2.6.2(1) Methodology for CO-PO Attainment for all Programmes



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The process for CO-PO attainment of the following academic batches-B.Pharm

(From R17onwards)

Note: The following CO-PO assessment methods are followed for all theory and practical courses of 2017-2021; 2018-2022; 2019-2023 and 2020-2024

I: CO attainment

All faculty members will prepare the average CO attainment percentage for their respective courses using the following methodology

➤ The evaluation of course outcome is based on the internal and external examination assessment.

The internal examination consists of mid examinations, assignments, practical mid examinations, seminars and project internal evaluation. The university external examination consists of Theory exam, practical exams and project viva voce.

The following procedure is used for CO attainment calculation:

CO Attainment based on University exam (CU)

For every theory course, 40% is taken as the bench-mark value. Number of students scoring more than the bench-mark value in each subject is used to compute the attainment level as defined below:

% of students >=bench mark	Attainment level
60	1
70	2
80	3

CO Attainment based on internal exam (CI)

Bench-mark value in each subject is taken as 50% and attainment is computed based on the number of students scoring more than the bench-mark value as defined below:

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% students >=bench mark	Attainment level
60	reference and 1-11 leading the
70	2
80	remarkable of the 3 gain of the action of the said

3. Overall CO attainment:

80% weight age is given to University examination and 20% weightage to Internal examinations.

Overall CO attainment = 0.8* CU + 0.2* CI

Table 1:

										Ch	eeryal (V), K	(eesara (M)	, Medchal	(D)-5013	01						,		<u> </u>			
-	e: B.Pharmacy																									
Batch: 20						Ir	ternal l	:xam-l			4.414	K 1977).			739	nternal	Exam-II				(n = 2 %		100			
	ode: POC-I (TH			C01			CO2			CO3			CO3				CO4			CO5	113,114		bj		nment	JNTL
rear: II	Sem: I	CO Max Marks	04	8.5M	LAND	28.00	9.5M	u.aun		6M	.10		6	10		024.2	9.5	ru.n	24.2	9.5	FU. 2)	10 M	10 M	5 M	5 M	Grad
Section:	*B*	QNo	-	IA (7.5)	1+211)		,4B(7.5	m+Zmj	01	Q3(5M+	·IJ	-	,1.b (5M-	+ IJ		-	B,4A (7	JM+2)		B,4B(7.	3M+ZJ	OBJI	OBJII	ASSI	ASSII	100
S.No	HT No	Name	Obt. Mar	Max Mar.	7.	Obt. Mar	Max Mar.	%	Obt. Mar	Max Mar.	%	Obt. Mar	Max Mar.	7.	CO3	Obt. Mar	Max Mar.	7.	Obt. Mar	Max Mar.	7.	Obt. Mar	Obt. Mar	Obt. Mar	Obt. Mar	
1		er ainen	2	8.5	23.529	6	9.5	63.158	1	6	16.67	5	6	83.33	50	2	9.5	21.05	4	9.5	42.11	8	5	le const		
2			8.5	8.5	100	4.5	9.5	47.368	1	6	16.67	6	6	100.00	58.333	7	9.5	73.68	2	9.5	2105	9	7			
3			4	8.5	47.059	8.5	9.5	89.474	1	6	16.67	1	6	16.67	16.667	6	9.5	63.16	7	9.5	73.68	6.5	5			
4			4.5	8.5	52.941	9.5	9.5	100	1	6	16.67	1	6	16.67	16.667	8.5	9.5	89.47	4.5	9.5	47.37	6	5			
5			6	8.5	70.588	2	9.5	21,053	5	6	83.33	1	6	16.67	50	8.5	9.5	89.47	4.5	9.5	47.37	6	4			
6		190	4	8.5	47.059	7	9.5	73.684	1	6	16.67	1	6	16.67	16.667	8.5	9.5	89.47	4.5	9.5	47.37	6	4			
7			6	8.5	70.588	7	9.5	73.684	1	6	16.67	1	6	16.67	16.667		9.5	94.74	4.5	9.5	47.37	6	4.5			
8			7	8.5	82.353	15	9.5	15,789	5	6	83.33	6	6	100.00	91.667		9.5	47.37	7	9.5	73.68	6.5	4			
9			7	8.5	82.353	15	9.5	15.789	6	6	100.00	6	6	100.00	100		9.5	47.37	4.5	9.5	47.37	6.5	5			
10			7	8.5	82.353	6.5	9.5	68.421	1	6	16.67	1	6	16.67	16.667	-	9.5	89.47		9.5	47.37	6.5	4			
11			7	8.5	82.353	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	63.16	7	9.5	73.68	6	5			
12			7	8.5	82.353	6	9.5	63,158	1	6	16.67	1	6	16.67	16.667		9.5	89.47	_	9.5	47.37	6	7	QUIT TO SE		
13			3	8.5	35.294	5	9.5	52.632	1	6	16.67	1	6	16.67	16.667		9.5	63.16	4	9.5	42.11	6	4			
14			5	8.5	58.824	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	89.47	4.5	9.5	47.37	6	3			
15			6	8.5	70.588	15	9.5	15.789	5	6	83.33	1	6	16.67	50		9.5	68.42	4.5	9.5	47.37	6.5	4			
16			7	8.5	82.353	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	89.47	4.5	9.5	47.37	6	5			
17			7	8.5	82.353	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	84.21	4.5	9.5	47.37	6	4.5			
18			7	8.5	82.353	15	9.5	15.789	4	6	66.67	5	6	83.33	75		9.5	52.63	2	9.5	21.05	7.5	6			
19			5	8.5	58.824	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	63.16	6	9.5	63.16	5	4			
20			6	8.5	70.588	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	89.47	3.5	9.5	36.84	5.5	5			
21			4	8.5	47.059	4	9.5	42.105	15	6	25.00	200	6	16.67	20.833		9.5	52.63	2	9.5	21.05		-			
22		and built	6	8.5	70.588	15	9.5	15.789	4	6	66.67	rd.	6	16.67	41.667	-	9.5	63.16 84.21	5.5	9.5	57.89 42.11	6.5	6.5			- CONTROL OF THE PARTY OF THE P
23			8	8.5	94.118	4	9.5	42.105	1	6		1	-	16.67	16,667 66,667		9.5	84.21	-	9.5	42.11	6.5	6			
24			5	8.5	58.824	15	9.5	15.789	7	6/4	16.67	6 1	6	16.67	16.667	A	9.5	63.16	3	9.5	31.58	5.5	7			
25			4.5 6	8.5 8.5	52.941	2	9.5 9.5	21.053	1	6	66.67	1	6	16.67	41.667	-	9.5	73.68	4.5	9.5	47.37	6	7.5			22 5 3 3 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
26			6	8.5	70.588	2	9.5	21.053	5	6	83.33	19	6	16.67	41.667		9.5	84.21	4.5	9.5	47.37	7	8			

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- 1. Fill Table 1 with CO no, course outcome and course outcomes knowledge level (CKL) of a particular course.
- 2. In Table 2&3, Fill CKL values and PKL values in respective columns.
- 3. In **Table 2**, Subtract CKL value(c) PKL value(p) (Values of 0, 1 and 2 are considered as STRONG, 3,4 are considered as MEDIUM, and 5 is considered as LOW correlation).
- 4. Don't consider the sign value (+ or -). In case, if a course correlates with Non-Cognitive PO correlation can be S, M and L depending on the course.
- 5. Based on the value, correlation value taken as Strong (S), Medium (M) or Low (L) and fill the **Table 3.**
- 6. Then Fill **Table 4** with respective numerical values by considering Strong (S=3), Medium (M=2) and Low (L=1).
- 7. Calculate the sum of average of each CO contributing to PO and report in Table 4. (B)
- **8.** All the faculty has to prepare the following tables for each course and submit to the respective batch in charges.

Table 1: Course Outcome of selected course

COURS	SE OUTCOMES: At the end of the course, the student will be abl	e to
CO. No.	COURSE OUTCOME	Course Outcomes Knowledge Level (CKL)
C16.1	Explain the structure and activity of organic molecules, aliphatic hydrocarbons, alkenes and alkynes.	K2
C16.2	Explain about aromatic hydrocarbons and halogenatedarenes.	K2
C16.3	Summarize the nomenclature, preparation, characteristic reaction mechanisms of aliphatic halogen compounds alcohols, ethers and phenols.	K2
C16.4	Summarize the nomenclature, preparation, characteristic reaction mechanisms of carbonyl compounds, carboxylic acids and their derivatives.	K2
C16.5	Summarize the nomenclature, preparation, chemical reactivity and applications of nitrogen containing compounds.	K2





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Table 2: CO attainment of selected course

	on Leve S		CO attair	assessment	rnal exam	CO attainme	nt from Universi	ity examination	co
Course code	Course name	Course outcomes	CO Attainment (%)	CO Attainment level (a)	A - Internal Exam attainment level (0.20*a)	CO Attainment (%)	CO Attainment level (b)	B - University Examinations attainment level (0.80*b)	Attainment (Internal+ University exam) A+B
		CO1							
	Aff brait	CO2	(1)	(x) 3000		rija. Enusi	Attos Bais/	sainny beas	1.0
		CO3						Table 5.	orli
		CO4			4. 2 i				
	819 C 4V	CO5	war gun au	F. B. A. P. S. A.	153 7 175AH 129 IB	ा। जनसङ्ख्य	ar bliske Schli	BEATTER TOP	0
Overal	l CO atta	inment					.:1111)	Voltene (13	173)

Note: 80% weight age to University examination and 20% weight age to Internal exams the attainment calculations will be (80% of University level) + (20% of Internal level)

II. PO attainment

- Step1: For each Program Outcome the highest possible Blooms Knowledge level is assigned (PKL). For each course, course outcomes are drafted along with knowledge levels (CKL).
- Step 2: Course articulation matrix M(c, p) is defined as absolute value of the difference between CKL(c) PKL(p).

$$M(c, p) = CKL \ value(c) - PKL \ value(p)$$

- Values of 0, 1 and 2 are considered as STRONG, 3,4 are considered as MEDIUM, and 5 is considered as LOW correlation.
- Based on the value, correlation value taken as Strong (S), Medium (M) or Low (L).
- In case, if a course correlates with Non-Cognitive PO correlation can be S, M and L depending on the course.
- For Non-cognitive POs (PO2, PO5 and PO8) MEDIUM correlation is suggested.

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Table 3: Course Articulation Matrix of selected course

CKL (C16.1) – PKL (PO4) = -3
Defined COs KL is less than the
Expected PO KL
S: {-1}, M: {-2, -3}, L: {-4, -5}

	CKL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PKL		2	M	4	5	M	2	2	M	3	5	3
C16.1	2	S		S	M		S	S		S	M	S
C16.2	2	S		S	M		S	S		S	M	S
C16.3	2	S	COM	S	M		S	S		S	M	S
C16.4	2	S		S	M		5	S		S	M	S
C16.5	2	S		S	M	- 1 2 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -	S	S		S	M	S

CKL (C16.1) – PKL(PO1) = 0 Defined COs KL is equal to Expected PO KL

CKL – Course outcome Knowledge level



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Table 2: Course articulation matrix of selected course

CO	CKL	PO1 (COG)	PO2 (NON-	PO3 (COG)	PO4 (COG)	PO5 (NON-	PO6 (COG)	PO7 (COG) &	PO8 (NON-	PO9 (COG)	PO10 (COG)	PO11 (COG)
	•		COG)			COG)		(NON- COG)	COC)		& (NON- COG)	
PKL	+ 13 - 1	→ K2	- LKY	K4, K5	K5, K6	7645 LO	K2	K2(COG)	₩0 <u>,</u> 14	K3,K4,K5	K5 (COG)	K3
C16.1	K2	S(2- 2=0)		S(4- 2=2)	M(5- 2=3)		S(2- 2=0)	S(2-2=0)		S(3-2=1)	M(5-2=3)	S(3-2=1)
C16.2	K2	S(2- 2=0)	m 0 (<u>s</u> trixe	S(4- 2=2)	M(5- 2=3)		S(2- 2=0)	S(2-2=0)	- February Decision	S(3-2=1)	M(5-2=3)	S(3-2=1)
C16.3	K2	S(2- 2=0)		S(4- 2=2)	M(5- 2=3)		S(2- 2=0)	S(2-2=0)		S(3-2=1)	M(5-2=3)	S(3-2=1)
C16.4	K2	S(2- 2=0)	preved hy a rengrizer 13	S(4- 2=2)	M(5- 2=3)	mancedy 2	S(2- 2=0)	S(2-2=0)	100365 706 3 W HT 33	S(3-2=1)	M(5-2=3)	S(3-2=1)
C16.5	K2	S(2- 2=0)		\$(4- 2=2)	M(5- 2=3)	7 7 9 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	S(2- 2=0)	S(2-2=0)		S(3-2=1)	M(5-2=3)	S(3-2=1)

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PKL – Program outcome Knowledge Level

PKL is expected by NBA

CKL is based on course outcome defined and approved by the Course Coordinator and Program Advisory Board

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Table 4: Course Articulation Matrix (CO-PO Matrix) with numeric values

PKL	CKL	PO1 2	PO2 M	PO3 4	PO4 5	PO5	PO6	PO7	PO8 M	F09 3	-P010 5	are repla	ole 3 S, M &L aced by values M=2& L=1
C16.1	2	3		3	2		3	3		3	2	3	
C16.2	2	3		3	2		3	3		3	2	3	
C16.3	2	3		3	2		3	3		3	2	3	
C16.4	2	3		3	2	Coan	3	3	and Pro	3	2	3	
C16.5	2	3		3	2		3	3		3	2	3	,
C1 Average	V	3	2 25	3	2		3	3		3	2	3	



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CO	CKL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C14	Average	3	2	2	2	1	3	3	2	2.6	2	3 –(B)
				7 7 11 11 11	Secultarity -	1 .: 2 . 12 0	7 1)-0, stv.,	Marian Co.	mut studie	943 DESTIN	120 101	

Course Name	Course				C	O-PO	Correl	ation N	Matrix			
B.PHARMACY FIRST YEAR/I	code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
SEM SEM								audonio contract	0500001710000	giodived a la		mai kuji di turgu
DISPENSING		9	6	6	6	3	9	9	6	7.8	6	9A*B
AND	,						in a			Char		=
GENERAL						10.7	1.403	a trick i torije		ana :	s danu	
PHARMACY	C14	nemail	nis 19	dova a	er Dr. X	fution, r	ulatio	iba sa	an eng	r9. 01:		

Batch in charge have to calculate direct attainment POs by following method.

The direct attainment of POs for all courses is determined by calculating weighted average using the following equation =

Average of $\{(A^*B) \text{ of all courses}\}$

Average correlation values of CO-PO matrix (B) of all courses

• From Direct PO attainment 80% weightage is taken.



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Step 3:Program me articulation matrix

Programme articulation matrix of all courses of academic batch is prepared by taking average correlation value of CO-PO matrix of respective course (Batch In charge has to prepare Programme articulation matrix of all courses of academic batch)

Table 5: Programme articulation matrix

Year/Sem	Course	Course				C	O-PO	Correl	ation v	alue			
	Name	Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
		ternizi as	i laggam						Jaran	65	18011-7	s duo!	
104 1/10	1 604	809 70	1 00	# [80	1 10	TEO	1 10	FITT		205 1	DAM	MARTS	
				11.5	- 1						HAI	17243	
			A									-tymis	

Step 4: Direct attainment of POs

In Programme articulation matrix, Class average attainment level of respective course

- (A) is multiplied by Average correlation value of CO-PO matrix of respective course
- (B). The same method is adopted for all courses. It is explained in the following steps.

Example:

S. No.	Course name	Course code	No. of Students appeared	No of Students Passed	% of students >=bench mark	Attainment level
1.	DISPENSING AND GENERAL PHARMACY	C14	87 4	78 0% thomas	90 . Of Parid man'l *	3—(A)

% of students who have secured greater than or equal to the fixed bench mark (40%) in university examination is taken as Class average attainment level of respective course (A).

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Table 7: In direct attainment of POs

Acade mic batch	Total Stud ents	Surve y Detai ls	Total No of Surve ys	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1
		PES												
Indirec	t attain	ment lev	el			xira	to 09	Tov 14	rege.	V.moi	(a . A clamo			
		AS							2mm.:	110	n			
Indirec	t attaini	ment lev	el				(6)	178)		ATTA	1035	ki		
		ES												
Indirect	t attain:	nent lev	el	ý richt	. ×9.		ina 10 banda	nura c also i		rain#	a the n	bug Ford Since to	cosse original	

Step 6: Overall PO attainment

From Direct PO attainment 80% weightage is taken. From indirect PO attainment 20 % weightage is taken which comprises of 10% of Programme exit survey; 5% Alumni survey and 5% of Employer survey. Overall weighted PO attainment is calculated by combining direct and indirect attainment levels.

Overall PO attainment= (Direct attainment level*0.8) + (PES attainment level*0.1+AS attainment level*0.05+ES attainment level*0.05)



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Table 6: Direct attainment of POs

						(A*B) of c	ourse	S		7	
Course Name	Course Code	P01	P02	P03	P04	POS	P06	PO7	P08	P09	PO10	P011
							<u>*</u> 214					
Average of {(A*B) of all cour	ses}											
Average correlation values (B) of all cour							ŽA.					
DIRECT ATTAIN	MENT											
DIRECT ATTAINME	NT (80%)					3.791	l i porti	57331	3 13	1170		

Step 5: Indirect attainment of POs of all courses

Indirect attainment of POs is calculated by Programme exit survey, Alumni survey and Employer survey. From indirect PO attainment 20 % Weightage is taken which comprises of 10% of Programme exit survey, 05% Alumni survey and 05% Employer survey.



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Table 9: Over all PO attainment

PO	ELOA	ALOA
PO1		
PO2		
PO3		
PO4		
PO5		
PO6		
PO7		
PO8		
PO9	nargett state	
PO10	or officeapers of con-	
PO11		



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Table 8: Over all PO attainment

PO ATTAINMENT	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
DIRECT ATTAINMENT (80%)	NOW, IN		100								
PROG EXIT SURVEY (10%)						109					
EMPLOYER SURVEY (05%)		2-1	- Freeze			\$1,11			,		
ALUMNI SURVEY (05%)			(1-0)			2699					
OVERALL PO ATTAINMENT						1179					

Step 7: Evaluation of POs

Expected level of attainment (ELOA) for Programme outcomes is analyzed and decided by PAB based on previous academic batches results and attainments. Actual level of attainment (ALOA) for Programme outcomes is reported.



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CO-PO attainment for Pharm D & Pharm D (PB)Programme (2014-2020; 2015-2021; 2016-2022)

I: Average CO attainment

All faculty members will prepare the average CO attainment percentage for their respective courses using the following formula:

A. Average CO attainment = No. of students passed / No. of students appeared *100

Overall CO attainment Level

- **A.** Attainment Level 1: ≤60% of students getting more than 50% marks out of relevant maximum marks
- **B.** Attainment Level -2: 61-80% of students getting more than 50% marks out of relevant maximum marks
- C. Attainment Level -3: 81-100% of students getting more than 50% marks out of relevant maximum marks.

Bench mark 40% set to calculate average co attainment to assess students passed in first attempt only

Sample average CO attainment of selected course

S. No.	Code	Course	No. of Students appeared	No of Students Passed	Average Cours Outcomes Attainment	Course Outcomes Attainment Level
1.	C16	Pharmaceutical	87	75	86	3—(A)
. 11		organic chemistry-I	A second	Callane as	a lekitologica stilivi Ka Çültü	Medicand Pilitinskii Medicand Load

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II. PO attainment

- **Step1**: For each Programme Outcome the highest possible Blooms Knowledge level is assigned (PKL). For each course, course outcomes are drafted along with knowledge levels (CKL).
- Step 2: Course articulation matrix M(c, p) is defined as absolute value of the difference between CKL(c) PKL(p).

$$M(c, p) = CKL \ value(c) - PKL \ value(p)$$

- Values of 0, 1 and 2 are considered as STRONG, 3,4 are considered as MEDIUM, and 5 is considered as LOW correlation.
- Based on the value, correlation value taken as Strong (S), Medium (M) or Low (L).
- In case, if a course correlates with Non-Cognitive PO correlation can be S, M and L depending on the course.
- For Non-cognitive POs (PO2, PO5 and PO8) **MEDIUM** correlation is suggested.
- 1. Fill Table 1 with CO no, course outcome and course outcomes knowledge level (CKL) of a particular course.
- 2. In Table 2&3, Fill CKL values and PKL values in respective columns.
- 3. In **Table 2**, Subtract CKL value(c) PKL value(p) (Values of 0, 1 and 2 are considered as STRONG, 3,4 are considered as MEDIUM, and 5 is considered as LOW correlation).
- 4. Don't consider the sign value (+ or -). In case, if a course correlates with Non-Cognitive PO, correlation can be S, M and L depending on the course.
- 5. Based on the value, correlation value taken as Strong (S), Medium (M) or Low (L) and fill the **Table 3.**
- 6. Then Fill **Table 4** with respective numerical values by considering Strong (S=3), Medium (M=2) and Low (L=1).
- 7. Calculate the sum of average of each CO contributing to PO and report in Table 4. (B)
- 8. All the faculty has to prepare the following tables for each course and submit to the respective batch in charges.

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Table 2: Course articulation matrix of selected course

CO	CKL	PO1 (COG)	PO2 (NON-COG)	PO3 (COG)	PO4 (COG)	PO5 (NON-COG)	PO6 (COG)	PO7 (COG) & (NON-COG)	PO8 (NON- COG)	PO9 (COG)	PO10 (COG) & (NON-COG)	PO11 (COG)
PKL		► K2	-	K4, K5	K5, K6		K2	K2(COG)	- 1	K3,K4,K5	K5 (COG)	КЗ
C16.1	К2	S(2-2=0)		S(4-2=2)	M(5-2=3)		S(2-2=0)	S(2-2=0)	- [S(3-2=1)	M(5-2=3)	S(3-2=1)
C16.2	К2	S(2-2=0)		S(4-2=2)	M(5-2=3)		S(2-2=0)	S(2-2=0)	-	S(3-2=1)	M(5-2=3)	S(3-2=1)
C16.3	K2	S(2-2=0)		S(4-2=2)	M(5-2=3)		S(2-2=0)	S(2-2=0)	- T	S(3-2=1)	M(5-2=3)	S(3-2=1)
C16.4	K2	S(2-2=0)		S(4-2=2)	M(5-2=3)		S(2-2=0)	S(2-2=0)		S(3-2=1)	M(5-2=3)	S(3-2=1)
C16.5	К2	S(2-2=0)		S(4-2=2)	M(5-2=3)	-	S(2-2=0)	S(2-2=0)		S(3-2=1)	M(5-2=3)	S(3-2=1)



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8. All the faculty has to prepare the following tables for each course and submit to the respective batch in charges.

Table 1: Course Outcome of selected course

CO.No.	COURSE OUTCOME	Course Outcomes Knowledge Level (CKL)
C16.1	Explain the structure and activity of organic molecules, aliphatic hydrocarbons, alkenes and alkynes.	K2
C16.2	Explain about aromatic hydrocarbons and halogenatedarenes.	K2
C16.3	Summarize the nomenclature, preparation, characteristic reaction mechanisms of aliphatic halogen compounds alcohols, ethers and phenols.	K2
C16.4	Summarize the nomenclature, preparation, characteristic reaction mechanisms of carbonyl compounds, carboxylic acids and their derivatives.	K2
C16.5	Summarize the nomenclature, preparation, chemical reactivity and applications of nitrogen containing compounds.	K2



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CKL – Course outcome Knowledge level

PKL – Programme outcome Knowledge Level

PKL is expected by NBA

CKL is based on course outcome defined and approved by the Course Coordinator and Program Advisory Board

Table 4: Course Articulation Matrix (CO-PO Matrix) with numeric values

PKL	(CKL	PO1 2	PO2 M	PO3 4	PO4 5	PO5	P06	PO7	PO8 M	PO9 3	-P010 5		ole 3 S.M&L are I by values i. e 2& L=1
C16.	14 /	2	3	un rum	3	2		3	3		3	2	3	
C16.2	2	2	3		3	2		3	3		3	2	3	
C16.	3	2	3		3	2		3	3		3	2	3	
C16.	4	2	3	GC 560	3	2	n vara Amac	3	3	51R-511	3	2	3	
C16.	5	2	3	S CONTRACTOR OF THE SECOND	3000	2	mib Af	3	3	(x.8.P)	3	2	3	
	C16 'G (E	3)	18	1	3	2		3	3		3	2	3	

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Table 3: Course Articulation Matrix of selected course

CKL (C16.1) – PKL (PO4) = -3

Defined COs KL is less than the

Expected PO KL

S: {-1}, M: {-2, -3), L: {-4, -5}

	CKL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PKL	r (co	2	M	4	5	М	2	2	M	3	5	3
C16.1	2	Ś	aa abb	S	M	Contra	Suc	S	and P	S	M	S
C16.2	2	S		S	М	042	S	S		S	M	S
C16.3	2	S	V6	S	M		S	S		S	M	S
C16.4	2	S		S	M		8	S		S	M	S
C16.5	2	S		S	M		S	S		S	M	S

Total and Market

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Course Name	Cours	70			C	0-PO	Correl	ation 1	natrix		a y land	以下的 种。0
B.PHARMAC Y FIRST YEAR/I SEM	e code	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO11
DISPENSING AND GENERAL PHARMACY	C14	9	6	6	6	3	9	9	6	7.8	6	9A* B

The above values came from multiplying A with B of selected course, the following tables given for reference

S. No.	Code	Course	No. of Students appeared	No of Students Passed	Average CO attainment	Average CO attainment level
1.	C14	DISPENSING AND GENERAL PHARMACY	87	78	90 Continued the Parkets and and the Continued to the con	3—(A)

СО	CKL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C14	Average	3	2	2	2	1 /100g	3	3	2	2.6	2	3 –(B)
							1-92 17		Laft ENERGY	Liberials	es I il a	and the

> Batch in charges have to perform the following steps progressively

Batch in charge have to calculate direct attainment POs by following method.

The direct attainment of POs for all courses is calculated by using the following equation =

Average of {(A*B) of all courses}

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From the above analysis, batch in charge has to prepare consolidated document of Programme articulation matrix of all courses of that batch.

Step 3:Programme articulation matrix

Programme articulation matrix of all courses of academic batch is prepared by taking average correlation value of CO-PO matrix of respective course (Batch In charge has to prepare Programme articulation matrix of all courses of academic batch)

Table 5: Programme articulation matrix

Year/Sem	Course					C	O-PO	Correl	ation v	alue			
	Name	Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
	250	eperines e é a	and a	latenia	Holl and	17 30 A 17 A	Sections	te 31 dii		Jan de la constante de la cons	atomic score		<u>wang</u> at
1.00	og/197v			W. 90	jgerrye, A	10	65	Per	-07	1	opriop	O Jabe	5

PO attainment has two processes,

- 1. Direct attainment of POs (Through COs and CO-PO correlation matrix)
- 2. Indirect attainment of POs (Through Programme Exit Survey, Alumni Survey and Employer Survey).

Step 4: Direct attainment of POs

In Programme articulation matrix, Average CO attainment level of respective course (A) is multiplied by Average correlation value of CO-PO matrix of respective course (B). The same method is adopted for all courses. It is explained in the following steps.





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	Total Stude nts	Survey Details	Total No of Survey s	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
		PES	ieninos (16)	SPA)										
Indirect	attainme	nt level		,				2gi 3 : 1 611a	alt sily					
į	104	AS	3 3	64		3	3	(A						
Indirect	attainmer	ıt level												
		ES								(sosur	o Hell	r (8* A)) To su	With A A
Indirect	attainmer	nt level							04 ()	25.7700	s He To	(8)) 19,5-3	A



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Average correlation values of CO-PO matrix (B) of all courses

From Direct PO attainment 80% weightage is taken.

			(A*B) of courses												
Course Name	Course Code	Avera ge CO attain ment level(A)	PO1	P02	PO3	P04	POS	PO6	PO7	PO8	PO9	PO10	P011		
					1										
				-											
Average of {(A*B) of all cours	es}										100				
Average correlation values (B) of all cours		natrix								10	rol l	riessis	fields 7		
DIRECT ATTAIN		-													
DIRECT ATTAINME	NT (80%)														

Step 5: Indirect attainment of POs of all courses

Indirect attainment of POs is calculated by Programme exit survey, Alumni survey and Employer survey From indirect PO attainment 20 % weightage is taken which comprises of 10% of Programme exit survey, 05% Alumni survey and 05% Employer survey.



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Step 6: Overall PO attainment

From Direct PO attainment 80% weightage is taken. From indirect PO attainment 20 % weightage is taken which comprises of 10% of Programme exit survey; 5% Alumni survey and 5% of Employer survey. Overall weighted PO attainment is calculated by combining direct and indirect attainment levels.

Overall PO attainment= (Direct attainment level*0.8) + (PES attainment level*0.1+AS attainment level*0.05+ES attainment level*0.05

Overall PO attainment

PO ATTAINMENT	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
DIRECT ATTAINMENT (80%)							1 808				
PROG EXIT SURVEY (10%)							POJE				
EMPLOYER SURVEY (05%)	1,3-10						THE				
ALUMNI SURVEY (05%)			14				× ×				
OVERALL PO ATTAINMENT											



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Step 7: Evaluation of POs

Expected level of attainment (ELOA) for Programme outcomes is analyzed and decided by PAB based on previous academic batches results and attainments. Actual level of attainment (ALOA) for Programme outcomes is reported.

РО	ELOA	ALOA
PO1	8493 × 68 0#1	2542215-1152
PO2		
PO3		
PO4		
PO5		
PO6		
PO7		
PO8		
PO9		
PO10		
PO11		



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The process for CO-PO attainment of the following academic batches- M.Pharmacy (From R17 onwards)

Note: The following CO-PO assessment methods are followed for all theory and practical courses of M. Pharmacy (From 17 onwards)

I: CO attainment

All faculty members will prepare the average CO attainment percentage for their respective courses using the following methodology

> The evaluation of course outcome is based on the internal and external examination assessment.

The internal examination consists of mid examinations, assignments, practical mid examinations, seminars and project internal evaluation. The university external examination consists of Theory exam, practical exams and project viva voce.

The following procedure is used for CO attainment calculation:

CO Attainment based on University exam (CU)

For every theory course, 40% is taken as the bench-mark value. Number of students scoring more than the bench-mark value in each subject is used to compute the attainment level as defined below:

% of students >=bench mark	Attainment level
60	1
70	2
80	3

CO Attainment based on internal exam (CI)

Bench-mark value in each subject is taken as 50% and attainment is computed based on the number of students scoring more than the bench-mark value as defined below:

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% students >=bench mark	Attainment level
60	
70	2
80	Thompson ON-O 3 provide as a record

3. Overall CO attainment:

80% weightage is given to University examination and 20% weightage to Internal examinations.

Overall CO attainment = 0.8* CU + 0.2* CI

Table 1:

								_		Cheery	al (V), Keesa	ra (M), Med	Ichal (D)-	01301											
	e: M.Pharmacy											-							L	L					
Batch: 20						nternal		(Subjec	tive)						Interna	Exam-	II (Subje	ctive)					age of		100000000000000000000000000000000000000
	ode: POC-I(TH			CO1		in halida	CO2			CO3			CO3		21212		CO4		Addis la	CO5	delate la ba		11 & 1 lar	JNTUH	JNTUH
rear: I	Sem: I	CO Max Marks	0.0000	8.5M		Burth	9.5M		1000	6M	99950431		6				9.5			9.5	Real Property		5 M	Grade	Percentag
		Q No	1000000						2000						200000			,		100 463.5			VG	100	100
			Obt.	Мак		Obt.	Мак		Obt.	Max		Obt.	Max			Obt.	Мак		Obt.	Max		Obt.		0.000	4 0 5 0 5 0 5
S.No	HT No	Name	Mar	Mar.	7.	Mar	Mar.	%	Mar	Mar.	7.	Mar	Mar.	7.	CO3	Mar	Mar.	7.	Mar	Mar.	7.	Mar	%	000000000000000000000000000000000000000	J 2505559950
1			2	8.5	23.529	6	9.5	63.158	1	6	16.67	5	6	83.33	50	2	9.5	21.05	4	9.5	42.11	200000000000000000000000000000000000000	0	100000000000000000000000000000000000000	A CANADACTOR
2			8.5	8.5	100	4.5	9.5	47.368	1	6	16.67	6	8	100.00	58.333		9.5	73.68	2	9.5	21.05		0	20010000	<u> </u>
3			4	8.5	47.059	8.5		89.474	1	6	16.67	1	6	16.67	16.667		9.5	63.16	7	9.5	73.68	2020000	0		
4			4.5	8.5	52.941	9.5	9.5	100	1	6	16.67	1	- 6	16.67	16.667		9.5	89.47	4.5	9.5	47.37		0	08/20/2011	1 2000000000
5			6	8.5	70.588	2	9.5	21.053	5	6	83,33	1	6	16.67		8.5	9.5	89.47	4.5	9.5	47.37		0		
6			4	8.5	47.059	7	9.5	73.684	1	8	16.67	1	6	16.67	16.667		9.5	89.47	4.5	9.5	47.37	100000000000000000000000000000000000000	0	000000000000000000000000000000000000000	A 0200000000000000000000000000000000000
7			6	8.5	70.588	7	9.5	73.684	1	6	16.67	1	6	16.67	16.667		9.5	34.74	4.5	9.5	47.37	5300000	0	533333333	6 3333333
8			7	8.5	82.353	1.5	9.5	15.789	5	6	83.33	6	6	100.00	91.667		9.5	47.37	7	9.5	73.68		0		4 3000000000
9			7	8.5	82.353	1.5	9.5	15.789	6	6	100.00	6	6	100.00		4.5	9,5	47,37	4.5	9.5	47.37	201000000	0	0.0000000000000000000000000000000000000	
10	1 - 5 1 - P val 8		7	8.5	82,353	6.5	9.5	68.421	1	6	16.67	1	6	16.67	16.667		9.5	89.47	4.5	9.5	47.37	40000	0	9600940099	1 0009000000
11			7	8.5	82.353	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	63.16	7	9.5	73.68	200	0		0.0000000000000000000000000000000000000
12			7	8.5	82.353	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	89.47	4.5	9.5	47.37		0	0.0000000	A (90356) (63
13		NT / Transpire	3	8.5	35.294	5	9.5	52.632	110	6	16.67	1.	6	16.67	16.667		9.5	63.16	4	9.5	42.11	Parket Str	0	40.000000000	6 2555500000
14		A CONTRACTOR OF	5	8.5	58.824	6	9.5	63.158	200100	6	16.67	1 1 1	6	16.67	16.667		9.5	89.47	4.5	9.5	47.37	63900	0	(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(0)(1 1000000000000000000000000000000000000
15			6	8.5	70.588	1.5	9.5	15.789	5	6	83.33	1	6	16.67		6.5	9.5	68.42	4.5	9.5	47.37	Make and	0		
16			7	8.5	82.353	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667		9.5	89.47	4.5	9.5	47.37		0	2000	
17	C		7	8.5	82.353	6	9.5	63.158	1001	6	16.67	1	6	16.67	16.667		9.5	84.21	4.5	9.5	47.37		0	200000000000000000000000000000000000000	d State of the
18			7	8.5	82.353	1.5	9.5	15.789	4	6	66.67	5	6	83.33	75	5	9.5	52.63	2	9.5	21.05		0	500000000000000000000000000000000000000	A 00000000000000
19			5	8.5	58.824	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667	6	9.5	63.16	6	9.5	63.16		0		
20			6	8.5	70.588	6	9.5	63.158	1	6	16.67	1	6	16.67	16.667	8.5	9.5	89.47	3.5	9.5	36.84		0	25/300000200	£ 200000000000
21			4	8.5	47.059	4	9.5	42.105	15	6	25.00	2010	6	16.67	20.833	5	9.5	52.63	2	9.5	21.05		0		
22		. E4-0	6	8.5	70.588	1.5	9.5	15.789	4	6	66.67	1001	6	16.67	41.667	6	9.5	63.16	5.5	9.5	57.89	10000	0	111100111111111111111111111111111111111	£ 200803-100993
23			8	8.5	94.118	4	9.5	42.105	1	6	16.67	1	6	16.67	16.667	8	9.5	84.21	4	9.5	42.11		0		
24			5	85	58.824	1.5	9.5	15.789	7	6	116.67	1 1	6	16.67	66.667	8	9.5	84.21	4	9.5	42.11		0	100000000000000000000000000000000000000	
25			4.5	8.5	52.941	2	9.5	21.053	800100	6	16.67	1	6	16.67	16,667	6	9.5	63.16	3	9.5	31.58		0	0.0000000000	S BORGOS
26			6	8.5	70.588	2	9.5	21.053	4	6	66.67	000100	6	16.67	41,667	7	9.5	73.68	4.5	9.5	47.37		0	1012099100	A 5000000000
27			6	8.5	70.588	2	9.5	21.053	5	6	83.33	19924148	6	16.67	50	8	9.5	84.21	4.5	9.5	47.37		0	\$15550A5245	A SOURCE CO.
28			15	8.5	17.647	7	9.5	73.684	4	6	66,67	1000	6	16.67	41.667	8.5	9.5	89.47	4.5	9.5	47.37		0	000000000000000000000000000000000000000	A 100 Miles (1990)
29			15	8.5	17.647	5.5	9.5	57.895	4	6	66,67	1	6	16.67	41.667		9.5	73.66	4.5	9.5	47.37	20000	0	0.0000000000000000000000000000000000000	5 000 000 000
30			3	8.5	35.294	4	9.5	42.105	5	6	83.33	0.01	6	16.67	50		9.5	68.42	5.5	9.5	57.89	1000000	0		
31			8	8.5	94.118	2.5	9.5	26.316	1	6	16.67	1	6	16.67	16.667	7	95	73.68	6	9.5	63.16		0	1000000000	A 100 Back of 5 p.
22		·		0.5	94 110	4	9.5	42 106		-	10.01	-	0	10.01	10 007		9.5	04.21	1	9.5	42.11		1 0	100000000000000000000000000000000000000	1



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- 1. Fill Table 1 with CO no, course outcome and course outcomes knowledge level (CKL) of a particular course.
- 2. In Table 2&3, Fill CKL values and PKL values in respective columns.
- 3. In **Table 2**, Subtract CKL value(c) PKL value(p) (Values of 0, 1 and 2 are considered as STRONG, 3,4 are considered as MEDIUM, and 5 is considered as LOW correlation).
- 4. Don't consider the sign value (+ or -). In case, if a course correlates with Non-Cognitive PO correlation can be S, M and L depending on the course.
- 5. Based on the value, correlation value taken as Strong (S), Medium (M) or Low (L) and fill the **Table 3.**
- 6. Then Fill **Table 4** with respective numerical values by considering Strong (S=3), Medium (M=2) and Low (L=1).
- 7. Calculate the sum of average of each CO contributing to PO and report in Table 4. (B)
- **8.** All the faculty has to prepare the following tables for each course and submit to the respective batch in charges.

Table 1: Course Outcome of selected course

COURS	SE OUTCOMES: At the end of the course, the student will be ab	le to
CO. No.	COURSE OUTCOME	Course Outcomes Knowledge Level (CKL)
C16.1	Explain the structure and activity of organic molecules, aliphatic hydrocarbons, alkenes and alkynes.	K2
C16.2	Explain about aromatic hydrocarbons and halogenatedarenes.	K2
C16.3	Summarize the nomenclature, preparation, characteristic reaction mechanisms of aliphatic halogen compounds alcohols, ethers and phenols.	K2
C16.4	Summarize the nomenclature, preparation, characteristic reaction mechanisms of carbonyl compounds, carboxylic acids and their derivatives.	K2
C16.5	Summarize the nomenclature, preparation, chemical reactivity and applications of nitrogen containing compounds.	K2

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Table 2: CO attainment of selected course

			CO attair	nment from Inte assessment	rnal exam	CO attainme	ty examination	СО	
Course code	Course name	Course outcomes	CO Attainment (%)	CO Attainment level (a)	A - Internal Exam attainment level (0.20*a)	CO Attainment (%)	CO Attainment level (b)	B - University Examinations attainment level (0.80*b)	Attainment (Internal+ University exam) A + B
	a samu	CO1	arv judin in		Section 1	- 11		DESTEE D 104	
		CO2		.200	e do Smor		IV T TILL	. Suntres	
	(IFE To see 7	CO3	J. S. Zhanneses, Parvi			ada - malad	version cardina	asile as a Farmist	1 >
-		CO4						77 - L. z - 3	
		CO5						A0 3 - 20 10 + 100 1	
Overal	l CO atta	inment	edzi ingeso	engala.	lgez Uspigaro	in a bank	o cirioy k sta	e3" Het meil	Ó

Note: 80% weightage to University examination and 20% weightage to Internal exams the attainment calculations will be (80% of University level) + (20% of Internal level).

II. PO attainment

- Step1: For each Programme Outcome the highest possible Blooms Knowledge level is assigned (PKL). For each course, course outcomes are drafted along with knowledge levels (CKL).
- Step 2: Course articulation matrix M(c, p) is defined as absolute value of the difference between CKL(c) PKL(p).

$$M(c, p) = CKL \ value(c) - PKL \ value(p)$$

- Values of 0, 1 and 2 are considered as STRONG, 3,4 are considered as MEDIUM, and 5 is considered as LOW correlation.
- Based on the value, correlation value taken as Strong (S), Medium (M) or Low (L).
- In case, if a course correlates with Non-Cognitive PO correlation can be S, M and L depending on the course.
- For Non-cognitive POs (PO2, PO5 and PO8) MEDIUMcorrelation is suggested.

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Table 2: Course articulation matrix of selected course

À.	CO	CKL	PO1 (COG)	PO2 (NON- COG)	PO3 (COG)	PO4 (COG)	PO5 (NON- COG)	PO6 (COG)	PO7 (COG) & (NON- COG)	PO8 (NON- COG)	PO9 (COG)	PO10 (COG) & (NON- COG)	PO11 (COG)
	PKL	(0.070	→ K2	n Matrix	K4, K5	K5, K6		K2	K2(COG)	Trest	K3,K4,K5	K5 (COG)	К3
	C16.1	К2	S(2- 2=0)		S(4- 2=2)	M(5- 2=3)		S(2- 2=0)	S(2-2=0)	<u> </u>	S(3-2=1)	M(5-2=3)	S(3-2=1)
01.	C16.2	K2	S(2- 2=0)		S(4- 2=2)	M(5- 2=3)		S(2- 2=0)	S(2-2=0)	, 	S(3-2=1)	M(5-2=3)	S(3-2=1)
7	C16.3	K2	S(2- 2=0)		S(4- 2=2)	M(5- 2=3)	×	S(2- 2=0)	S(2-2=0)		S(3-2=1)	M(5-2=3)	S(3-2=1)
mound	C16.4	K2	S(2- 2=0)	Gudery Cultury (C	S(4- 2=2)	M(5- 2=3)	15 (10 <u>15)</u> 1949 17 (1110) 22 (1217)	S(2- 2=0)	S(2-2=0)		S(3-2=1)	M(5-2=3)	S(3-2=1)
	C16.5	K2	S(2- 2=0)		S(4- 2=2)	M(5- 2=3)		S(2- 2=0)	S(2-2=0)		S(3-2=1)	M(5-2=3)	S(3-2=1)



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Table 3: Course Articulation Matrix of selected course

CKL (C16.1) – PKL (PO4) = -3

Defined COs KL is less than the

Expected PO KL

S: {-1}, M: {-2, -3}, L: {-4, -5}

9 (B	CKL	PO1	PO2	PO3	P04	PO5	PO6	PO7	PO8	PO9	PO10	PO11
PKL	555	2	M	4	5	М	2	2	М	3	5	3
C16.1	2	S		S	M		S	S		S	М	S
C16.2	2	S		S	M		S	S		S	M	S
C16.3	2	S	2020.03	S	M		S	S	attans	S	М	S
C16.4	2	S	Pollang	S	M	rica, a Grzin	S	S	18-214	S	M	S
C16.5	2	S		S	М		S	S		S	M	S

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CKL – Course outcome Knowledge level

PKL – Programme outcome Knowledge Level

PKL is expected by NAAC

CKL is based on course outcome defined and approved by the Course Coordinator and Program Advisory Board

Table 4: Course Articulation Matrix (CO-PO Matrix) with numeric values

PKL	CKL	PO1	PO2 M	PO3 4	PO4 5	PO5	PO6	PO7	PO8 M	PO9 3	-PO TO 5	are repla	ble 3 S, M &L aced by values M=2& L=1
C16.1	2	3		3	2		3	3		3	2	3	
C16.2	2	3		3	2		3	3		3	2	3	
C16.3	. 2	3		3	2		3	3		3	2	3	
C16.4	2	3	n occ	3	2	j-vicir	3	3	eritana 1175-119	3	2	3	
C16.5	2	3	CI 140	3	2	m/2. cm	3	3	WE by:	3	2	3	
C1 Average	*	3	1/2	3	2	1/8	3	3		3	2	3	

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СО	CKL	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
C14	Average	3	2	2	2	1	3	3	2	2.6	2	3 –(B)

Course Name	Course				C	О-РО	Correl	ation N	Matrix			
B.PHARMACY FIRST YEAR/I SEM	code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
DISPENSING AND		9	6	6	6	3	9	9	6	7.8	6	9A*B
GENERAL PHARMACY	C14					80	n 7 y		ilin top	: Pin	egald Sagar	

Batch in charge have to calculate direct attainment POs by following method.

The direct attainment of POs for all courses is determined by calculating weighted average using the following equation =

Average of $\{(A*B) \text{ of all courses}\}$

Average correlation values of CO-PO matrix (B) of all courses

• From Direct PO attainment 80% weightage is taken.

Table 6: Direct attainment of POs

i n. 801a drama da caste	ovii a frot teopa na na	MI 151	Service of) of c				1	
Course Name	Course Code	010	00	03	04	05	P06	07	P08	60	010	0111
	18 4 0 N	. S	P	<u> </u>	<u> </u>	<u>d</u>		A INC	a P	A A	P	P

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Step 3:Programme articulation matrix

Programme articulation matrix of all courses of academic batch is prepared by taking average correlation value of CO-PO matrix of respective course (Batch In charge has to prepare Programme articulation matrix of all courses of academic batch)

Table 5: Programme articulation matrix

Year/Sem	Course	Course				C	O-PO	Correl	ation v	alue			
	Name	Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
ERDY LINE	4 201	2014 0	m ja	77 R	7 1	T TC	9.50	9 10	ij.,	k 00 -	COAR	RAIFI.	1
											CHENG	1700	4
												17.3	
ar Aliki a		0 3					d				OM	36, [43]	1

Step 4: Direct attainment of POs

In Programme articulation matrix, Class average attainment level of respective course

- (A) is multiplied by Average correlation value of CO-PO matrix of respective course
- (B). The same method is adopted for all courses. It is explained in the following steps.

Example:

S. No.	Course name	Course code	No. of Students appeared	No of Students Passed	% of students >=bench mark	Attainment level
1.	DISPENSING AND GENERAL PHARMACY	C14	87	78	90	3—(A)

% of students who have secured greater than or equal to the fixed bench mark (40%) in university examination is taken as Class average attainment level of respective course (A).

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		ES										
Indirec	t attain	ment lev	el			[2]	27 (2.10)	1,4	13/	(37 o	2000-74	

Step 6: Overall PO attainment

From Direct PO attainment 80% weightage is taken. From indirect PO attainment 20 % weightage is taken which comprises of 10% of Programme exit survey; 5% Alumni survey and 5% of Employer survey. Overall weighted PO attainment is calculated by combining direct and indirect attainment levels.

Overall PO attainment= (Direct attainment level*0.8) + (PES attainment level*0.1+AS attainment level*0.05+ES attainment level*0.05)

Table 8: Over all PO attainment

PO ATTAINMENT	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
DIRECT ATTAINMENT (80%)											
PROG EXIT SURVEY (10%)	30.17	ri n	1.0	5 04	1. (147)	Pine :	Fig.	an Li	to T	best	
EMPLOYER SURVEY (05%)	31	4				Ma w		- 1.0		22/01	
ALUMNI SURVEY (05%)						9711		1. 1	illo I	Total	
OVERALL PO ATTAINMENT											

Step 7: Evaluation of POs

Expected level of attainment (ELOA) for Programme outcomes is analyzed and decided by PAB based on previous academic batches results and attainments. Actual level of attainment (ALOA) for Programme outcomes is reported.

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		1							
Average of {(A*B) of all courses}			43.7.7.	(N).c	nis II	i vy			
Average correlation values of CO-PO matrix (B) of all courses									
DIRECT ATTAINMENT									
DIRECT ATTAINMENT (80%)			idw	iosini.			1)27	10	

Step 5: Indirect attainment of POs of all courses

Indirect attainment of POs is calculated by Programme exit survey, Alumni survey and Employer survey. From indirect PO attainment 20 % Weightage is taken which comprises of 10% of Programme exit survey, 05% Alumni survey and 05% Employer survey.

Table 7: In direct attainment of POs

Acade mic batch	Total Stud ents	Surve y Detai ls PES	Total No of Surve ys	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO1 0	PO1 1
Indirec	t attain	ment lev	el						21 F	l to m	và na svíh	77	13000	
deci ng imagani	sobitm sur-krif	AS	aricom Admar		enter. Som e	i para	is (A soltan			uirta Mairta	lu la r	n bed Su-asd	a,xil EAG	
Indirec	t attain	ment lev	el			Foil Ca	15000	0/10	DAUTE	mini Mini	garil 1		l helej	

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Table 9: Over all PO attainment

PO	ELOA	ALOA
PO1		
PO2		
PO3		
PO4		
PO5		
PO6		
PO7		
PO8		
PO9		
PO10		
PO11		





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