

Aundh Shikshan Mandal, Aundh
RAJA SHRIPATRAO BHAGAWANTRAO MAHAVIDYALAY, AUNDH
INTERNAL QUALITY ASSURANCE CELL

OBE PROCESS

Course- Program outcome Matrix:

College follows the rules and regulation of Affiliated University and implement the same programme wise CO, PO and PSO in teaching learning evaluation process. The Program Outcomes are developed through the curriculum (curricular/co-curricular extra-curricular activities). The program outcomes are attained through the course implementation. As an educator, one must know, **“to which POs his/her course in contributing?”** So that one can design the learning experiences, select teaching method and design the tool for assessment. Hence, establishing the Course-PO matrix is essential step in the OBE. The course-program outcomes matrix indicates the co-relation between the courses and program outcomes. The CO-PO matrix is the map of list of **courses contributing to the development of respective POs.**

The template is provided in the below table.

NOTE- FOR BETTER UNDERSTANDING OF THE FACULTY B.SC. PROGRAM IS CONSIDERED. CO-PO MATRIX MAY BE DIFFERENT ACCORDING TO COURSES.

COURSE TITLE	A	B	C	D	E
PAPER-IX- PHYSICAL CHEMISTRY	*	*	*		
PAPER-X INORGANIC CHEMISTRY	*	*			
PAPER-XI ORGANIC CHEMISTRY	*	*	*	*	*
PAPER-XII INDUSTRIAL CHEMISTRY	*	*		*	*
PAPER-IX- PHYSICAL CHEMISTRY	*	*	*		
PAPER-X INORGANIC CHEMISTRY	*	*			
PAPER-XI ORGANIC CHEMISTRY	*	*	*	*	*
PAPER-XII ANALYTICAL CHEMISTRY	*	*		*	*

* - CO Metric that contributes to the Programme Outcomes.

2. Course Outcomes (for all courses):

The course outcomes are the statement that describes the knowledge & abilities developed in the student by the end of course (subject) teaching. The focus is on development of abilities rather than mere content. There can be 5 to 7 course outcomes of any course. These are to be written in the specific terms and not in general. **The list of Course Outcomes** is attached herewith.

3. Set Target levels for Attainment of Course Outcomes:

The course outcome attainment is assessed in order to track the graduates' performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates' abilities through appropriate learning & teaching strategies. In order to assess students' performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment are measured/calculated. In order to calculate the **Program Outcome attainment, the Course Outcome attainment** is calculated. Prior to that, the course-program outcome mapping is done

4. Set Target level for Attainment of Program Outcomes:

The program outcome attainment is assessed in order to track the graduates' performance w.r.t target level of performance. The CO-PO attainment is the tool used for continuous improvement in the graduates' abilities through appropriate learning & teaching strategies. In order to assess students' performance with respect to abilities (at the end of course teaching/by the end of program) the course outcome attainment and program outcome attainment is measured/calculated. The program outcome attainment is governed by curricular, co-curricular and extra-curricular activities including the stakeholders' participation. The direct method is adopted to calculate the PO attainment. **The direct method implies the attainment by course outcomes contributing to respective program outcomes..** In order to calculate the program outcome attainment, the course outcome attainment is calculated. Prior to that, the course-program outcome mapping is done. The set target level is the set benchmark to ensure the continuous improvements in the learners/ graduates' performance.

5. Course Attainment Levels:

- a. CO attainment is defined/set at three levels;
- b. The CO attainment is based on end term examination assessment and internal assessment;
- c. The CO attainment is defined at three levels in ascending order-
 - i. e.g. for end term and internal examination;

Sr.No	Level	CO Attainment
1	Level-1	30% students scored more than class average
2	Level-2	40% students score more than class average
3	Level-3	50% students score more than class average

d. The target level is set at Level-2. It indicates that, **the current target is level 2; 40% student's score more than class average**. The CO attainment is measured and the results are obtained. Based on the results of attainment, the corrective measures/remedial action are taken.

e. CO Attainment= 80% (Attainment level in end term examination) + 20% (Attainment level in internal examination).

6. Program attainment Level:

- a. PO attainment is defined at five levels in ascending order;
- b. **The PO attainment is based on the average attainment level of corresponding courses (Direct Method).**
- c. The PO attainment levels are defined/set as stated below;

Sr.No	Level	PO Attainment
1	Level-1	Greater than 0.5 and less than 1.0 (0.5>1)- Poor
2	Level-2	1.0>1.5-Average
3	Level-3	1.5>2.0-Good
4	Level-4	2.0>2.5-Very Good
5	Level-5	2.5>3.0 -Excellent

d. The PO attainment target level is set/defined at Level-3

It implies that, the department is aiming **at minimum level 3 (Good)** in the performance of abilities by the graduates. Based upon the results of attainment, the remedial measures are taken;

e. PO Attainment= 100% (Average attainment level by direct method)

7. The Results of CO Attainment:

The Results of CO Attainment is provided in **Annexure-B**

FOR EXAMPLE:

COURSE CODE/TITLE: PHYSICAL CHEMISTRY-PAPER-IX

E.g. For end term and internal examination;

i. Level-1: 30% students scored more than class average

ii. Level-2: 40% students score more than class average;

iii. Level-3: 50% students score more than class average

Average Marks in External examination: 17.17 i.e. 17.00

% Students score more than 17 is 27/52 i.e. 51.92% i.e. **Level-3**

Average Marks in Internal examination= 9.076 i.e. 9.00

% Students score more than 9 is 43/52 i.e.82.69 %, i.e. **Level-3**

A (CO) PHY CHEM-IX= 80% (3) +20(3)

=2.4+0.6

= 3.0

Hence, the attainment level is Level-3 and the set target level is Level-2 and therefore the CO is fully attained.

Table No. 1.0: CO Attainment Level

Course Title	CO Attainment Value	Target attainment Level	Fully Attained/Not Attained	Remedial Measures
PHY-IX	03	02	Fully Attained	
INORG-X	03	02	Fully Attained	

ORG-XI	03	02	Fully Attained	
IND-XII	2.2	02	Fully Attained	
PHY-XIII	03	02	Fully Attained	
INORG-XIV	03	02	Fully Attained	
ORG-XV	2.2	02	Fully Attained	
ANA-XVI	2.2	02	Fully Attained	

8. The Results of PO Attainment:

The Results of PO attainment are provided in Annexure-B

FOR EXAMPLE:

PO Attainment= 100% (Average attainment level by direct method)

Direct Method-Average Attainment level of Corresponding Courses.

A (PO) a = (3+3+3+2.2+3+3+2.2+2.2)/8

= 2.70 i.e. Level-5.

The Target Level is Level-3. Hence, PO is attained

Table No. 2.0 PO Attainment Level

PO/PSO	PO Attainment Value	TARGET ATTAINMENT LEVEL	Fully Attained/Not attained	Remedial Measures
B.Sc. Chemistry	2.70 (Level 5-2.5>3.0-Excellent)	3	Fully Attained	NA

9. Planned Actions for Course Attainment: Not applicable.

10. Planned Actions for Program Outcome Attainment: Not Applicable.

ANNEXURE-B

RESULTS OF CO-PO ATTAINMENT

PO ATTAINMENT: B.Sc. CHEMISTRY						
SR.NO	COURSE	A	B	C	D	E
1	PHY-IX	3	3	3	-----	-----
2	INORG-X	3	3	-----	-----	-----
3	ORG-XI	3	3	3	3	3
4	IND-XII	2.2	2.2	-----	2.2	2.2
5	PHY-XIII	3	3	3	-----	-----
6	INORG-XIV	3	3	-----	-----	-----
7	ORG-XV	2.2	2.2	2.2	2.2	2.2
8	ANA-XVI	2.2	2.2	-----	2.2	2.2