CHITKARA UNIVERSITY

HIMACHAL PRADESH

NAAC ACCREDITED

REPORT

ON

PO ATTAINMENT

B.PHARMACY 2020

SCHOOL OF PHARMACY

School of Pharmacy

PO & CLO Attainment in B. Pharmacy - Batch 2020

The programme outcomes (Pos) are the outcomes that students must attain before graduating. The University's mission and vision are in line with POs. A direct and indirect assessment is used to determine the POs attained at the completion of each programme. While indirect PO attainment involves feedback from alumni and employers, direct PO attainment is based on the students' formative and summative assessments.

Each course/topic has 5-7 defined course learning outcomes (CLOs), which are mentioned in the course handout for each subject and are based on the syllabus material and evaluation component. At the completion of each course, these CLOs must be achieved. As a result, there is a significant correlation between POs and all CLOs of a particular programme. This relationship is quantified on a scale of 1-3, with 3 signifying the highest linkage, 2 signifying average, and 1 signifying the weakest relationship. The average of direct and indirect PO achievement out of 3 is the overall PO attainment.

Determining PO Attainment for B. Pharmacy - Batch 2020

For B. Pharmacy (batch 2020), PO & CLO achievement was calculated for 58 students who took a total of 23 courses in the first year (Semester 1 & 2). Each course's individual course plan lists five to seven course outcomes. These CLOs are taken into consideration when delivering each course's material to the students. Numerous methods, including short tests (Quiz), written assignments, sessional tests, oral viva-voces, file work, and for practical topics, oral exams, are used to conduct continuous assessment (CA) and formative assessment (FA). Summative Assessment (SA), which has a ratio of 25:75 for theory courses and 30:70 for practical courses and internal courses, combines continuous assessment and end-of-term exams.

Given below is the broad strategy adopted for determining PO attainment.

Step I: Determination of CLO Attainment

The first step for determining PO attainment is to calculate the CLO attainment for each course at the end of each year. For CA/FA part, the students obtaining ≥ 60% marks are assigned scale 3; those obtaining 40-59% marks are assigned scale 2 and those having <40% marks are assigned

scale 1. Similarly, for SA part, the CGPA grades obtained in end-term exams are divided into three categories on a scale of 1-3 which are then added with CA scales.

Table 1: CLO Attainment Scale Strategy

Range of Marks	Scale	Interpretation for CO Attainment
≥ 60 %	3	High
Between 40 % to 59 %	2	Medium
Less than 40 %	1	Low

The course wise result was compiled for the first. The final grade obtained by the students was converted as per the university's criteria. Three levels of achievements are defined – High (students in a course score ≥ 60%), moderate (40% to 59%) and low (<40%).

Step II: Mapping of CLO and PO

The POs are mentioned in the Academic Programme guide (APG). For example, there are 11 POs listed for the B. Pharmacy for Batch 2019. These are reproduced below:

PO 1: The Pharmacy graduates are required to learn and acquire adequate knowledge, necessary skills to practice the profession of pharmacy with adequate knowledge and scientific information regarding basic principles of Pharmaceutical & Medicinal Chemistry, Pharmaceutics including Cosmeticology, Pharmacology, Pharmacognosy and Pharmaceutical analysis.

PO 2: The graduate should have adequate knowledge of synthesis & analysis of medicinal agents, their mode and mechanism of action, drug interactions, patient counseling and adequate technical information to be exchanged with the physician and other health professionals.

PO 3: Adequate knowledge of practical aspects of synthesis of Active Pharmaceutical Ingredients (APIs) & its intermediates and analysis of various pharmaceutical dosage forms Formulation developments &quality assurance of various pharmaceutical dosage forms including those of herbal origin as per standards of official books, WHO and other regulatory agencies like CDSCO USFDA, MHRA etc., pharmacological screening and biological standardization and in-vivo drug interactions, preparation & analysis of suitable plants material/extracts of medicinal importance for various herbal formulations, clinical studies, patient counseling leading to physical and social well-being of the patients, product detailing, marketing, distribution and selling of pharmaceutical products.

PO 4: A graduate should be able to demonstrate skills necessary for practice of a Pharmacy viz. able to synthesize, purify, identify and analyze medicinal agents, able to formulate, store,

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dispense, manufacture the pharmaceutical products and analyze the prescriptions, able to learn and apply the quality assurance principles in regulatory and ethical aspects, able to extract, purify, identify and understand the therapeutic value of herbal/crude/natural products, able to screen various medicinal agents using animal models for pharmacological activity.

PO 5: A graduate should develop the attitudes during the course which including willingness to apply the current knowledge of pharmacy in the best interest of the patients and the community, maintain high standards of professional ethics in discharging professional obligations, continuously upgrade professional information and be conversant with latest advances in the field of pharmacy to serve community better, willingness to participate in continuing education programs of PCI/AICTE/Chitkara University to upgrade the knowledge and professional skills, to help and participate in the implementation of National Health Programs.

PO 6: The graduates are required to acquire in depth knowledge of formulation, quality assurance and storage of various pharmaceutical dosage forms including herbal medicines.

PO 7: The graduates should also understand the concept of community pharmacy and be able to participate in clinical pharmacy and research.

PO 8: To understand industry relevant operations in drug discovery, development, pharmaceutical operations, quality assurance, business, market development, corporate affairs and clinical practices.

PO 9: Technology Competence: The program aims to prepare competent professionals with advanced knowledge in pharmaceutical technology for process development and industry operations.

PO 10: To develop research aptitude to acquire advanced skills in development, conduct & outcome management of research projects in optimized formulation development & standardization in time bound manner.

PO 11: To develop capacity for undertaking regulatory compliance responsibilities & entrepreneurship skills.

Now in the second step, CLOs of each course as mentioned in their course plans are mapped with these POs. High level of PO-CLO mapping is assigned weightage 3, Moderate level of PO-CLO mapping is assigned weightage 2 and low level is of weightage 1, as given in Table 2.

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Table 2: PO-CLO Mapping Weightage Strategy

PO- CLO Mapping Level	Weightage Assigned
High	3
Medium	2
Low	1

Average value of POs is calculated for each course and mapped for further use while determining the PO attainment. The weighted value for each PO against different courses is mentioned in APG

Step III: Determining direct PO Attainment levels

CLO Attainment is determined in step I and average direct PO attainment for each course as worked out in step II is mapped. (Fig.1, 2, 3 & Table 3 & 4)

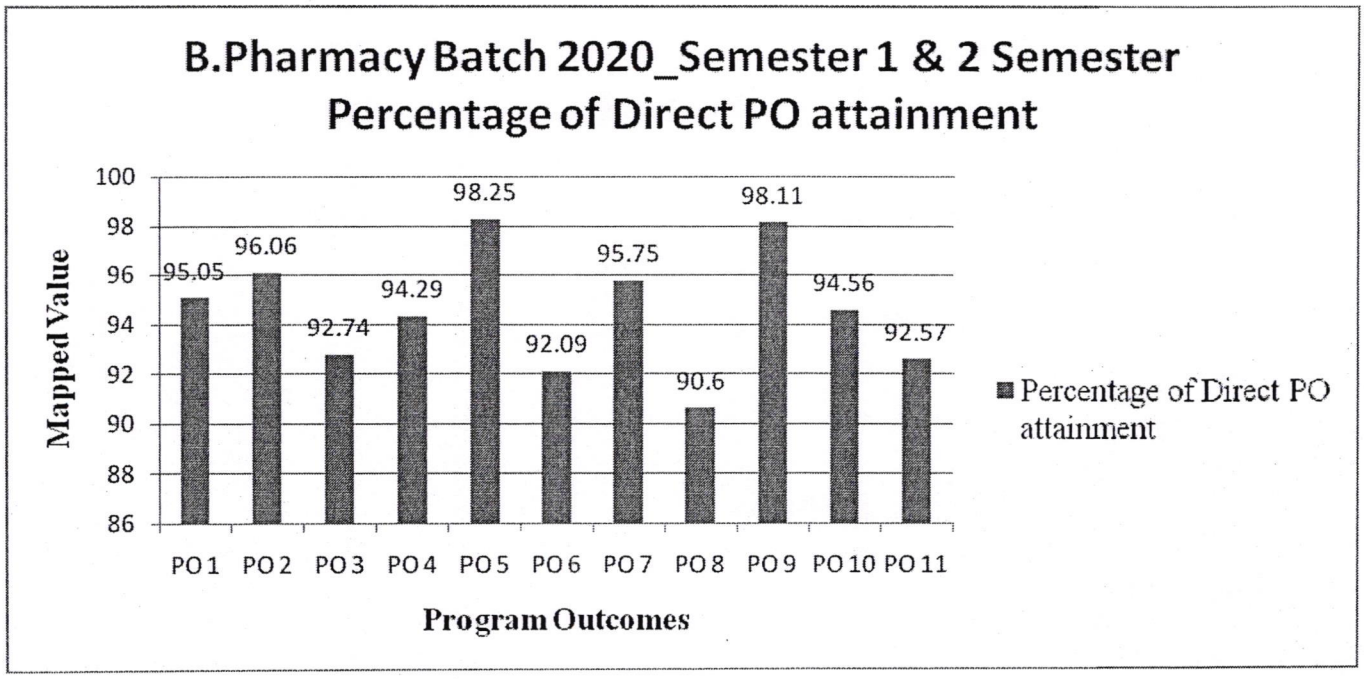

Fig 1- Direct PO attainment

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Table 3: Direct PO attainment – B. Pharmacy 1st Semester (Batch-2020)

Subject	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP101T	98	98	98	98	-	-	98	98	98	98	-
BP102T	-	97	97	97	97	97	-	-	97	97	97
BP103T	-	-	97	97	-	97	97	-	97	-	-
BP104T	98	98	98	98	-	98	-	98	-	-	-
BP105T	98	98	98	-	-	98	98	98	-	-	-
BP106RBT	61	-	61	-	-	61	-	61	-	-	-
BP106RMT	-	61	61	61	-	-	-	61	-	-	61
BP107P	99	-	99	99	99	-	99	-	99	-	-
BP108P	99	99	-	99	-	99	-	-	-	-	99
BP109P	98	98	98	98	98	98	-	98	98	98	-
BP110P	99	-	99	99	-	-	-	-	-	-	-
BP111P	96	96	96	96	96	-	96	96	-	96	96
BP112RBP	68	-	68	68	-	68	68	-	-	68	-

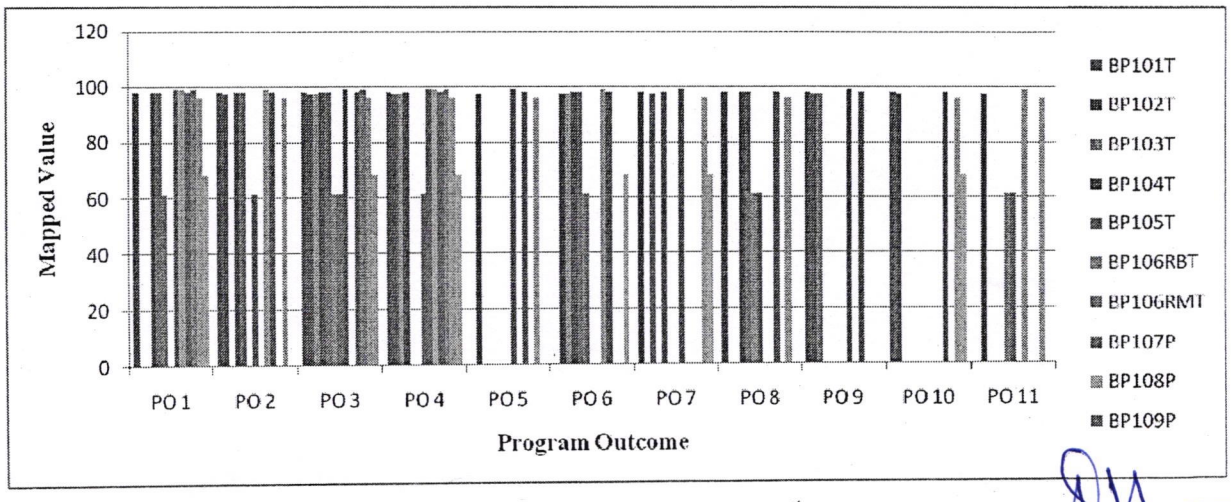

Fig 2- Direct PO attainment in B.Pharmacy 1st Semester

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Table 4: Direct PO attainment – B. Pharmacy 1st Semester (Batch-2020)

Subject	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
BP201T	99	99	-	99	-	-	99	-	-	-	-
BP202T	99	99	99	99	99	-	-	-	-	-	-
BP203T	98	98	98	98	98	-	98	98	-	-	-
BP204T	99	-	99	99	99	99	-	-	-	99	-
BP205T	97	97	-	-	97	-	-	-	97	97	97
BP207P	99	99	99	99	-	99	99	-	99	99	-
BP208P	99	99	99	-	99	-	99	-	-	-	-
BP209P	99	99	-	99	99	-	-	99	99	-	-
BP210P	99	99	99	-	99	99	99	99	-	-	99
BP206T	99	99	99	-	99	-	99	-	99	99	99

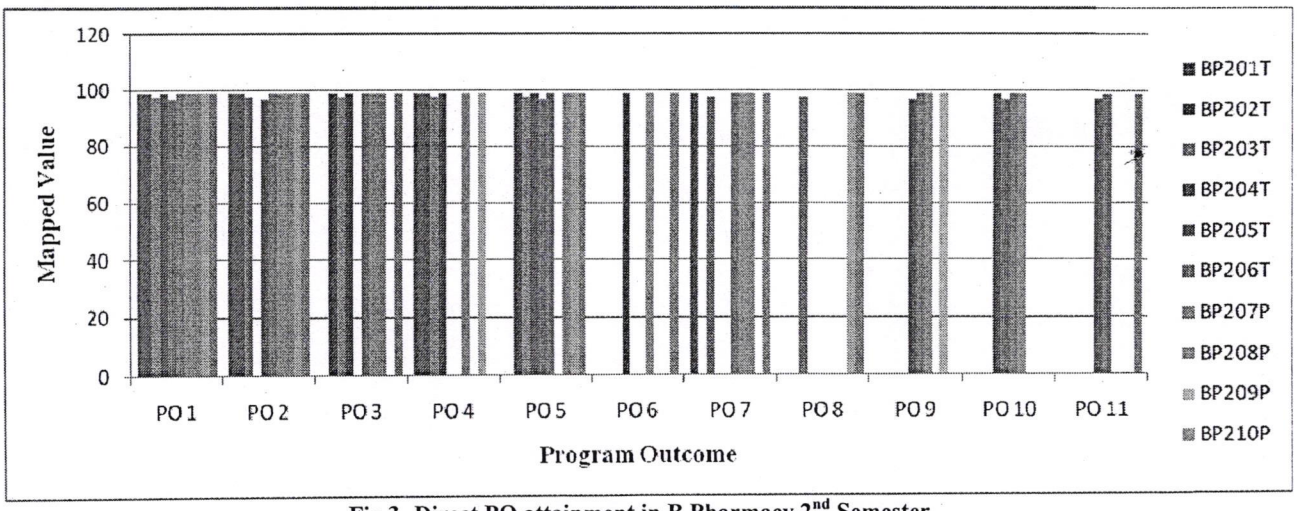

Fig 3- Direct PO attainment in B.Pharmacy 2nd Semester

The criteria for direct PO attainment are categorized in the three levels of achievement- High (More than 60%), Moderate (40%- 59%) and Low (< 40%). It is observed that all the 11 POs are achieved in High levels.

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Step IV: Determining indirect PO Attainment levels – NOT APPLICABLE

As our highest batch in 3rd year (5th Semester) and Indirect PO attainment is calculated by from the data received from alumni and employer

Step V: Determining overall PO Attainment levels - NOT APPLICABLE

As Overall PO attainment is calculated by taking average of direct and indirect PO attainment out of 3. Indirect PO attainment is calculated by from the data received from alumni and employer.

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Principal
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Course Outcome Attainment Report

Programme	*B.Pharmacy [Pharmacy]*	*Batch 2020*	
Subject	*Pharmaceutics-I Theory*	Code *BP103T*	Semester *1*

Subject Assessment: *Pharmaceutics-I Theory*

#	Tools	Task	Task-Id	Marks	Wt (%)	Weighted Marks (%)
1	Internal	1	17	25	100	25
2	External	1	18	75	100	75

Course Outcome: *Pharmaceutics-I Theory*

SNo	Course Outcome	Wt(%)
CO1	gain fundamental knowledge in preparing conventional dosage forms	20
CO2	learn about basics of pharmacopoeias available.	20
CO3	gain knowledge about various pharmaceutical dosage calculations	20
CO4	understand various techniques for the formulation and evaluation of powders and liquid dosage forms which will give them employability in pharmaceutical industries.	20
CO5	identify various pharmaceutical incompatibilities.	10
CO6	gain knowledge about various semisolid dosage forms and their evaluation will enhace the skills to perform work accordingly.	10

CO-PO Map: *Pharmaceutics-I Theory*

Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
gain fundamental knowledge in preparing conventional dosage forms	-	-	-	-	-	M	-	-	H	-	-
learn about basics of pharmacopoeias available.	-	-	H	-	-	M	-	-	L	-	-
gain knowledge about various pharmaceutical dosage calculations	-	-	-	H	-	L	-	-	M	-	-
understand various techniques for the formulation and evaluation of powders and liquid dosage forms which will give them employability in pharmaceutical industries.	-	-	-	M	-	H	L	-	-	-	-
identify various pharmaceutical incompatibilities.	-	-	-	H	-	L	M	-	-	-	-
gain knowledge about various semisolid dosage forms and their evaluation will enhace the skills to perform work accordingly.	-	-	M	H	-	-	L	-	-	-	-

Course Outcome Contribution in Each Question

Tool	Task No.	QNo	Marks	DL	BT Level	Percentage Contribution of Course Oucome
Internal	1	1	25	Easy	Remembering	CO1 [020],CO2 [20],CO3 [20],CO4 [20],CO5 [10],CO6 [10],
External	1	1	75	Easy	Remembering	CO1 [20],CO2 [20],CO3 [20],CO4 [20],CO5 [10],CO6 [10],

CO-Assessment-Marks: *Pharmaceutics-I Theory*

We would consider 40% weightage for Internal Marks and 60% weightage for external marks for calculating attainment level of Student Course Outcome. In case of either only internal or external components, we would consider 100%.

CO1: gain fundamental knowledge in preparing conventional dosage forms

#	RollNo	Internal-1[5]	External-1[15]	Total [20]	MO(%)	Scale
1	2017981001	4.6	12.8	17.4	87	3
2	2017981003	4.4	12.2	16.6	83	3
3	2017981004	4.4	13	17.4	87	3
4	2017981005	4.4	12.4	16.8	85	3
5	2017981006	4.6	14	18.6	93	3
6	2017981007	4.4	11.8	16.2	81	3
7	2017981008	4.6	10.6	15.2	76	3
8	2017981009	4.6	10.2	14.8	74	3
9	2017981010	4.2	11.6	15.8	79	3
10	2017981011	4.4	10.2	14.6	73	3
11	2017981012	4.2	10.6	14.8	74	3
12	2017981013	3.2	10.6	13.8	69	3
13	2017981014	4.2	9.6	13.8	69	3

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50	2017981054	2.3	5.5	7.8	78	3
51	2017981055	2.2	5.9	8.1	81	3
52	2017981056	2.3	5.6	7.9	79	3
53	2017981057	2.1	5	7.1	71	3
54	2017981058	2.2	5.8	8	80	3
55	2017981059	2.3	6.2	8.5	85	3
56	2017981060	2.2	5.7	7.9	79	3
57	2017981061	2.1	5.4	7.5	75	3
58	2017981063	0	0	0	0	1

CO Attainment on Scale of 3	Percentage of Students Scored above 60%
2.9	91.38

Attainment on Scale of 3	Percentage Attainment
2.90	96.67

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Course Closure Report

Programme	*B.Pharmacy [Pharmacy]*	*Batch 2020*	
Subject	*Pharmaceutics-I Theory*	Code *BP103T*	Semester *1*

CO Attainment Score and PO Map on Scale of 3

Course Outcome	$AS_{CO(3)}$	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
gain fundamental knowledge in preparing conventional dosage forms	2.9	--	--	--	--	--	2	--	--	3	--	--
learn about basics of pharmacopoeias available.	2.9	--	--	3	--	--	2	--	--	1	--	--
gain knowledge about various pharmaceutical dosage calculations	2.9	--	--	--	3	--	1	--	--	2	--	--
understand various techniques for the formulation and evaluation of powders and liquid dosage forms which will give them employability in pharmaceutical industries.	2.9	--	--	--	2	--	3	1	--	--	--	--
identify various pharmaceutical incompatibilities.	2.9	--	--	--	3	--	1	2	--	--	--	--
gain knowledge about various semisolid dosage forms and their evaluation will enhace the skills to perform work accordingly.	2.9	--	--	2	3	--	--	1	--	--	--	--

Course Attainment Analysis

Action Plan

Signature
Name
(Course Coordinator)

Signature
Name
(Subject Expert)

Signature
Name
(DAAC Chairperson/Coordinator)

Note : To be filed in the Course File and copy to be filed in Department Office file.

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