
CO 2	Explain the classification and definitions of various dosage forms and prescription handling.	Understand	
CO 3	Calculate pediatric dosages, pharmaceutical calculations, and prepare various dosage forms.	Apply	L2
CO 4	Analyze the stability problems and methods to overcome them in liquid and biphasic dosage forms.	Analyze	
CO 5	Evaluate the advantages, disadvantages, and preparation methods of various dosage forms like suppositories and semisolids.	Evaluate	L3
CO 6	Design and formulate experimental protocols for preparing and evaluating different pharmaceutical dosage forms.	Create	

B. DEFINE PROGRAM OUTCOMES



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PO1: Pharmacy Knowledge: Apply the knowledge of science, pharmacy fundamentals, and a pharmacy specialization to the solution of complex pharmacy problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex pharmacy problems reaching substantiated conclusions using first principles of pharmaceuticals, chemistry, and engineering sciences.

PO3: Design/Development of Solutions: Design solutions for complex problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety, and the cultural, societal, and environmental considerations.

PO4: 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 for complex problems:

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern tools including prediction and modeling to complex activities with an understanding of the limitations.

PO6: The pharmacy 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 practice.

PO7: Environment and sustainability: understand the impact of professional solutions in societal and environmental contexts, demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the pharmacy practice

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO 10: Communication: Communicate effectively on complex engineering activities with the pharmacy 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



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PO11: Project management and finance: Demonstrate knowledge and understanding of the pharmacy and management principles and apply these to one's work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Lifelong 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.

C. Mapping COs with POs

- Find the correlation between each defined course outcome with individual program outcome.
- Map the individual CO with PO and assigned a strength of mapping on scale of 0 to 3.
- Where 3 represents highest correlation, 2 for medium, 1 for low, and 0 for no correlation.

Pharmaceutics I-Theory												
CO-PO Mapping (Rate on a scale of 0-3)												
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12
CO 1	3	1	1	1	1	2	2	1	1	1	1	2
CO 2	3	2	2	2	2	2	1	2	2	2	2	2
CO 3	3	3	3	3	3	2	1	2	2	2	2	3
CO 4	3	3	2	3	3	3	2	2	2	2	2	3
CO 5	3	3	2	3	3	3	2	3	2	3	2	3
CO 6	3	3	3	3	3	3	3	3	3	3	3	3
Total	18	15	13	15	15	15	11	13	12	13	12	16
Average	3.00	2.50	2.17	2.50	2.50	2.50	1.83	2.17	2.00	2.17	2.00	2.67
Cumulative Average: 2.25												

Justification for Mapping


1. CO1 (Describe the historical development and scope of the pharmacy profession in India)
 - **PO1 (3):** Requires foundational knowledge of pharmacy history and development.
 - **PO2 (1):** Basic analysis of historical data.
 - **PO3 (1):** Minimal design aspect.
 - **PO4 (1):** Basic investigation into historical aspects.
 - **PO5 (1):** Limited tool usage.
 - **PO6 (2):** Understanding societal impact of pharmacy development.
 - **PO7 (2):** Historical perspective on sustainability.
 - **PO8 (1):** Basic ethical principles in historical context.
 - **PO9 (1):** Individual learning.
 - **PO10 (1):** Basic communication of historical knowledge.
 - **PO11 (1):** Minimal project management.
 - **PO12 (2):** Recognition of lifelong learning from historical development.
2. CO2 (Explain the classification and definitions of various dosage forms and prescription handling)
 - **PO1 (3):** Strong knowledge application needed.
 - **PO2 (2):** Analysis of classification and definitions.
 - **PO3 (2):** Basic design understanding.
 - **PO4 (2):** Investigative approach to understanding dosage forms.
 - **PO5 (2):** Modern tools for dosage classification.
 - **PO6 (2):** Societal implications of prescription handling.
 - **PO7 (1):** Basic understanding of sustainability.
 - **PO8 (2):** Ethical considerations in prescription handling.
 - **PO9 (2):** Teamwork in classification and definition tasks.
 - **PO10 (2):** Effective communication of classification and definitions.
 - **PO11 (2):** Managing classification and prescription tasks.
 - **PO12 (2):** Lifelong learning in dosage forms and prescriptions.
3. CO3 (Calculate pediatric dosages, pharmaceutical calculations, and prepare various dosage forms)
 - **PO1 (3):** Essential knowledge for calculations and preparations.
 - **PO2 (3):** Problem-solving in dosage calculations.
 - **PO3 (3):** Designing dosage forms based on calculations.

- **PO4 (3):** Conducting thorough investigations.
 - **PO5 (3):** Advanced tool usage for calculations and preparations.
 - **PO6 (2):** Impact on pediatric health.
 - **PO7 (1):** Basic understanding of sustainable practices.
 - **PO8 (2):** Ethical preparation and calculation.
 - **PO9 (2):** Collaborative preparation and calculation.
 - **PO10 (2):** Communicating calculations and preparation methods.
 - **PO11 (2):** Managing preparation tasks.
 - **PO12 (3):** Continuous learning in preparation techniques.
4. CO4 (Analyze the stability problems and methods to overcome them in liquid and biphasic dosage forms)
- **PO1 (3):** Strong foundational knowledge in stability analysis.
 - **PO2 (3):** Complex problem analysis.
 - **PO3 (2):** Design methods to overcome stability issues.
 - **PO4 (3):** In-depth investigative skills.
 - **PO5 (3):** Use of modern tools for stability analysis.
 - **PO6 (3):** Impact on public health and safety.
 - **PO7 (2):** Sustainable practices in stability solutions.
 - **PO8 (2):** Ethical considerations in stability analysis.
 - **PO9 (2):** Team collaboration in analyzing stability.
 - **PO10 (2):** Communicating stability problems and solutions.
 - **PO11 (2):** Project management in stability tasks.
 - **PO12 (3):** Lifelong learning in stability methods.
5. CO5 (Evaluate the advantages, disadvantages, and preparation methods of various dosage forms like suppositories and semi-solids)
- **PO1 (3):** Extensive knowledge application.
 - **PO2 (3):** Complex problem evaluation.
 - **PO3 (2):** Evaluating design of dosage forms.
 - **PO4 (3):** Investigative evaluation.
 - **PO5 (3):** Modern tools for evaluation.

- **PO6 (3):** Health impact of various dosage forms.
 - **PO7 (2):** Sustainable practices in dosage forms.
 - **PO8 (3):** Ethical responsibility in evaluation.
 - **PO9 (2):** Teamwork in evaluating dosage forms.
 - **PO10 (3):** Communicating evaluation results.
 - **PO11 (2):** Managing evaluation projects.
 - **PO12 (3):** Continuous improvement in evaluation techniques.
6. CO6 (Design and formulate experimental protocols for preparing and evaluating different pharmaceutical dosage forms)
- **PO1 (3):** Comprehensive knowledge application.
 - **PO2 (3):** Formulating complex protocols.
 - **PO3 (3):** Designing experimental solutions.
 - **PO4 (3):** Advanced investigative methods.
 - **PO5 (3):** Utilization of modern tools.
 - **PO6 (3):** Impact on public health and safety.
 - **PO7 (3):** Sustainable development in protocols.
 - **PO8 (3):** Ethical creation of protocols.
 - **PO9 (3):** Leading teams in protocol creation.
 - **PO10 (3):** Effective communication of protocols.
 - **PO11 (3):** Managing experimental projects.
 - **PO12 (3):** Continuous innovation in protocol design.


Question Papers mapping with Course outcomes and Programme outcomes

Theory Sessional – I



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First Sessional Examination 2022-23 (Pattern - 2019)

Class: First Year B. Pharmacy (SEM-I) **Date: 22/02/2023**
Subject: Pharmaceutics-I **Time: 3 pm - 4.30 pm**
Subject Code: BP103T **Total Marks: 30M**

Instruction: 1. All questions are compulsory
2. Neat diagrams must be drawn wherever necessary

Q. 1	Answer the following (any 5 x 2 marks each)	(10)	CO	PO
a.	Define- a) Hypertonic Solution, b) Hypotonic Solution		3	1, 5
b.	Comment on term idiosyncrasy		2	1, 6
c.	Find the strength of 75% v/v & 45% v/v alcohol in terms of proof spirit?		3	1, 5
d.	Comment on SALA medicine.		1, 2	1, 6
e.	Comment on Additive Effect.		1, 2	1, 6
f.	How will you prepare 400 ml of 60% alcohol using 70% alcohol and 30% alcohol?		3	1, 5, 6, 10
g.	Define - i) Drug, ii) Dosage Form		1, 2	1, 5, 10
Q. 2	Answer the following (any 1X 10 marks each)	(10)		
a.	Define Prescription? Explain in detail parts of prescription.		2	1, 5, 10
b.	Define Posology? Explain in brief any eight factors affecting dose of drug.		2	1, 5
Q. 3	Answer the following (any 2 X 5 marks each)	(10)		
a.	Describe in brief possible sources of errors in prescription.		2	1, 5, 10
b.	Write a note on i) Synergism, ii) Antagonism.		1, 2	1, 5, 6
c.	Explain steps involved in handling of prescription.		2	1, 5, 10

Theory Sessional - II

Second Sessional Examination 2022-23 (Pattern - 2019)

Class: First Year B. Pharmacy (SEM-I)

Date: 29/03/2023

Subject: Pharmaceutics-I

Time: 03:00 pm- 04:30 pm

Subject Code: BP103T

Total Marks: 30 M

Instruction: 1. All questions are compulsory

2. Neat diagrams must be drawn wherever necessary

Q. 1	Answer the following (any 5 x 2 marks each)	(10)	CO	PO
a.	Define powders.		2	2, 5, 10
b.	Write a note on the different approaches used for the solubility enhancement of the drug.		5	2, 5, 6, 8, 10
c.	How to mix the powders having different strengths?		6	2, 5, 6, 8, 10
d.	Differentiate between syrup and elixir.		2	2, 5, 10
e.	Classify Emulsifying agents.		2	2, 5, 10
f.	What is a eutectic mixture? How will you dispense it?		5	2, 5, 6, 8, 10
g.	Write a note on suppository bases.		5	2, 4, 5, 6, 8, 10
Q. 2	Answer the following (any 1X 10 marks each)	(10)		
a.	Write a brief note on the evaluation of suppositories.		5	2, 4, 5, 6, 8, 10
b.	Write a note on the Instabilities of Emulsion.		5	2, 4, 5, 6, 8, 10
Q. 3	Answer the following (any 2 X 5 marks each)	(10)		
a.	Differentiate between flocculated and deflocculated suspension.		4	2, 4, 5, 6, 8, 10
b.	Define displacement value? Why and how is it calculated?		4	2, 4, 5, 6, 8, 10
c.	Write in brief about the different techniques used for the identification of emulsion.		4	2, 4, 5, 6, 8, 10



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Continuous Mode Assignment

Que. No.	Questions	CO	PO
1	Classify liquid dosage forms.	2, 4	1, 12
2	Why liniments are not applied on broken skin?	3, 4	2, 5, 6, 8, 10
3	Why syrup has 66.67 % of sugar in it?	3, 4	2, 5, 6, 8, 10
4	Write a note on syrup.	2, 4	1, 12

D. Attainment of Course Outcomes

1. Direct Attainment (80 % weightage in final attainment)

➤ **External Exam Result** (75 % weightage in direct attainment)

- Result analysis was done after the declaration of the University's Results
- At first, the number of students who have appeared for the university examination (**N**) was determined.
- After that number of students who scored more than the target (**P**) was determined, and the target was set at **50% (38 marks** out of 75 marks exam) for theory exams and **60% (21 marks** out of 35 marks exam) for practical exams. Marks less than the target has been highlighted with yellow color in **Table 1**.
- After that percentage of students who have achieved the target was determined using the formula: $(P/N) * 100$.
- Then the attainment was performed based on the following criteria;

Percentage of students who have achieved the target	Attainment Level
> 60 %	3
55 to 59.99 %	2
50 to 54.99 %	1
Below 50 %	0

➤ **Internal Exam Result** (25 % weightage in direct attainment)

- Result analysis was carried out after the completion of all the internal and continuous modes of examination.
- After that, the number of students who have appeared for the internal examination (**N**) was determined.
- After that, number of students who scored more than the target (**P**) was determined, and here the target was set at **60% (15 marks** out of 25 marks exam) for theory exams and **60% (9 marks** out of 15 marks exam) for practical exam. Marks less than the target has been highlighted with yellow color in **Table 1**.

- After that, the percentage of students who have achieved the target was determined using the formula: $(P/N) * 100$.
- Then the attainment was performed based on the following criteria;

Percentage of students who have achieved the target	Attainment Level
60 %	3
55 to 59.99 %	2
50 to 54.99 %	1
Below 50 %	0

Table 1: Students appeared in the University Examination and their Result analysis for Internal and External Marks.

Roll No.	Name of Student	Theory	
		Internal Marks (25)	External Marks (75)
1	Aher Shivam Nivrutti	22	51
2	Ahire Aditi Rajendra	20	45
3	Ahire Manoj Vithoba	21	50
4	Akhter Sonia Pervaiz	20	36
5	Ambilwade Rushikesh Sandeep	21	51
6	Asole Rutuja Atulkumar	17	26
7	Aware Vicky Sanjay	18	39
8	Bairagi Sejal Laxman	14	40
9	Bankar Ajinkya Vishnu	20	49
10	Barad Gauri Rajeshsa	20	39
11	Bhadke Rutuja Sahebrao	19	45
12	Bhamare Projal Ravindra	20	49
13	Bhavsar Mokshada Aashish	20	46
14	Bhoge Tejashree Jitendra	20	46
15	Bhoi Dinesh Ravindra	19	38
16	Bhor Neha Nitin	21	41
17	Borade Samiksha Rohidas	20	50
18	Borkar Shruti Gyandeo	20	43
19	Chakor Atharva Sanjay	21	49

20	Chaudhari Abhishek Sanjay	18	49
21	Chaudhari Nandini Vijay	18	57
22	Chaudhari Sanjal Sudhir	22	41
23	Chaudhari Vaishnavi Pramod	18	39
24	Chaudhari Vedant Kanifnath	16	21
25	Chavan Arvind Raju	17	48
26	Chavan Sayali Samadhan	16	27
27	Chinchole Sushant Vijay	20	44
28	Choudhary Akram Abdul Rahman	18	42
29	Dalvi Tanmay Sudhir	17	44
30	Darade Shital Shivaji	18	47
31	Deshmukh Siddharth Rajendra	18	45
32	Dighe Jyoti Narayan	18	49
33	Doke Aniket Ramnath	13	25
34	Dusane Vaishnavi Kamlakar	17	42
35	Gadakh Saurabh Sudhakar	17	33
36	Gadekar Hitesh Bhagwan	16	38
37	Gaikwad Vrushabh Vithalrao	17	38
38	Gangurde Vaishnavi Kailas	13	26
39	Garje Rohit	21	40
40	Gohad Nikhil Shantaram	15	40
41	Hiwale Trisharan Anil	17	36
42	Humbe Avdhut Devanand	13	27
43	Ingle Shreya Sandip	20	38
44	Jadhav Mahesh Shankar	18	46
45	Jadhav Sneha Samadhan	19	45
46	Jadhav Vinod Ramesh	16	26
47	Joshi Soham Parag	19	47
48	Kale Gopal Gajanan	17	44
49	Karad Sudarshan Tukaram	18	46
50	Karande Damini Pradip	21	45
51	Khadake Prathamesh Milind	19	39
52	Khaire Sanika Vilas	17	37
53	Khan Abdul Rub Abdul Mobeen	8	24
54	Khedulkar Chhaya Mahadu	15	30

55	Landge Rohit Jayprakash	16	39
56	Lonare Pallavi Rajendra	16	35
57	Maknor Anushka Machindra	17	42
58	Mali Ganesh Laxman	18	43
59	Mali Mangesh	19	37
60	Mali Nupur Amit	20	49
61	Marathe Aakash Vilas	24	53
62	Mohite Amol Rajendra	18	51
63	Mohite Sahil Somnath	9	21
64	Mourya Prince Devlash	17	42
65	Mhundkar Payal Kisna	22	47
66	Muleva Ganesh Pannalal	23	44
67	Mullay Shravani Ratnnaakar	19	37
68	Muthe Omkar Shankar	19	26
69	Nikam Prem Prakash	19	35
70	Nikam Tanuja Satish	19	40
71	Pachbhai Sakshi Balaji	19	38
72	Pakhale Tanmayee Sanjay	24	50
73	Palde Swamiraj Bhaskar	9	3
74	Pardeshi Vaishnavi Sahebrao	19	43
75	Patel Alfiya Asif	20	36
76	Patel Dhurv Jagdish	17	25
77	Patil Aaditya Pradip	14	29
78	Patil Akshay Yograj	18	34
79	Patil Ashwini Gokul	19	43
80	Patil Pranjal Nilesh	21	43
81	Patil Prem Vijay	14	32
82	Patil Saniya Muralidhar	17	44
83	Patil Tejaswini Manohar	14	28
84	Patil Vaishnavi Sainath	21	43
85	Patil Vedika Sunil	17	47
86	Pavase Sakshi Yogesh	19	42
87	Pawar Jeevan Ravindra	18	32
88	Phapale Himanshu Santosh	14	20
89	Potinde Vrushali Sanjay	16	25


90	Purkar Prasad Rajendra	18	33
91	Ramole Jayashri Subhash	18	42
92	Rathod Sandesh Santosh	11	5
93	Rayate Manish Keshav	16	27
94	Sadaphal Siddharth Pravin	15	16
95	Sandecha Disha Vijaykumar	18	43
96	Shilawat Gaurav Bhagawan	15	31
97	Shinde Sanskruti Jayant	18	36
98	Shirsath Mansi Prakash	18	32
99	Solanke Ganesh Machindra	16	29
100	Sonawane Krutika Gangadhar	16	34
101	Suradkar Nikhil Rajeshwar	15	24
102	Tahakik Priyanka Bhagwat	17	34
103	Thosar Himanshu Mohanrao	15	27
104	Tidke Ayush Pramod	14	50
105	Tile Prathmesh Dattatray	15	35
106	Vekhande Pranjali Hemant	17	41
107	Vidhate Sakshi Shyam	19	37
108	Vispute Ketaki Govind	19	39
109	Wagh Bhumi Sanjay	20	30
110	Wani Sakshi Rajendra	19	31
111	Yeole Sarthak Balu	19	26
112	Zankar Gauri Sanjay	20	35

Summary of Internal and External Examination result analysis


Description	Theory	
	Internal	External
Number of students who appeared for the exam (N)	112	112
No. of students who have scored more than the target (P)	99	65

2. Indirect Attainment (20 % weightage in final attainment)

- A questionnaire is prepared for the students to know their understanding of the subject.
- The questionnaires had three scale estimations for every question.
- Sample questionnaire including sample questions as follows;



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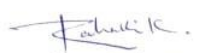
Date: 09/06/23

Course Exit Survey

Name of Student	Priyanka Tabakik	Roll No.	46(B)
Class	First Year B. Pharm.	Semester	I
Name of Subject	Pharmaceutics-I	Subject Code	BP103T
Academic Year	2022-23	Pattern	2019

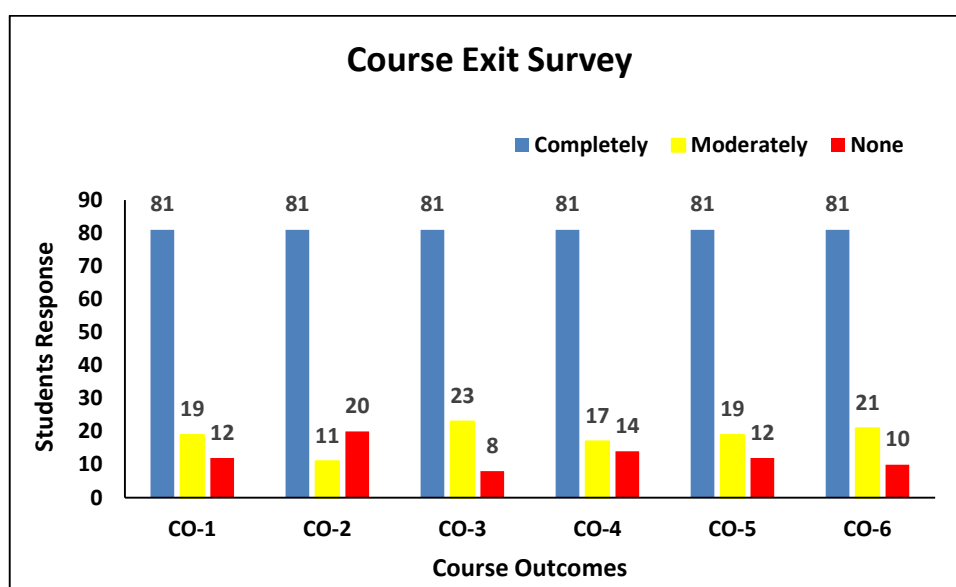
Questionnaire for Course Exit Survey: Kindly respond to the following questions with tick (✓) based on their level of attainment.

Sr. No.	Questions for the attainment of course outcomes	Completely	Moderately	None
1	Have you learned the historical development and scope of the pharmacy profession in India?	✓		
2	Have you learned the classification and definitions of various dosage forms and prescription handling?		✓	
3	Have you learned to calculate paediatric dosages, pharmaceutical calculations, and preparation of various dosage forms?	✓		
4	Have you learned to analyze the stability problems and methods to overcome them in liquid and biphasic dosage forms?			✓
5	Have you learned the preparation and evaluation methods for dosage forms like suppositories and semisolids?	✓		
6	Have you learned to design and formulate experimental protocols for preparing and evaluating different pharmaceutical dosage forms?		✓	


 Name & Signature

Summary of Course Exit Survey

Description	Value
Number of students who appeared for the Survey (N)	112
No. of students who respond for the complete attainment of all the course outcomes (P), Target is completely attained	81



E. FINAL ATTAINMENT OF COURSE OUTCOMES

Attainment of CO				
	Direct Attainment (DA)		Indirect Attainment (IA)	
	Internal (I)	External (E)	Course Exit Survey	
No. of students who have scored more than the target (P), Target is 60% for internal and 50% for external	99	65	No. of students who respond for the complete attainment of all the course outcomes (P)	81
Number of students who appeared for the exam (N)	112	112	Number of students who appeared for the Survey (N)	112
% of students who have achieved the target= (P/N) *100	88	58	% of students who have given the complete attainment feedback= (P/N) *100	72
Attainment Level 3 for > 60%, 2 for 55-59.99 %, 1 for 50-54.99%	3	2	Attainment Level 3 for > 70%, 2 for 60-69.99 %, 1 for 50-59.99%	3
Direct CO attainment level (DA)= 25% (I) + 75% (E.)	2.25			
Indirect CO Attainment based on exit survey	3			
80 % of DA	1.8			
20 % of IA	0.6			
CO attainment level (COA)= 80 % of DA + 20 % of IA	2.4			

Result: The final CO attainment for the subject, Pharmaceutics I (Theory) was found **2.4**

*Similarly Course outcomes of all Subjects has been determined.

Attainment of all Course outcomes for the Academic year 2022-23

B. Pharmacy		
Subject code	Subject Name	CO Attainment
BP101T	Human Anatomy and Physiology I– Theory	0.8
BP102T	Pharmaceutical Analysis I	1.0
BP103T	Pharmaceutics I – Theory	2.4
BP104T	Pharmaceutical Inorganic Chemistry – Theory	1.0
BP105T	Communication skills – Theory	2.8
BP106RBT	Remedial Biology	2.8
BP106RMT	Remedial Mathematics	2.8
BP107P	Human Anatomy and Physiology – Practical	3.0
BP108P	Pharmaceutical Analysis I – Practical	3.0
BP109P	Pharmaceutics I – Practical	3.0
BP110P	Pharmaceutical Inorganic Chemistry – Practical	2.8
BP111P	Communication skills – Practical*	3.0
BP112RBP	Remedial Biology – Practical*	3.0
BP201T	Human Anatomy and Physiology II – Theory	1.8
BP202T	Pharmaceutical Organic Chemistry I – Theory	1.2
BP203T	Biochemistry – Theory	1.8
BP204T	Pathophysiology – Theory	2.2
BP205T	Computer Applications in Pharmacy – Theory *	3.0
BP206T	Environmental sciences – Theory	3.0
BP207P	Human Anatomy and Physiology II – Practical	2.8
BP208P	Pharmaceutical Organic Chemistry I– Practical	3.0
BP209P	Biochemistry – Practical	2.8
BP210P	Computer Applications in Pharmacy – Practical*	3.0
BP301T	Pharmaceutical Organic Chemistry II – Theory	2.6
BP302T	Physical Pharmaceutics I – Theory	0.8
BP303T	Pharmaceutical Microbiology – Theory	2.6
BP304T	Pharmaceutical Engineering – Theory	0.8
BP305P	Pharmaceutical Organic Chemistry II – Practical	3.0
BP306P	Physical Pharmaceutics I – Practical	3.0
BP307P	Pharmaceutical Microbiology – Practical	3.0
BP308P	Pharmaceutical Engineering –Practical	2.8
BP401T	Pharmaceutical Organic Chemistry III– Theory	3.0
BP402T	Medicinal Chemistry I – Theory	2.8
BP403T	Physical Pharmaceutics II – Theory	2.8

BP404T	Pharmacology I – Theory	2.6
BP405T	Pharmacognosy and Phytochemistry I– Theory	3.0
BP406P	Medicinal Chemistry I – Practical	2.8
BP407P	Physical Pharmaceutics II – Practical	2.8
BP408P	Pharmacology I – Practical	2.8
BP409P	Pharmacognosy and Phytochemistry I – Practical	2.8
BP501T	Medicinal Chemistry II – Theory	2.2
BP502T	Industrial Pharmacy I– Theory	0.8
BP503T	Pharmacology II – Theory	2.2
BP504T	Pharmacognosy and Phytochemistry II– Theory	2.2
BP505T	Pharmaceutical Jurisprudence – Theory	2.8
BP506P	Industrial Pharmacy I – Practical	2.8
BP507P	Pharmacology II – Practical	2.8
BP508P	Pharmacognosy and Phytochemistry II – Practical	2.8
BP601T	Medicinal Chemistry III – Theory	2.8
BP602T	Pharmacology III – Theory	2.6
BP603T	Herbal Drug Technology – Theory	2.8
BP604T	Biopharmaceutics and Pharmacokinetics – Theory	0.8
BP605T	Pharmaceutical Biotechnology – Theory	2.8
BP606T	Quality Assurance –Theory	2.8
BP607P	Medicinal chemistry III – Practical	2.8
BP608P	Pharmacology III – Practical	2.8
BP609P	Herbal Drug Technology – Practical	2.8
BP701T	Instrumental Methods of Analysis – Theory	2.2
BP702T	Industrial Pharmacy II – Theory	2.8
BP703T	Pharmacy Practice – Theory	2.8
BP704T	Novel Drug Delivery System – Theory	2.6
BP705P	Instrumental Methods of Analysis – Practical	2.8
BP706PS	Practice School*	2.8
BP801T	Biostatistics and Research Methodology	2.8
BP802T	Social and Preventive Pharmacy	2.8
BP803ET	Pharmaceutical Marketing	2.8
BP809ET	Cosmetic Science	2.8
BP813PW	Project Work	2.0
	Average of CO attainment	2.51



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Program Outcome Attainment

STEPS FOR ATTAINMENT OF PROGRAM OUTCOMES

A. Direct Attainment (80% weightage)

- 1. Map Course Outcomes (COs) to Program Outcomes (POs):** Map the course outcomes of all subjects with program outcomes to determine the average of individual program outcomes. The calculated average will be the target for Program Attainment.
- 2. Determine CO Attainment:** Determine the CO attainment for all the subjects.
- 3. Calculate PO Attainment:** Calculate the PO attainment using the following formula:

$$PO \text{ attainment} = (CO-PO \text{ mapping value of individual Program Outcomes of particular subject} \times \text{Course Attainment Value for the same subject}) / \text{Maximum mapping strength.}$$

Example: For the subject BP101T, if the CO-PO mapping value for the first program outcome is 3 and the CO attainment value is 0.8, then the PO attainment for that particular subject is calculated as follows:

$$PO \text{ attainment} = (3 \times 0.8) / 3 = 0.8$$

A. Direct Attainment of Program Outcomes												
1. CO-PO Mapping for all Subjects												
Subject code	Program Outcomes											
	1	2	3	4	5	6	7	8	9	10	11	12
BP101T	3.00	2.67	1.67	2.17	1.83	2.33	1.67	2.33	1.67	2.33	1.33	2.50
BP102T	3.00	2.33	1.83	2.50	2.50	1.50	1.50	2.17	2.00	2.17	1.83	2.67
BP103T	3.00	2.50	2.17	2.50	2.50	2.50	1.83	2.17	2.00	2.17	1.50	2.17
BP104T	3.00	2.33	1.83	2.50	2.50	1.43	1.57	2.17	2.00	2.17	1.83	2.67

2. CO Attainment for all Subjects		
B. Pharmacy		
Subject code	Subject Name	CO Attainment
BP101T	Human Anatomy and Physiology I- Theory	0.8
BP102T	Pharmaceutical Analysis I	1.0
BP103T	Pharmaceutics I – Theory	2.4

- 4. Determine PO Attainment for All POs:** Similarly, determine the PO attainment of all the POs for all subjects.



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5. **Calculate Average PO Attainment:** Determine the average for each program attainment value across all subjects.
6. **Final Program Attainment:** The calculated averages are the final program attainment for individual Program Outcomes by the direct method.

B. Indirect Attainment (20% weightage)

- Indirect attainment is determined from the student exit survey. A questionnaire is designed for this purpose and the average response of the outgoing students for each PO is computed.

C. Final PO attainment: 80% of Direct attainment + 20% of Indirect Attainment



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Case Study

Batch	2019-20 to 2022-23
Program	B. Pharmacy
Pattern	2019

A batch of B. Pharm. Students who have admitted to the program in the academic year 2019-20 and pass out in 2022-23 has been taken here for determining attainment of program outcomes.

A. Direct Attainment of Program Outcomes

1. CO-PO Mapping average

B. Pharmacy

Batch: 2019-2023

Subject code		Program Outcomes												
		1	2	3	4	5	6	7	8	9	10	11	12	
First Year B. Pharm.	Semester - 1	BP101T	3.00	2.67	1.67	2.17	1.83	2.33	1.67	2.33	1.67	2.33	1.33	2.50
		BP102T	3.00	2.33	1.83	2.50	2.50	1.50	1.50	2.17	2.00	2.17	1.83	2.67
		BP103T	3.00	2.50	2.17	2.50	2.50	2.50	1.83	2.17	2.00	2.17	2.00	2.67
		BP104T	3.00	2.33	1.83	2.50	2.50	1.50	1.50	2.17	2.00	2.17	1.83	2.67
		BP105T	1.83	1.50	1.00	0.67	0.67	1.50	0.50	1.33	1.83	2.17	0.83	1.83
		BP106RBT	3.00	1.67	1.00	0.67	0.67	1.33	0.50	1.33	0.83	2.00	0.83	1.83
		BP106RMT	3.00	2.50	1.67	1.67	1.67	1.50	0.67	1.00	0.83	1.83	0.83	2.00
		BP107P	3.00	2.33	1.67	1.50	1.83	1.67	0.50	1.17	0.83	1.83	0.83	2.00
		BP108P	3.00	2.33	1.67	1.50	1.83	1.67	0.50	1.17	0.83	1.83	0.83	2.00
		BP109P	3.00	2.33	1.67	1.50	1.83	1.67	0.50	1.17	0.83	1.83	0.83	2.00
		BP110P	3.00	2.33	1.67	1.50	1.83	1.67	0.50	1.17	0.83	1.83	0.83	2.00
		BP111P	0.00	0.00	1.00	1.33	0.83	1.83	0.33	0.50	2.00	3.00	0.50	1.83
	BP112RBP	2.17	1.83	1.83	1.67	1.83	0.33	0.67	0.50	1.00	2.17	1.17	1.83	
	Semester - 2	BP201T	3.00	2.50	2.50	2.50	2.50	1.17	1.17	1.17	1.67	2.17	1.17	2.50
		BP202T	3.00	2.50	2.00	2.50	2.50	1.17	1.17	1.17	1.67	2.17	1.17	2.50
		BP203T	3.00	2.67	2.33	2.33	2.50	2.00	1.67	2.00	2.00	2.17	1.67	2.50
		BP204T	3.00	2.83	2.50	2.50	2.17	2.17	1.17	2.17	2.17	2.17	1.17	2.17
		BP205T	2.50	2.67	2.33	2.50	2.50	1.67	1.17	1.67	1.50	2.50	1.67	2.50
		BP206T	2.50	2.50	2.00	2.00	2.00	2.17	2.67	1.67	1.67	2.67	1.67	2.67
		BP207P	3.00	2.67	2.67	2.67	1.67	2.00	1.33	2.00	1.83	2.33	1.17	2.50
		BP208P	3.00	2.33	2.50	2.50	2.83	2.33	1.17	2.17	2.00	2.17	1.33	2.17
		BP209P	2.83	2.67	1.67	2.00	2.17	0.67	0.67	0.67	0.33	2.00	0.67	1.67
BP210P		2.17	2.17	1.83	1.50	2.33	1.83	1.00	0.83	0.83	2.67	1.50	1.67	
S. Y. B. Pharm.	Semester - 3	BP301T	3.00	2.00	1.33	1.17	1.00	0.00	0.33	0.00	0.00	1.17	0.00	1.17
		BP302T	3.00	1.83	1.17	1.17	1.00	0.00	0.17	0.00	0.00	1.33	0.00	1.17
		BP303T	3.00	2.17	1.00	1.33	1.83	0.67	0.83	1.00	0.17	1.50	0.17	2.00
		BP304T	3.00	2.17	1.33	1.67	2.00	0.83	1.17	1.00	0.17	1.50	0.17	2.00
		BP305P	2.83	2.00	1.33	1.67	2.33	1.00	1.00	1.00	0.17	2.00	0.17	2.00
		BP306P	3.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00
		BP307P	3.00	2.00	1.00	1.83	2.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00
		BP308P	3.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00

Third Year B. Pharm.	Semester- 4	BP401T	3.00	2.00	1.00	1.50	1.50	1.00	1.00	2.00	1.00	2.00	1.00	2.00	
		BP402T	3.00	2.50	2.00	2.17	2.17	1.50	1.50	2.17	1.17	2.17	1.50	2.50	
		BP403T	3.00	3.00	2.33	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.83	1.00
		BP404T	3.00	3.00	2.17	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00
		BP405T	3.00	3.00	2.17	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00
		BP406P	3.00	3.00	2.50	2.50	2.83	1.00	1.00	2.00	1.00	2.00	1.83	2.00	
		BP407P	3.00	3.00	2.33	2.67	2.83	2.00	1.00	2.00	1.00	2.00	1.83	2.00	
		BP408P	3.00	3.00	2.33	2.50	2.67	2.00	1.00	2.00	1.00	2.00	1.67	2.00	
Third Year B. Pharm.	Semester- 5	BP501T	2.00	2.17	1.67	1.33	1.50	1.33	1.33	1.00	1.33	1.67	1.33	1.67	
		BP502T	2.83	1.67	1.50	1.67	1.67	1.17	1.33	1.00	1.33	1.50	1.33	1.83	
		BP503T	3.00	1.83	1.33	1.83	1.67	1.00	1.17	1.00	1.17	1.33	1.17	1.83	
		BP504T	3.00	2.33	1.50	2.17	2.00	1.17	1.17	1.00	1.17	1.33	1.17	1.83	
		BP505T	3.00	2.67	1.83	2.17	1.83	2.33	1.33	2.33	1.17	2.17	1.17	2.00	
		BP506P	3.00	2.83	2.00	2.50	2.17	2.00	1.00	2.00	1.33	1.33	1.33	2.33	
		BP507P	3.00	2.83	2.00	2.50	2.17	2.00	1.00	2.00	1.33	1.33	1.33	2.33	
		BP508P	3.00	2.83	2.00	2.33	2.00	1.83	2.00	2.00	1.17	1.17	1.17	2.17	
	Semester- 6	BP601T	3.00	2.67	2.33	2.50	2.17	1.67	1.67	2.00	1.17	1.17	1.17	2.17	
		BP602T	3.00	2.67	2.33	2.50	2.17	1.83	1.67	2.00	1.00	1.00	1.00	2.00	
		BP603T	3.00	2.33	1.83	2.17	1.83	2.17	1.33	1.67	1.17	2.17	1.00	2.33	
		BP604T	3.00	2.50	1.83	2.33	1.83	2.00	1.33	1.67	1.00	2.17	0.83	2.17	
		BP605T	3.00	2.33	1.83	2.33	2.17	1.83	1.33	1.67	1.00	2.17	0.83	2.17	
		BP606T	3.00	2.33	1.83	2.33	2.17	1.83	1.50	1.67	1.00	2.17	0.83	2.17	
		BP607P	2.50	2.67	1.83	2.33	2.00	2.17	1.33	2.00	1.67	2.17	1.50	2.17	
		BP608P	2.50	2.67	2.00	2.33	1.83	1.50	1.50	2.00	1.50	2.00	1.00	2.00	
Final Year B. Pharm.	Semester- 7	BP701T	3.00	3.00	2.00	2.50	2.50	2.33	2.00	2.00	3.00	3.00	2.00	2.00	
		BP702T	3.00	3.00	3.00	2.17	2.50	2.33	2.17	2.17	3.00	3.00	3.00	2.00	
		BP703T	3.00	3.00	3.00	2.33	2.33	2.33	2.17	2.17	3.00	3.00	3.00	2.00	
		BP704T	3.00	2.50	2.00	2.00	2.17	2.33	2.00	2.00	2.00	2.00	2.00	2.00	
		BP705P	3.00	2.67	2.17	2.33	2.00	2.17	2.00	2.00	2.00	2.00	2.00	2.00	
		BP706PS	3.00	3.00	3.00	2.67	2.33	2.50	2.33	2.00	3.00	3.00	2.67	3.00	
	Semester-8	BP801T	3.00	3.00	2.83	2.83	2.83	2.50	1.67	2.17	1.83	2.83	1.83	2.50	
		BP802T	3.00	2.67	2.67	2.67	1.83	3.00	2.67	1.67	1.67	2.67	1.67	1.83	
		BP803ET	3.00	2.83	2.67	2.67	2.17	2.83	2.00	1.83	1.50	2.83	2.17	2.17	
		BP809ET	3.00	3.00	2.33	2.17	2.17	2.17	2.00	2.00	2.00	2.00	2.00	2.00	
		BP813PW	2.67	2.67	2.17	2.33	2.33	2.67	2.17	2.00	2.83	2.67	2.50	2.67	
		Average	2.86	2.45	1.93	2.10	2.05	1.71	1.38	1.60	1.41	2.06	1.33	2.06	

2. CO Attainment for all Subjects

B. Pharmacy		
First Year B. Pharm.		
Subject code	Subject Name	CO Attainment
BP101T	Human Anatomy and Physiology I– Theory	3.0
BP102T	Pharmaceutical Analysis I	0.8
BP103T	Pharmaceutics I – Theory	3.0
BP104T	Pharmaceutical Inorganic Chemistry – Theory	3.0
BP105T	Communication skills – Theory	3.0
BP106RBT	Remedial Biology	3.0
BP106RMT	Remedial Mathematics	3.0
BP107P	Human Anatomy and Physiology – Practical	3.0
BP108P	Pharmaceutical Analysis I – Practical	2.8
BP109P	Pharmaceutics I – Practical	3.0
BP110P	Pharmaceutical Inorganic Chemistry – Practical	3.0
BP111P	Communication skills – Practical*	3.0
BP112RBP	Remedial Biology – Practical*	3.0
BP201T	Human Anatomy and Physiology II – Theory	3.0
BP202T	Pharmaceutical Organic Chemistry I – Theory	3.0
BP203T	Biochemistry – Theory	3.0
BP204T	Pathophysiology – Theory	3.0
BP205T	Computer Applications in Pharmacy – Theory *	3.0
BP206T	Environmental sciences – Theory	3.0
BP207P	Human Anatomy and Physiology II –Practical	3.0
BP208P	Pharmaceutical Organic Chemistry I– Practical	3.0
BP209P	Biochemistry – Practical	3.0
BP210P	Computer Applications in Pharmacy – Practical*	3.0
Second Year B. Pharm.		
Subject code	Subject Name	CO Attainment
BP301T	Pharmaceutical Organic Chemistry II – Theory	3.0
BP302T	Physical Pharmaceutics I – Theory	3.0
BP303T	Pharmaceutical Microbiology – Theory	3.0
BP304T	Pharmaceutical Engineering – Theory	3.0
BP305P	Pharmaceutical Organic Chemistry II – Practical	3.0
BP306P	Physical Pharmaceutics I – Practical	3.0
BP307P	Pharmaceutical Microbiology – Practical	3.0
BP308P	Pharmaceutical Engineering –Practical	3.0

BP401T	Pharmaceutical Organic Chemistry III– Theory	3.0
BP402T	Medicinal Chemistry I – Theory	3.0
BP403T	Physical Pharmaceutics II – Theory	3.0
BP404T	Pharmacology I – Theory	3.0
BP405T	Pharmacognosy and Phytochemistry I– Theory	3.0
BP406P	Medicinal Chemistry I – Practical	3.0
BP407P	Physical Pharmaceutics II – Practical	3.0
BP408P	Pharmacology I – Practical	3.0
BP409P	Pharmacognosy and Phytochemistry I – Practical	3.0
Third Year B. Pharm.		
Subject code	Subject Name	CO Attainment
BP501T	Medicinal Chemistry II – Theory	3.0
BP502T	Industrial Pharmacy I– Theory	3.0
BP503T	Pharmacology II – Theory	3.0
BP504T	Pharmacognosy and Phytochemistry II– Theory	3.0
BP505T	Pharmaceutical Jurisprudence – Theory	3.0
BP506P	Industrial Pharmacy I – Practical	3.0
BP507P	Pharmacology II – Practical	3.0
BP508P	Pharmacognosy and Phytochemistry II – Practical	3.0
BP601T	Medicinal Chemistry III – Theory	3.0
BP602T	Pharmacology III – Theory	3.0
BP603T	Herbal Drug Technology – Theory	3.0
BP604T	Biopharmaceutics and Pharmacokinetics – Theory	0.8
BP605T	Pharmaceutical Biotechnology – Theory	1.0
BP606T	Quality Assurance –Theory	3.0
BP607P	Medicinal chemistry III – Practical	3.0
BP608P	Pharmacology III – Practical	3.0
BP609P	Herbal Drug Technology – Practical	3.0
Final Year B. Pharm.		
Subject code	Subject Name	CO Attainment
BP701T	Instrumental Methods of Analysis – Theory	2.8
BP702T	Industrial Pharmacy II – Theory	2.8
BP703T	Pharmacy Practice – Theory	2.8
BP704T	Novel Drug Delivery System – Theory	2.6
BP705P	Instrumental Methods of Analysis – Practical	2.8
BP706PS	Practice School*	2.8
BP801T	Biostatistics and Research Methodology	2.8
BP802T	Social and Preventive Pharmacy	2.8



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BP803ET	Pharmaceutical Marketing	2.8
BP809ET	Cosmetic Science	2.8
BP813PW	Project Work	2.8


3, 4, 5 and 6.: PO Attainment for all Subjects

Subject code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
BP101T	3.00	2.67	1.67	2.17	1.83	2.33	1.67	2.33	1.67	2.33	1.33	2.50
BP102T	0.80	0.62	0.49	0.67	0.67	0.40	0.40	0.58	0.53	0.58	0.49	0.71
BP103T	3.00	2.50	2.17	2.50	2.50	2.50	1.83	2.17	2.00	2.17	2.00	2.67
BP104T	3.00	2.33	1.83	2.50	2.50	1.50	1.50	2.17	2.00	2.17	1.83	2.67
BP105T	1.83	1.50	1.00	0.67	0.67	1.50	0.50	1.33	1.83	2.17	0.83	1.83
BP106RBT	3.00	1.67	1.00	0.67	0.67	1.33	0.50	1.33	0.83	2.00	0.83	1.83
BP106RMT	3.00	2.50	1.67	1.67	1.67	1.50	0.67	1.00	0.83	1.83	0.83	2.00
BP107P	3.00	2.33	1.67	1.50	1.83	1.67	0.50	1.17	0.83	1.83	0.83	2.00
BP108P	2.80	2.18	1.56	1.40	1.71	1.56	0.47	1.09	0.78	1.71	0.78	1.87
BP109P	3.00	2.33	1.67	1.50	1.83	1.67	0.50	1.17	0.83	1.83	0.83	2.00
BP110P	3.00	2.33	1.67	1.50	1.83	1.67	0.50	1.17	0.83	1.83	0.83	2.00
BP111P	0.00	0.00	1.00	1.33	0.83	1.83	0.33	0.50	2.00	3.00	0.50	1.83
BP112RBP	2.17	1.83	1.83	1.67	1.83	0.33	0.67	0.50	1.00	2.17	1.17	1.83
BP201T	3.00	2.50	2.50	2.50	2.50	1.17	1.17	1.17	1.67	2.17	1.17	2.50
BP202T	3.00	2.50	2.00	2.50	2.50	1.17	1.17	1.17	1.67	2.17	1.17	2.50
BP203T	3.00	2.67	2.33	2.33	2.50	2.00	1.67	2.00	2.00	2.17	1.67	2.50
BP204T	3.00	2.83	2.50	2.50	2.17	2.17	1.17	2.17	2.17	2.17	1.17	2.17
BP205T	2.50	2.67	2.33	2.50	2.50	1.67	1.17	1.67	1.50	2.50	1.67	2.50
BP206T	2.50	2.50	2.00	2.00	2.00	2.17	2.67	1.67	1.67	2.67	1.67	2.67
BP207P	3.00	2.67	2.67	2.67	1.67	2.00	1.33	2.00	1.83	2.33	1.17	2.50
BP208P	3.00	2.33	2.50	2.50	2.83	2.33	1.17	2.17	2.00	2.17	1.33	2.17
BP209P	2.83	2.67	1.67	2.00	2.17	0.67	0.67	0.67	0.33	2.00	0.67	1.67
BP210P	2.17	2.17	1.83	1.50	2.33	1.83	1.00	0.83	0.83	2.67	1.50	1.67
BP301T	3.00	2.00	1.33	1.17	1.00	0.00	0.33	0.00	0.00	1.17	0.00	1.17
BP302T	3.00	1.83	1.17	1.17	1.00	0.00	0.17	0.00	0.00	1.33	0.00	1.17
BP303T	3.00	2.17	1.00	1.33	1.83	0.67	0.83	1.00	0.17	1.50	0.17	2.00
BP304T	3.00	2.17	1.33	1.67	2.00	0.83	1.17	1.00	0.17	1.50	0.17	2.00
BP305P	2.83	2.00	1.33	1.67	2.33	1.00	1.00	1.00	0.17	2.00	0.17	2.00
BP306P	3.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00
BP307P	3.00	2.00	1.00	1.83	2.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00
BP308P	3.00	2.00	1.00	2.00	2.00	1.00	2.00	1.00	1.00	2.00	1.00	2.00
BP401T	3.00	2.00	1.00	1.50	1.50	1.00	1.00	2.00	1.00	2.00	1.00	2.00
BP402T	3.00	2.50	2.00	2.17	2.17	1.50	1.50	2.17	1.17	2.17	1.50	2.50
BP403T	3.00	3.00	2.33	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.83	1.00
BP404T	3.00	3.00	2.17	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00
BP405T	3.00	3.00	2.17	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00


BP406P	3.00	3.00	2.50	2.50	2.83	1.00	1.00	2.00	1.00	2.00	1.83	2.00
BP407P	3.00	3.00	2.33	2.67	2.83	2.00	1.00	2.00	1.00	2.00	1.83	2.00
BP408P	3.00	3.00	2.33	2.50	2.67	2.00	1.00	2.00	1.00	2.00	1.67	2.00
BP409P	3.00	2.83	2.33	2.83	2.83	2.00	1.00	2.00	1.00	2.00	1.83	2.00
BP501T	2.00	2.17	1.67	1.33	1.50	1.33	1.33	1.00	1.33	1.67	1.33	1.67
BP502T	2.83	1.67	1.50	1.67	1.67	1.17	1.33	1.00	1.33	1.50	1.33	1.83
BP503T	3.00	1.83	1.33	1.83	1.67	1.00	1.17	1.00	1.17	1.33	1.17	1.83
BP504T	3.00	2.33	1.50	2.17	2.00	1.17	1.17	1.00	1.17	1.33	1.17	1.83
BP505T	3.00	2.67	1.83	2.17	1.83	2.33	1.33	2.33	1.17	2.17	1.17	2.00
BP506P	3.00	2.83	2.00	2.50	2.17	2.00	1.00	2.00	1.33	1.33	1.33	2.33
BP507P	3.00	2.83	2.00	2.50	2.17	2.00	1.00	2.00	1.33	1.33	1.33	2.33
BP508P	3.00	2.83	2.00	2.33	2.00	1.83	2.00	2.00	1.17	1.17	1.17	2.17
BP601T	3.00	2.67	2.33	2.50	2.17	1.67	1.67	2.00	1.17	1.17	1.17	2.17
BP602T	3.00	2.67	2.33	2.50	2.17	1.83	1.67	2.00	1.00	1.00	1.00	2.00
BP603T	3.00	2.33	1.83	2.17	1.83	2.17	1.33	1.67	1.17	2.17	1.00	2.33
BP604T	0.80	0.67	0.49	0.62	0.49	0.53	0.36	0.44	0.27	0.58	0.22	0.58
BP605T	1.00	0.78	0.61	0.78	0.72	0.61	0.44	0.56	0.33	0.72	0.28	0.72
BP606T	3.00	2.33	1.83	2.33	2.17	1.83	1.50	1.67	1.00	2.17	0.83	2.17
BP607P	2.50	2.67	1.83	2.33	2.00	2.17	1.33	2.00	1.67	2.17	1.50	2.17
BP608P	2.50	2.67	2.00	2.33	1.83	1.50	1.50	2.00	1.50	2.00	1.00	2.00
BP609P	3.00	2.17	2.33	3.00	2.33	2.00	2.00	2.00	2.00	2.00	1.00	2.00
BP701T	2.80	2.80	1.87	2.33	2.33	2.18	1.87	1.87	2.80	2.80	1.87	1.87
BP702T	2.80	2.80	2.80	2.02	2.33	2.18	2.02	2.02	2.80	2.80	2.80	1.87
BP703T	2.80	2.80	2.80	2.18	2.18	2.18	2.02	2.02	2.80	2.80	2.80	1.87
BP704T	2.60	2.17	1.73	1.73	1.88	2.02	1.73	1.73	1.73	1.73	1.73	1.73
BP705P	2.80	2.49	2.02	2.18	1.87	2.02	1.87	1.87	1.87	1.87	1.87	1.87
BP706PS	2.80	2.80	2.80	2.49	2.18	2.33	2.18	1.87	2.80	2.80	2.49	2.80
BP801T	2.80	2.80	2.64	2.64	2.64	2.33	1.56	2.02	1.71	2.64	1.71	2.33
BP802T	2.80	2.49	2.49	2.49	1.71	2.80	2.49	1.56	1.56	2.49	1.56	1.71
BP803ET	2.80	2.64	2.49	2.49	2.02	2.64	1.87	1.71	1.40	2.64	2.02	2.02
BP809ET	2.80	2.80	2.18	2.02	2.02	2.02	1.87	1.87	1.87	1.87	1.87	1.87
BP813PW	2.49	2.49	2.02	2.18	2.18	2.49	2.02	1.87	2.64	2.49	2.33	2.49
Average	2.73	2.34	1.84	1.99	1.95	1.62	1.31	1.52	1.34	1.96	1.27	1.96

B. Indirect Attainment of Program Outcomes

- A questionnaire is prepared for the outgoing students to know their understanding, confidence, skills, communication, and efficiency after completion of the program.
- The questionnaires had four scale (0-3) estimations for every question.
- Sample questionnaire including sample questions as follows;



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Student Exit Survey

Name of Student	Mr. Shubham Pawar	Year of Joining	2019
Program	B. Pharmacy	Year of Completion	2023

Questionnaire: Kindly tick on appropriate box

PO	Question	Poor (0)	Average (1)	Good (2)	Very Good (3)
PO1	How confident are you in applying the knowledge of science, pharmacy fundamentals, and your specialization to solve complex pharmacy problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PO2	How effectively can you identify and analyze complex pharmacy problems using principles of pharmaceuticals, chemistry, and engineering sciences?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PO3	How proficient are you in designing solutions for complex problems that consider public health, safety, and societal and environmental factors?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PO4	How well do you utilize research methods, including the design of experiments and data analysis, to solve complex pharmacy problems?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PO5	How skilled are you in selecting and applying modern tools and techniques for complex pharmacy activities?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PO6	How effectively do you apply contextual knowledge to assess societal, health, safety, legal, and cultural issues in your professional practice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PO7	How well do you understand the impact of your professional solutions on society and the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PO8	How consistently do you apply ethical principles in your professional practice?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PO9	How effectively do you function as an individual and as a member or leader in diverse teams?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PO10	How well can you communicate on complex pharmacy activities with both the pharmacy community and society at large?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
PO11	How proficient are you in applying pharmacy and management principles to manage projects in multidisciplinary environments?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
PO12	How prepared are you to engage in independent and lifelong learning in the context of technological change?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

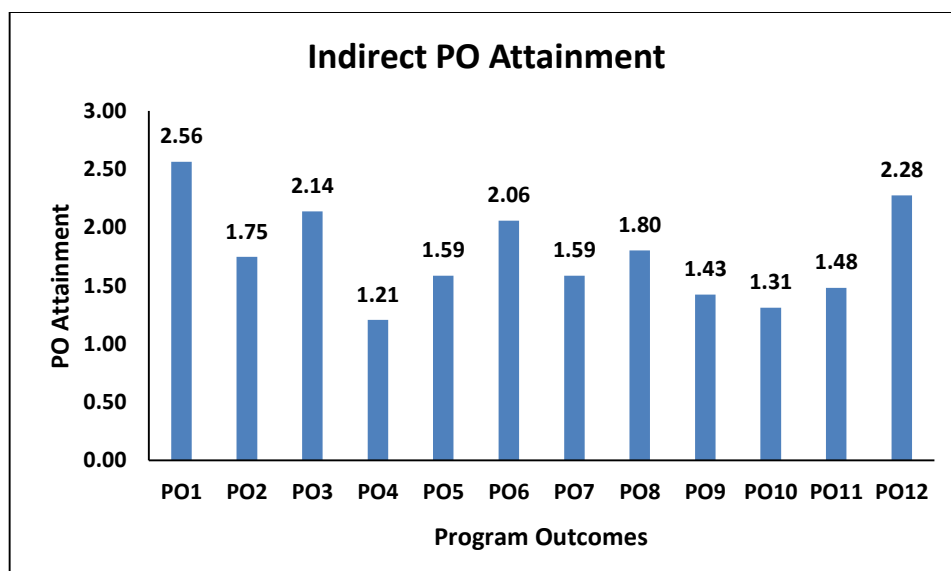
Date: 20/06/2023


 Signature
 Shubham Pawar

Summary of Student Exit Survey:

Description	Value
Number of students who appeared for the Survey (N)	87

Student Exit Survey Analysis Report for the Batch: 2019-20 to 2022-23



Final Program Attainment

Program Outcomes	1	2	3	4	5	6	7	8	9	10	11	12
Direct Attainment	2.73	2.34	1.84	1.99	1.95	1.62	1.31	1.52	1.34	1.96	1.27	1.96
80 % of DA	2.18	1.87	1.47	1.59	1.56	1.30	1.04	1.21	1.08	1.56	1.02	1.56
Indirect Attainment	2.56	1.75	2.14	1.21	1.59	2.06	1.59	1.80	1.43	1.31	1.48	2.28
20 % of IA	0.51	0.35	0.43	0.24	0.32	0.41	0.32	0.36	0.29	0.26	0.30	0.46
Final PO Attainment (80% of DA + 20% of IA)	2.69	2.22	1.90	1.84	1.88	1.71	1.36	1.58	1.36	1.83	1.31	2.02

GAP ANALYSIS AND ACTION TAKEN

Sr. No.	Program Outcomes	Program Attainment		Gap
		Target Level	Attainment Level	
1	Pharmacy Knowledge	2.86	2.69	0.17
<p>Action 1: Extra classes and mentoring has been provided to slow learners beyond the regular planned classes.</p> <p>Action 2: Improvement exams are conducted for the specific subjects.</p>				
2	Problem Analysis	2.45	2.22	0.23
<p>Action 1: A small research Projects are assigned to the students during their final year in order to increase their ability to understand and analyse the problems.</p>				
3	Design/Development of Solutions	1.93	1.90	0.03
<p>Action 1: Students are motivated to develop mini-projects focusing on real world problems.</p> <p>Action 2: Students are motivated to take part in national level competitions like Avishkar for analyzing and addressing the problems in society which involves the design and development of solutions.</p>				
4	Conduct Investigations of Complex Problems	2.10	1.84	0.36
<p>Action 1: Mini projects seeking solution for complex problems are assigned to students as a part of final year project.</p>				
5	Modern tool usage	2.05	1.88	0.17
<p>Action 1: Students are exposed to different open source software during their lab sessions.</p> <p>Action 2: Additional guest lectures and workshops are conducted to educate students on modern tools.</p>				
6	The pharmacy and society	1.71	1.71	No Gap found
<p>Action 1: Students are motivated to be part of extension activities like blood donation, health education through NSS.</p>				

7	Environment and sustainability	1.38	1.36	0.02
<p>Action 1: Students are motivated for tree plantation activities, cleaning activities in society to maintain the sustainability of the environment.</p> <p>Action 2: As part of curriculum students also have to submit a project report related to environmental science.</p>				
8	Ethics	1.60	1.58	0.02
<p>Action 1: The pharmacy ethics is inculcated into the Students through organizing hospital visits, industrial visits etc.</p>				
9	Individual and team work	1.41	1.36	0.05
<p>Action 1 : Mini-Projects are given to final year students to make them understand the importance of team work and upgrade themselves with latest technologies and in turn to have future industrial exposure.</p> <p>Action 2: Students will be encouraged to be a part of various clubs and take part in the activities to enable them to work in teams.</p> <p>Action 4: Encourage students to participate in NSS and other social activities.</p>				
10	Communication	2.06	1.83	0.23
<p>Action 1: Classes were conducted on communication skills in first year and assessment will be done after that.</p> <p>Action 2: Seminars are conducted in the classroom which helps student to improve their communication skills.</p>				
11	Project Management and Finance	1.33	1.31	0.02
<p>Action 1: Mini projects by final year students, which makes them understand the various process involved to complete the project.</p> <p>Action 2: Time management of students will be judged and assessed through successive completion of projects</p>				
12	Lifelong Learning	2.06	2.02	0.04



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Action1: Various Workshops /seminar /guest lectures conducted to educate students on latest technologies.

Action 2: Every semester students are encouraged to enroll in MOOC Course which motivates them to do lifelong learning.