OBE Manual
SGRRU

Enlightening lives through Education...

SHRI GURU RAM RAI UNIVERSITY

Patel Nagar, Dehradun-248001, Uttarakhand, India

[Estd. by Govt. of Uttarakhand, vide Shri Guru Ram Rai University Act no. 03 of 2017 &recognized by UGC u/s (2f) of UGC Act 1956]

COs/POs/PSOs Mapping Procedure
Academic Year 2021-22

SHRI GURU RAM RAI UNIVERSITY DEHARDUN, UTTARAKHAND

Preamble

Outcome Based Education (OBE) is an educational model that serves as the foundation of a good education system. In OBE, there is no single prescribed style of teaching or assessment. All educational activities at OBE should assist students in meeting their objectives. Depending on the desired outcomes, the faculty may take on the roles of instructor, trainer, facilitator, and/or mentor.

OBE improves on traditional methods while focusing on what the Institute offers students. It demonstrates success by creating or demonstrating outcomes in favor of students using statements such as "able to do." OBE establishes clear benchmarks for observable and measurable outcomes.

Benefits of OBE

- **Clarity:** The emphasis on outcome creates a clear expectation of what must be completed by the end of the course.

- **Flexibility:** Instructors will be able to structure their lessons around the needs of their students if they have a clear sense of what needs to be accomplished.

- **Comparison:** OBE can be compared on an individual, class, batch, programme, and institute level.

- **Involvement:** Students are expected to learn on their own. Increased student involvement allows them to feel accountable for their own learning, and they should learn more as a result of this individual learning.

OBE in India

India became a permanent signatory member of the Washington Accord on June 13, 2014. OBE implementation in higher technical education has also begun in India.

The National Assessment and Accreditation Council (NAAC) and the National Board of (NBA) are independent bodies in India that promote global quality standards for technical education. Since 2013, the NBA has only accredited programmes that use OBE.

The National Board of Accreditation requires engineering, pharmacy, and management programmes to establish an outcome-based education culture. Reports on outcome analysis assist in identifying gaps and implementing continuous improvements in an Institute's education system, which is critical.

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Preface

This manual is intended to assist faculty, staff, and stakeholders in understanding the Outcome Based Education (OBE) system that has been implemented at Sri Guru ram Rai University Dehradun Uttarakhand.

The manual provides useful guidelines for faculty in developing an assessment plan in the process of measuring the outcomes of students during their course of study and after graduation.

The manual describes the steps involved in creating a useful curriculum development and content delivery or teaching plan.
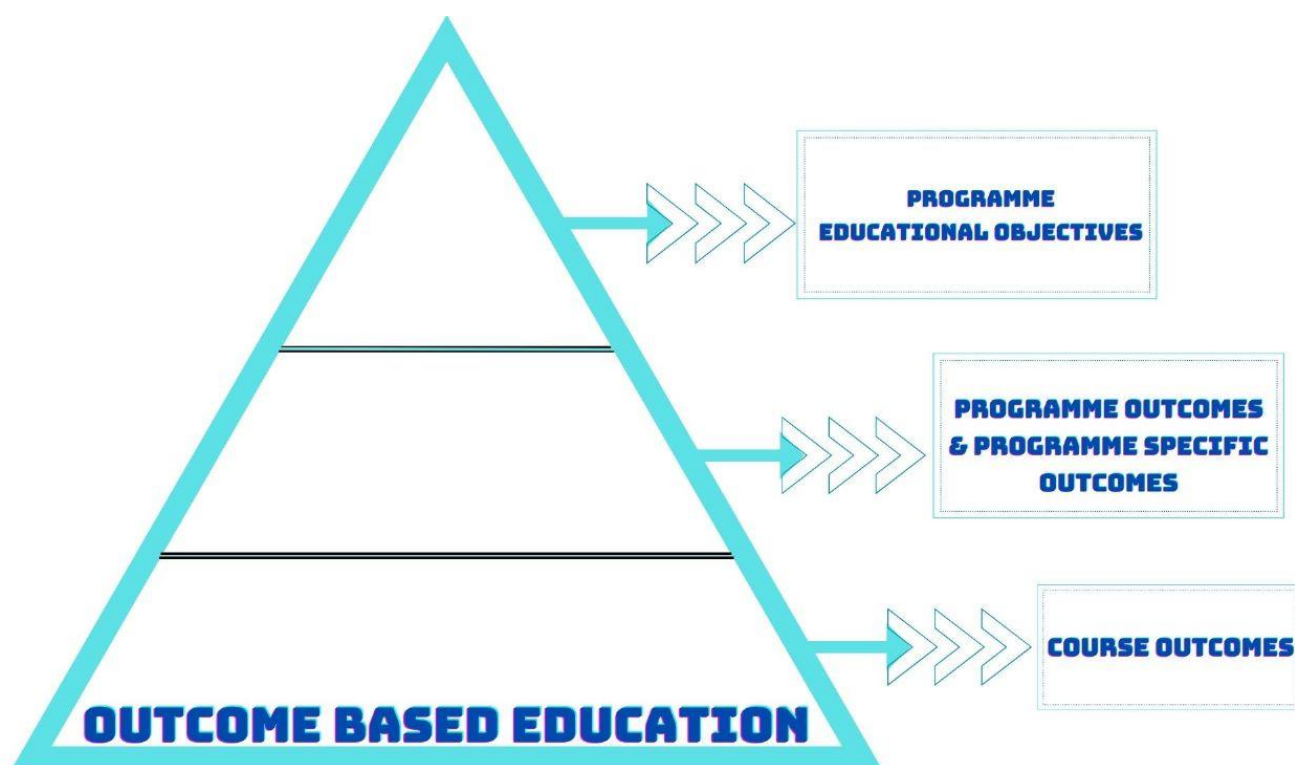

Figure 1: Outcome based education

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Introduction

Shri Guru Ram Rai University was established on April 5th 2017 vide Government of Uttarakhand, notification no- 109/XXXVI (3)/2017/80(1)2016, issued on June 27th 2017, in recognition of the service to the nation by its parent body, the iconic Shri Guru Ram Rai Education Mission, Jhanda Sahab, Dehradun. The University is an extension of the values and ethos of its parent body and strivesto stand tall on the edifice of Higher Education. The University aims at imparting holistic education tothe naïve minds and souls of the country and foster a lifelong commitment to nation building.

In alignment with our motto, **"Quest for Excellence"** the University envisages a vision where in excellence is not just a letter but a way of life.

The University is forging ahead, setting bench marks and with the hand holding of its statutory authorities and advisors is emerging as a new force to reckon with. In pursuance of its vision, IQAC cell was established in 2017, to develop a system for conscious, consistent and catalyticimprovement in the overall performance of the University.

Vision

"To establish Sri Guru Ram Rai University to be a Center of Excellence in higher education, innovation and social transformation by nurturing inquisitive and creative minds and by enabling the stakeholders to become committed professionals and educators of national and global relevance."

Mission

- ❖ To provide a comprehensive and sustainable educational experience that fosters the spirit of enquiry, scientific thinking and professional competence along with ethical and spiritual values

- ❖ To deliver a classic, well rounded learning experience that is distinctive and impactful on the young generation preparing them for a successful career

- ❖ To engage, inspire and challenge the stakeholders to become leaders with ethics and positive contributors to their chosen field and humane citizens

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- ❖ To attract, train and retrain qualified staff to work efficiently to bring forth the maximum resource potential

- ❖ To develop committed and responsible professionals who work for the welfare of the society by providing innovative and efficient solutions and creating long term relationship with the stakeholders

- ❖ To create a sustainable career, by collaborating with stakeholders and participating in community
- ❖ partnership for life and livelihood in the local society in a responsive and dynamic way

- ❖ To make our students globally competent by introducing specialized training leading to professional capabilities and developing diverse skills in them for competitive advantage.

- ❖ To establish quality standards for generations by epitomising professionalism and integrity while raising the achievements of students.

- ❖ To ceaselessly pursue excellence by strengthening a learning environment that makes the institution the most preferred destination in the country.
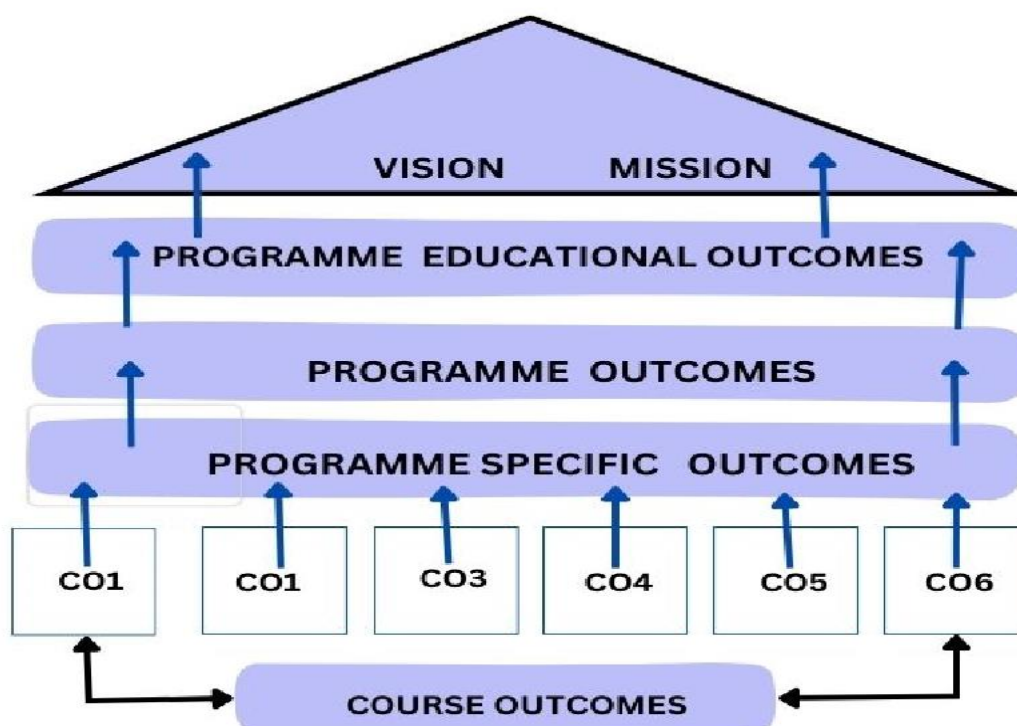

Figure 2: Key Parameters of Outcome Based Education

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Definitions

Graduate Attributes (GAs): are characteristics that indicate a graduate's ability to acquire competence to practice at the appropriate level. GAs are a collection of individually assessable programme outcomes.

Programme Educational Objectives (PEOs): describe graduates' career and professional development, which will be assessed after two or three years of graduation.

Programme Outcomes (POs) : describe the Knowledge, Skills, and Attitude that students should have upon graduation.

Course Outcomes (COs) : outline the course specifications that students must obtain.

Knowledge, Skills, and Attitude (KSA): are the three types of behavior elements chosen from Bloom's taxonomy.

Course Syllabus (CS) : is a detailed description of a curriculum offered by the Board of Studies' respective programme of study.

lesson plan (LP) : is a semester-long teaching-learning plan developed by the Course Instructor.

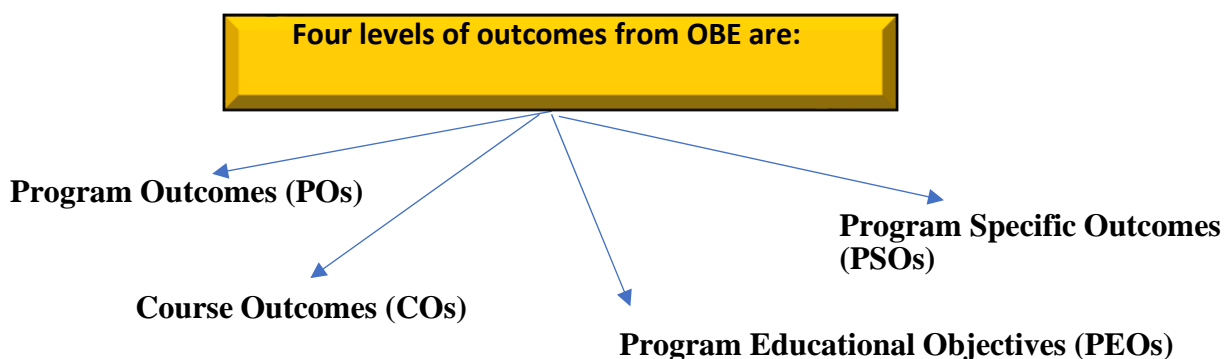**Complete Examination Analysis (CEA):** is a tool developed in-house to assess the achievement of COs and POs.

Course End Survey Analysis (CESA): (Indirect method) is a procedure for measuring COs and POs indirectly from course outcome components.

The Direct Method : is a procedure for measuring COs and POs directly from levels of external and internal components.

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A. Establishment of POs/PSOs/COs

Educational Institutes promoting OBE attempt to bring variations to the curriculum by adapting to the requirements of the diverse stakeholders like Students, Parents, Industry Personnel and Recruiters. Outcome Base Education system is completely a system in education based on feedback and outcomes. There are Four levels of outcomes:

Four levels of outcomes from OBE are:

Program Outcomes (POs)

Course Outcomes (COs)

Program Educational Objectives (PEOs)

Program Specific Outcomes (PSOs)

a.Program Outcomes (POs

POs specify what students must know and be able to do by the end of the programme. POs should be designed in accordance with the Washington Accord's graduate attributes. The most important thing to remember is that all POs should be specific, measurable, and achievable.

NBA has defined 12 POs, which are listed below, and we do not need to define those POs yourself; they are the same for all institutions in India. As a result, it is recommended that all university courses follow the same structure in order to be consistent in approach.

The Process for Establishing the PO"s The POs are established through the following process steps: The Vision, Mission of the Department along with the 12 Graduate Attributes given by the NBA areused in defining the POs.

Step 1: Program Coordinator consults the key constituents: faculty and collects their views and prepares the draft version of the POs.

Step 2: The Program Coordinator then gather views from the Alumni Professional Body representatives, Industry representatives / Employer along with the faculty and revise the draft.

Step 3: The Program Assessment Committee analyse and express its opinion on the revised POs andforwards the same for final approval to Department Advisory Board.

Step 4: Department Advisory Board deliberate on the views expressed by the Program Assessment Committee and formulate the accepted views based on which POs are to be established.

(It is also recommended to keep all the records of process adopted by different schools as MOM.)

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12 Graduate Attributes given by the NBA are as under :

- **PO 1 (knowledge)**
  Develop students with an in depth understanding of the operational aspects and knowledge ofthe underlying principles of the subject

- **PO 2 (Problem analysis)**
  Demonstrate effective application capabilities of their conceptual understanding to the real- world business situations and analyse complex problems reaching validated inferences and conclusions.

- **PO 3 (Design / development of solutions)**
  Thinking analytically, clearly and critically, while solving problems and making decisions during daily practice with suitable attention for the public health, safety, and environmental deliberations.

- **PO 4 (Conduct investigations of complex problems)**
  Practice research-based knowledge and research methods interpretation of data, and synthesisof the information to provide valid judgements.

- **PO 5 (Modern tool usage)**
  Create, select, and apply modern appropriate techniques, resources, with an understanding of its limitations.

- **PO 6 (society)**
  Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legaland cultural issues and the consequent responsibilities relevant to the professional engineeringpractice.

- **PO 7 (Environment and sustainability)**
  Understand and evaluate ethical issues and situations to make decisions Understand the impactof solutions in societal and environmental circumstances, and validate the knowledge and needfor sustainable development.

- **PO 8 (Ethics)**
  Apply ethical principles and bind to professional ethics and responsibilities and norms of the subject concerned practice.

- **PO 9 (Individual and team work)**
  Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

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- **PO 10 (Communication)**
  Professionally communicate their analyses, arguments, and recommendations to a variety of audiences. Be skilled in written, oral, and visual communication Communicate effectively withcommunity at large, make effective presentations, and give and receive clear instructions.

- **PO 11 (Project management and finance leadership skills)**
  Demonstrate knowledge and understanding of and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multi-disciplinaryenvironments.

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

The POs are published and disseminated
The Program Outcomes are published and disseminated as follow

How Published	Where Published	How Disseminated
Incorporating in booklet given during orientation, syllabus book,course files and lab manuals	• Orientation booklet • syllabus books • Course files and lab manuals • Laboratories in the departments	• Distribution and explanation to students on orientation day • Discussed during Orientation Day • Discussed during student Counseling • Distributed along with Syllabus books, course files and lab manuals
Flexis	• Class rooms/ Laboratories • Office of the department • Department Notice boards • Staff Rooms	• Self-reading by students, parents and alumni
Digital Media	• Institute Website	• Available for Self-reading in public domain
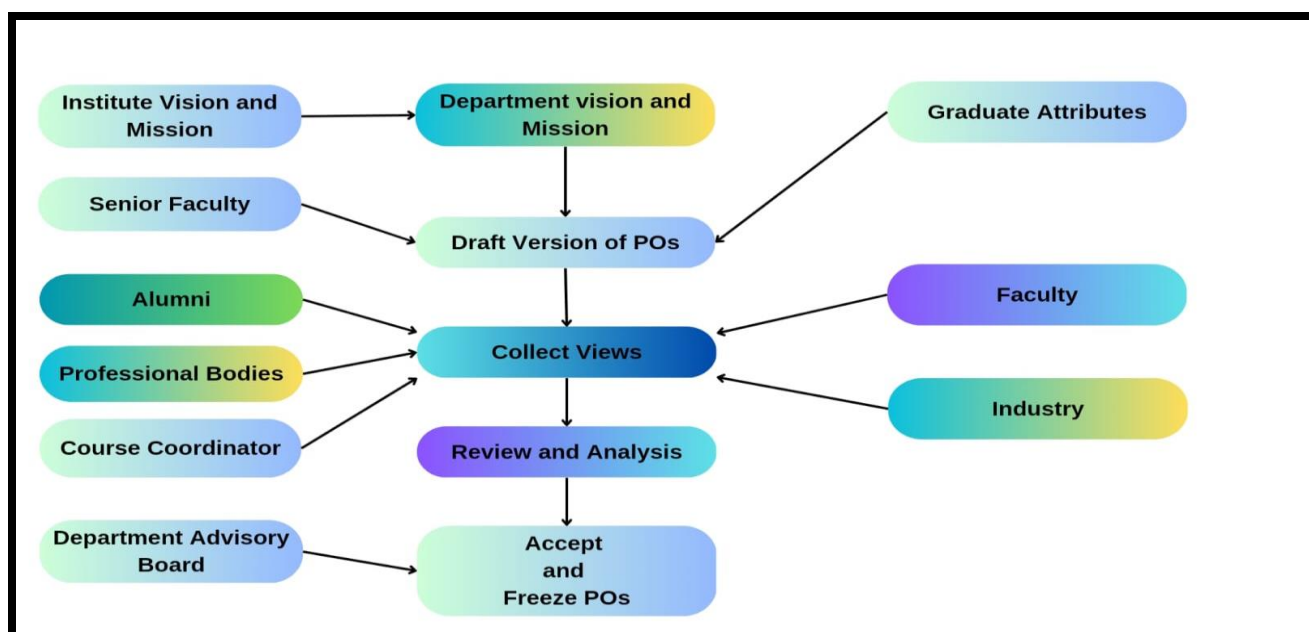
Figure 3: Process to Define Program Outcomes of the Department

a. **Program Specific Outcomes (PSOs)** : are statements that describe what thegraduates of a specific program should be able to do.

b. **Program Educational Objectives (PEOs)**

PEOs (Program Educational Objectives) PEOs are promises made by the Department to prospective students about what they will achieve if they join the programme. PEO assessment is not mandatory in India because it is difficult to measure in the Indian context. NBA assessors rarely request PEO evaluations. If the department decides to use PEOs, avoid using technical terms in the PEOs because they will be read by prospective students who want to join the programme. Three to five PEOs are suggested.

c. **Course Outcomes (COs)**

Statements that indicate what a student can do after completing a course successfully. Every Course results in some sort of Course Outcome. The CO statements are defined by taking into account the course content covered in each course module. There may be 5 or 6 COs for each course. Bloom's Taxonomy is used to define the keywords that are used to define COs.

Course outcomes are statements that describe what a student should know, understand, and/or able to demonstrate after finishing a course.

Before the commencement of the academic session, courses are allotted to the faculty who are then responsible for identifying and formulating the course outcomes. In such a case where the course has been taught by someone else in the previous year, modifications, if any, can be made and should be passed in the BOS.

The course outcome basically identifies the knowledge that will be gained.

STEPS

- ❖ The syllabus is written with the understanding that knowledge is holistic and contributes to the technical, social, and moral aspects of the student. It is significant because it demonstrates how he or she can contribute in the real world, for example, in the industry/society or for research work after graduation.

- ❖ The syllabus is used to develop the course outcomes.

- ❖ The course outcomes have a direct impact on the student's knowledge. However, the desired outcome for outcome-based education is demonstrated by the programme outcomes. As a result, the programme outcomes for each department must be established.

- ❖ Once the course outcomes are determined, they are linked to the programme outcomes. This demonstrates the importance of the department's programme outcomes.

- ❖ Four levels are selected for mapping: high (H), medium (M), low (L), and blank. The weightage factor of POs is calculated by taking H=3, M=2, L=1, and Blank=O into account.

- ❖ If the course outcome directly justifies the PO, it is mapped as H, if indirectly, it is mapped as M, if it has very little relation to the PO, it is mapped as L, and if the CO has no relation to the PO, the mapping is left blank.

While writing COs for a course, please remember the following points.

1. The major skills, knowledge, attitude, or ability that students will acquire must be stated by the COs.
2. COs must be expressed as measurable and/or observable behaviors.
3. COs should be agreed upon by programme faculty and should drive programme outcomes.
4. The department's courses should all have the same number of COs.
5. The COs should be written by Professors who have demonstrated significant expertise in that course, and then the textbook for the course should be identified.
6. The syllabus book should include a course articulation matrix for all courses' CO-PO mapping
7. According to the NBA, there should be a minimum of six COs.
8. Course outcomes should begin with a Bloom's taxonomy action verb.

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Perfectly written cos:

Well-written COs make it easier for faculty to assess the CO's achievement at the end of the semester. It also assists the faculty in developing appropriate delivery and assessment methods to achieve the intended Cos

To create or revise cos:

- ❖ **When a new course is introduced, new COs are created.**
- ❖ **Existing COs are revised in response to stakeholder feedback or during the two or three-year cycle of Curriculum Review.**

Evaluation process

All Question Papers must adhere to the following levels:

- ❖ Primary Level (**Remember and Understand**)
- ❖ Level of Application (**Apply**)
- ❖ Advanced Thinking Capability (**Analyze, Evaluate and Create**

Base Level (Remember and Understand): The most basic level of questions requires students to recall information from the course content. Knowledge questions typically require students to identify information in the same format in which it was presented.

Keywords for Question types				
Define	Who	Match	Omit	Name
Label	Choose	Where	What	Which
Why	How	Show	Relate	When
Find	Tell	Recall	Spell	List

Understand: Comprehending, organizing, comparing, translating, interpolating, and interpreting facts and ideas in their own words. The questions require students to combine data and go beyond simple recall.

Keywords for Question types				
Compare	Outline	Summarize	Explain	Extend
Relate	Contrast	Demonstrate	Illustrate	Rephrase
Classify	Interpretate	Translate	Select	Infer

Level of Application (Apply):

Students must solve problems by using/applying a concept they learned in class.
Students must apply their knowledge to determine the appropriate response.

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Keywords for Question types				
Compare	Motive	Function	Take part in	Conclusion
Interference	Test for	Contrast	Inspect	Survey
Relationships	Simplify	Discover	List Out	Tell
		Theme		

Level of Advanced Thinking (Analyze, Evaluate, and Create):

Analyze:

Analyzing the question requires students to break something down into its component parts Students must analyze in order to identify reasons, causes, or motives and reach conclusions or generalizations.

Keywords for Question types				
Analyze	Who	Match	Assume	Name
Interference	Award	Inspect	Classify	Categorize
Categorize	Agree	Dissect	Function	Distinguish
Appraise	Divide	Examine	List out	Assess

Evaluate: To evaluate something, an individual must make a decision.
Questions to consider when determining the worth of an idea, a character, a work of art, or solution to a problem. At this level, students are making decisions and solving problems. There is no correct single answer to evaluation questions.

Keywords for Question types				
Choose	Explain	Judge	Disprove/ Prove	Decide
Value	Estimate	Determine	Recommend	Opinion
Prioritize	Perceive	Criteria	Influence	Evaluate
Measure	Conclude	Importance	Rate	Justify
Dispute	Measure	Justify	Conclude	Defend

Create: The questions in this category encourage students to think creatively and independently. At this stage, original ideas and problem-solving skills are developed. There are numerous possible responses for creating type questions

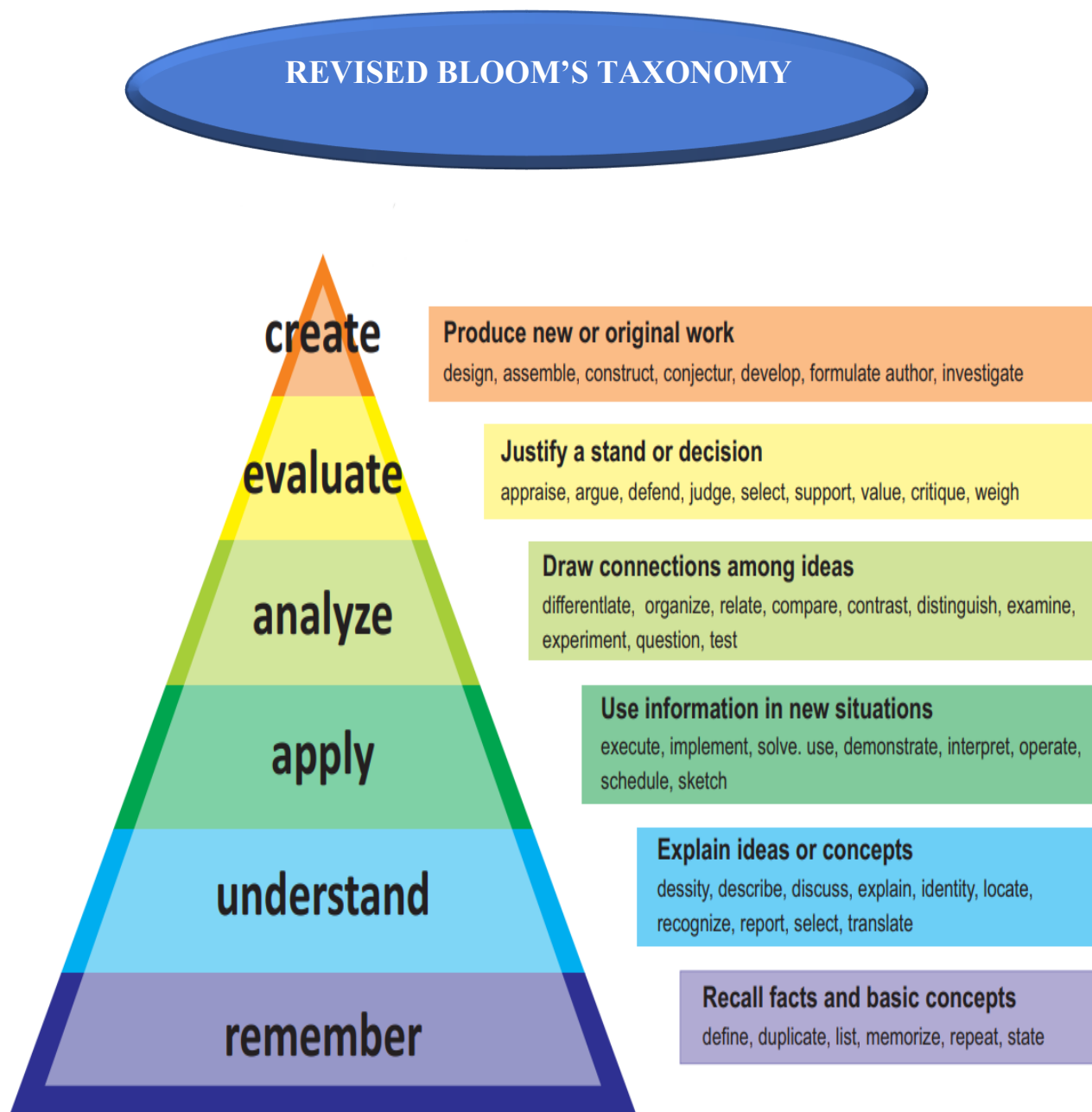| Keywords for Question types				
Adapt	Modify	Original	Invent	Happen
compose	Build	Propose	Originate	Maximize
Develop	Construct	Change	Solution	Test
Imagine	Elaborate	Create	Combine	Solve
Predict	Improve		Formulate	Design

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FIGURE 4 : REVISED BLOOM'S TAXONOMY

Action Verbs and Course Outcomes

Lower Order of Thinking (LOT)			Higher Order of Thinking (HOT)		
Remember	**Understand**	**Apply**	**Analyse**	**Evaluate**	**Create**
Define	Explain	Solve	Analyse	Reframe	Design
Describe	Describe	Apply	Compare	Criticize	Create
List	Interpret	Illustrate	Classify	Judge	Plan
State	Summarise	Calculate	Distinguish	Recommend	Formulate
Match	Compare	Sketch	Explain	Grade	Invent
Tabulate	Discuss	Prepare	Differentiate	Measure	Develop
Record	Estimate	Chart	Appraise	Test	Organize
Label	Express	Choose	Conclude	Evaluate	Produce

Illustration (use of action verb w.r.t knowledge dimension and order of thinking):

Use of action verbs	Factual	Conceptual	Procedural	Metacognitive
Remember	List properties of soil	Recognize characteristic of material	Explain working of pump	Identify strategies for report writing
Understand	Summarize features of a new product.	Classify adhesives by toxicity.	Explain assembly instructions.	Predict the behavior of member
Apply	Respond to frequently asked questions.	Provide advice to team members	Carry out pH tests of water samples.	Use modern techniques to get solution
Analyse	Explain the selection of tool/ activity.	Differentiate LOT and HOT	Integrate compliance with regulations.	Assess the project work
Evaluate	Select the appropriate tool	Determine relevance of results.	Judge efficiency of sampling techniques.	Reflect on one's progress.
Create	Generate a log of daily activities.	Assemble a team of experts.	Design efficient project workflow.	Create a learning portfolio.

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Teaching aids methods preparation
Prior to the start of the semester:

The Course Instructor should design the Course Syllabus to be delivered throughout the course in the faculty lesson plan Book.

Topics to be taught outside of the Course Syllabus should also be planned.

To adhere to the Bloom's taxonomy level, Learning Outcomes should be framed and aligned with Course Outcomes (COs).

Determine the content of delivery, the development and use of ICT tool methods (Teaching Aids and Teaching Methods), and the assessment frequency for each Learning Outcome. The information should be clarified in the Lesson Plan (LP).

Teaching Aids	Teaching Methods	
Video	Lecture	Games
Models	Group Discussions	seminars
PowerPoint Presentation	Industrial Visit	Blended classrooms
Charts	Quiz	Flipped class
Animation	Charts	Small group teaching
Others	Demonstrations	Team Teaching
	Case studies and others	

(Implementing the following)

❖ As per NAAC requirements, use course codes rather than subject codes. Within our current system, we need to replace the word "Subject" with course.

B. COs/POs/PSOs mapping procedure at SGRRU

All of the courses must cover all of the POs and PSOs. For a course, we use the CO-PO matrix to map COs to POs and the CO-PSO matrix to map COs to PSOs, as shown below. The various correlation levels are as follows:
  ❖ "1" denotes a slight (low) correlation.
  ❖ "2" indicates moderate (medium) correlation.
  ❖ "3" - Significant (High) Correlation "-" indicates there is no correlation.

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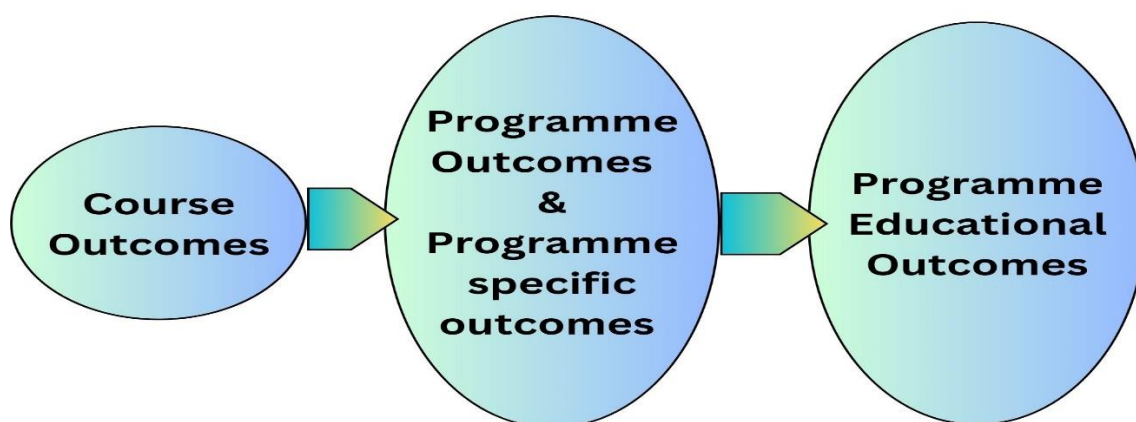
Figure 5 : Relating the outcomes (CO-PO&PSO-PEO)

Following the development of CO statements, CO will be mapped with any potential POs based on the relationship that exists between them. However, the POs are not always associated with a specific CO and may be left blank. In any case, it is required that all POs be mapped to one of the PSO specified in the program.

SAMPLE CO-PO AND CO-PSO MAPPING:

Based on CO statements, the CO-PO mapping has been done with correlation levels of 3, 2, 1 and '-'.The notation of 3, 2 and 1 denotes substantially (high), moderately (medium) and slightly (low). The meaning of '-' is no correlation between CO and PO.

Course Outcome POME-204	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	H											H			
CO2		H	H				L			M			H		
CO3			H	H						M				H	H
CO4				H	L				M		M	H		H	H
Average															
Course Outcome	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PS12	PSO1	PSO2	PSO3
CO1	3												3		
CO2		3	3							2				3	
CO3			3	3			1			2				3	3
CO4				3	1				2		2	3		3	3
Average CO	3	3	3	3	1				2	2	2	3	3	3	3

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MAPPING OF COURSE WITH PO"s and PSO"s FOR BATCH: 2021- 2022

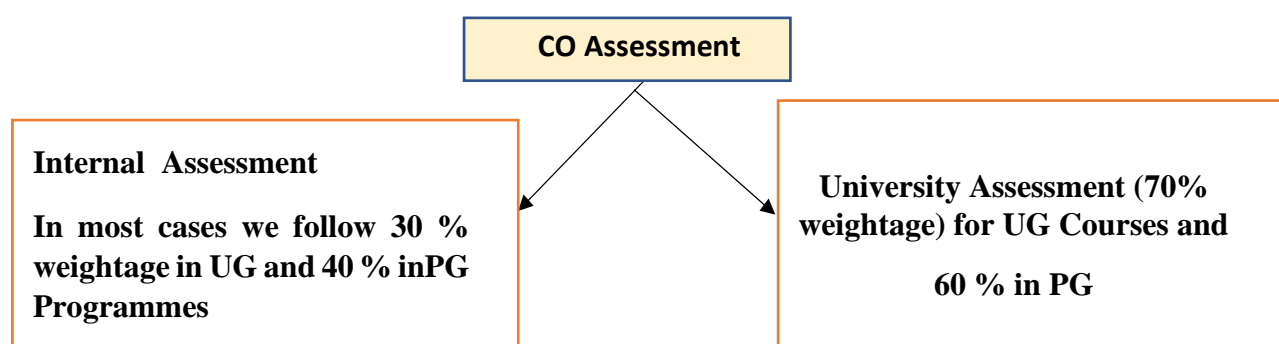| YR/SEM	Course Code	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
FIRST SEM	MPIA -101	3.0	3.0	1.5	2.0	-	-	-	-	-	-		1.0	2.0	-	-
	FAAC 102	3.0	3.0	-	2.0	-	-	-	-	-	-		1.0	3.0	-	-
	MIEC- 103	3.0	2.2	2.3	-	-	-	-	2.0	2.0	-		2.0	3.0	2.0	-
	CMSK 104	2.0	2.0	3.0	-	-	-	-	-	2.0	2.0		2.0	1.0	-	-
II ND SEM	COAC-201	3.0	3.0	-	2.0	-	-	-	-	-	-		1.0		-	-
	BSLA –202	1.0	2.0	1.8	1.0	1.3	-	-	-	-	-	-	-	2.0	-	-
	BSFA -203	1.8	1.0			-	-	-	-	-	-	-	-	2.0	-	-
	POME-204	1.8	1.0	1.5	1.5	-	1.0	-	-	-	-	-	-	2.0	-	-
	ENST – 205	2.8	2.7	2.3	-	-	-	-	-	-	-	-	-	3.0	-	-
	BSOZ-206	2.5	1.8	-	1.7	1.0	-	-	-	-	-	1.0	-	3.0	-	-
III RD SEMESTER	DTLP- 301	1.8	1.8	1.7	-	1.8	-	-	-	-	-	-	1.0	2.0	-	-
	COLA- 302	1.8	1.8	1.2	1.2	-	-	-	-	-	-	-	-	3.0	-	-
	HRSM 303	2.7	2.2		2.7	-	-	-	-	-	2.5	-	-	3.0	-	-
	BSTA-304	1.8	1.8	1.0	1.0	-	-	-	-	-	-	-	1.0	-	3.0	3.0
	COAF- 304	2.7	1.0	1.0	-	1.0	-	-	-	-	-	-	-	3.0	-	-
	ECOM-305		1.8	1.5	1.5	-	-	-	-	-	-	-	1.3	2.0	-	-
IV SEMESTER	COAC 401	3.0	3.0	2.7	-	-	-	-	-	-	-	-	-	3.0	-	-
	CAIB 402	3.0	3.0	3.0	2.4	-	-	-	-	-	-	-	-	3.0	-	-
	BSMA 403	3.0	3.0	3.0	3.0	3.0	-	-	-	-	-	-	-	3.0	-	-
	BRMP 404	3.0	3.0	2.9	2.7	3.0	-		2.5		2.8	3.0	2.9	1.0	-	-
	ETDP-405	3.0	2.9	2.8	2.6	3.0	-	-	2.5		2.8	3.0	2.9	3.0	-	-
VTH SEMESTER	POMA-501	3.0	2.5	2.0	2.5	2.0		2.0	-		3.0	-	2.0	3.0	-	-
	FAMA-502	3.0	3.0	3.0	2.0	2.0	-	-	-		-	-	-	3.0	-	-
	CTAX-503	2.5	2.8	2.3	2.8			-		-	-	-	-	3.0	-	-
	IECO- 504	-	-	-	-		3.0	-	3.0		2.7	2.5	3.0	-	3.0	3.0
	PROJ -505	3.0	3.0	3.0	3.0	3.0	-	2.0			2.8	2.5	2.2		3.0	3.0
VI SEMESTER	ACOG- 601	2.8	2.8	2.6	2.6	2.0	-	3.0	-	-	2.7	-	2.6	3.0	-	-
	INTL – 602	2.2	2.0	3.0	2.5	2.0	-	-	-		-		2.0	3.0	-	-
	POIN – 603	2.7	2.5	2.5	2.5	3.0	-	-		-	-	-	3.0	1.0	-	-
	FMIS – 604	2.7	3.0	2.5	3.0	-	-	-	2.0	3.0	2.7	2.8	2.6		3.0	3.0
	ADPS - 605	2.6	2.2	2.3	3.0	2.0	-	-	-		2.0	2.0	2.5	3.0	-	-

C. Assessment Process for CO Attainment:

For the evaluation and assessment of CO's and PO's, rubrics are used. The rubrics considered here are given below:

What exactly is a rubric?

A scoring guide with criteria for evaluating students' work in relation to one or more of the POs, as well as a rating scale indicating various levels of performance. Rubrics are used to assess how well students met CO or PO rather than how well they performed in comparison to their peers.

Typically include measurable descriptors that define expectations for each criterion at each level of performance.

CO Assessment

Internal Assessment

In most cases we follow 30 % weightage in UG and 40 % inPG Programmes

University Assessment (70% weightage) for UG Courses and

60 % in PG

Course Outcome is evaluated based on the performance of students in internal assessments and in university examination of a course. Internal assessment contributes 30% and university assessment contributes 70% to the total attainment of a CO. Although the ratio in different courses may differ but , It has to be in line with the BOS of different schools. The current distribution in SGRRU is as under

	INTERNAL		EXTERNAL	
	UG	PG	UG	PG
School of Nursing	25	25	75	75
School of medical sciences	20	15	80	80
School of Management	30	40	70	60
School of Basic and Applied sciences	30	40	70	60
School of CA & IT	30	40	70	60
School of Humanities	30	40	70	60
School of Agricultural Sciences	30+20	30+20	50	50
School of Education	30	40	70	60
School of Paramedical Sciences	30	30	70	70
School of Pharmacy				
B. Pharm	25		75	
Pharm D/ Pharm d (PB)	30	30	70	70
D. Pharm	20		80	
M.Sc Pharmaceutical Chemistry		40	60	

ATTAINMENT OF OUTCOMES AND OBJECTIVES

OBE organises the entire educational system around what is deemed necessary for learners to successfully complete at the end of their learning experiences. Each student should have accomplished the goal by the end of the educational experience. In OBE, there is no single teaching or assessment style; rather, classes, opportunities, and assessments should all help students achieve the specified outcomes.

The achievement of all COs in a programme correlates to the achievement of the respective POs and PSOs.

The final attainment levels of POs and PSOs for a batch of students from a branch over the course of three years (for UG) or two years (for PG) indicate the effectiveness of the programme implemented.

Because POs are primarily based on GAs, achievement of POs would imply achievement of GAs by pass-outs.

Achievement of POs and additional training/work for four to five years after graduation would result in the achievement of PEO.

The following instructional activities are used to achieve the course outcomes:

- ❖ Projects
- ❖ Tutorials
- ❖ Laboratory Experiments
- ❖ Field work
- ❖ Discussions
- ❖ Lectures
- ❖ Portfolios
- ❖ Educational Tours
- ❖ Assignment
- ❖ Quiz
- ❖ Log Book
- ❖ Industrial Training
- ❖ Demonstration
- ❖ Presentation
- ❖ Case study
- ❖ Practical
- ❖ Debates

MEASUREMENT OF OUTCOME ATTAINMENT

For OBE implementation, the desired or defined outcomes must first be determined, and then the programme curriculum, teaching and learning methodology, and supporting facilities must be designed in accordance with those outcomes. Various measurement methods are used throughout the programme to assess outcome achievement.

The assessment of outcome attainment is heavily reliant on the student's performance output or marks obtained in the final theory and practical examination, test, and assignment submission, which indicate the student's learning achievements. As a result, it is necessary and critical to implement a proper attainment method in order to measure student learning achievement and predict future performance.

There are various methods for assessing student learning. In this section, we will discuss the various types of assessment approaches utilized by the programmes under university as well as the various frameworks for interpreting the results.

- ❖ Internal Assessment
- ❖ Assignments/ Quiz
- ❖ Case studies
- ❖ Semester End Examination
- ❖ Laboratory work
- ❖ Project work
- ❖ Field Surveys
- ❖ Internship programme.
- ❖ Programme exit survey
- ❖ Alumni survey
- ❖ Employer survey
- ❖ Course expert committee
- ❖ Programme Assessment and Quality Improvement Committee
- ❖ Advisory Board
- ❖ Faculty meetings
- ❖ Professional societies
- ❖ Industry experts

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ASSESSMENT PROCESS FOR OVERALL PO AND PSO ATTAINMENT

The description of Assessment tools used for the evaluation of program outcomes is given in **Table A,** The various assessment tools used to evaluate COs and the frequency with which the assessment processes are carried out are listed **in Table B.**

In each course, the level of attainment of each CO is compared with the predefined targets.

Table A : Mapping of assessment tools to POs/PSOs with frequency

Mode of Assessment	AssessmentTool	Description	Evaluation of Course Outcomes	Related POs/PSOs	Frequency of assessment
Direct	Theory Internal and External Examinations	Two to three written examinations to be conducted and its average marks are considered.	The questions in the internal examinations and assignment sheets are mapped against COs ofrespective course. The questions for two internal examinations and Assignments are framed in such a way to cover all course outcomes.	PO 1 to PO 12	Two per Semester
Direct	Assignments	Two assignments are given for each course for continuous assessment. Average marks are considered.	The final attainment for each CO under direct assessment is calculated by taking	PO 1 to PO 12	Continuous
			average of the CO attainments in Internal ,external Examinations and other Assignments.		
Direct	Day to day evaluation	The day to day Evaluation is considered.	The final attainment for each CO is	PO 1 to PO 12	Continuous
Direct	Internal Practical Examination	Internal examination is conducted in labcourse.	calculated by taking average of the % evaluation attainment from day to day and Internal Lab Examination.	PO 1 to PO 12	One per Semester

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Direct	Industry Oriented Mini-Project	To test student's concepts design, creative thinking and independent analysis.project reviews are conducted	Two Internal project reviews are conducted and average of these two review assessments are considered.	PO 1 to PO 12	One project review in any semester
Direct	Comprehensive Viva Voice Examination	To assess the student's technical and analytical skills in the domain and also communication skills.	The assessment is carried out by HoD and three senior faculty members along With student's overall academic performance.	PO 1 to PO 12	All programmes
Indirect	Alumni Survey	This survey givesthe opinion of the student on the attainment of course	At the end of the programme Alumni survey is collected from Alumni and Considered for the PO attainment underIndirect assessment.	PO 1 to PO 12	At the end of each course
Indirect	Graduate Exit Survey	This survey gives the opinion of the graduate on the attainment of Programme outcomes	At the end of the programme, graduate exit survey is collected from the graduates and considered for the PO attainment under indirect assessment.	PO 1 to PO 12	At the end Of the program

Category	Level of Performance		
	3	2	1
Performance in Lab	Able to perform Experiment independently within prescribed time The result is close or to standard value.	Able to perform experiment within prescribed time Able to perform experiment within prescribed time	Able to perform experiment within prescribed time
Level of Understanding & quality of Submission	Able to show strong theoretical background of experiment Able to interpret proper data to reach Presentation , Calculations ,Conclusions/observations/ comments done clearly	Partially show strong theoretical background of experiment Partially able to interpret data to reach conclusion. Shortfalls found in Presentation , Calculations ,Conclusions/observations	Lack of theoretical background of experiment or lack of interpretation of data Report submitted but not written properly

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Internal Mid Tests: Internal tests serve to encourage students to keep up with course content coveredin class. Two written examinations are conducted and its average marks are considered.

For theory subjects, during a semester there shall be 2 mid-term examinations. Each mid-term examination consists of one objective paper, one essay paper and one Assignment.

The objective paperand the essay paper shall be for 10 marks each with a total duration of I Hour 30 minutes (30 minutesfor objective and 60 minutes for essay paper). The Objective paper is set with 20 bits of multiple choice, filling the blanks and match type of questionsfor a total of 10 marks. The essay paper shall contain 4 full questions (one from each unit) out of which,the student has to answer 2 questions, each carrying 5 marks. While the first mid-term examination shall be conducted on 1 to 2.5 units of the syllabus, the second mid-term examination shall be conducted on 2.5 to 5 units. Five (5) marks are allocated for Assignments (as specified by the subjectteacher concerned). The first Assignment should be submitted before the conduct of the first mid-examination, and the second Assignment should be submitted before the conduct of the second mid- examination.

The total marks secured by the student in each mid-term examination are evaluated for 20 marks + 10 for assignment, and the average of the two mid-term examinations + assignments shall be taken as the final marks secured by each candidate.

The questions in the internal examinations and assignment sheets are mapped against COs ofrespective course. The questions for two internal examinations and Assignments are framed in such away to cover all Course Outcomes.

The questions are framed in such a way that it should satisfy Bloom's Taxonomy, wherein each question is mapped to the appropriate course outcome of the respective course, which is evaluated based on the set attainment levels by the Department.

University examination: These End-Semester Examinations are of 3- hour duration and cover the entiresyllabus of the course. It would generally satisfy all course outcomes for a particular course. The COsare evaluated based on the set attainment levels.

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Assessment Tool		
Internal Assessment	Term 1 and Term 2	
	Presentation Viva-voce	
	Report	

Assessment tools used to evaluate project work are:

Assessment Tool		Evaluator
Internal Assessment	Seminar on project	Internal project Review Committee
External Assessment	Final Report	University
	Presentation and Viva - Voce	University

(Table B)   **Assessment Method**

Midterm

- **Attainment Level 1**: 50% students scoring more than class average marks out of the relevant maximum marks.
- **Attainment Level 2**: 60% students scoring more than class average marks out of the relevant maximum marks.
- **Attainment Level 3**: 70% students scoring more than class average marks out of the relevant maximum marks.

End Sem (based on board average percentage marks in the final examination)

- **Attainment Level 1**: 50% students scoring more than class average marks out of the relevant maximummarks.
- **Attainment Level 2**: 60% students scoring more than class average marks out of the relevant maximummarks.
- **Attainment Level 3**: 70% students scoring more than class average marks out of the relevant maximummarks.

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Attainment Levels (Indirect) Course End Survey

- **Attainment Level 1**: Average score of 50 % students is more than 3 (on a scale of 5).
- **Attainment Level 2:** Average score of 60% students is more than 3 (on a scale of 5).
- **Attainment Level 3:** Average score of 70% students is more than 3 (on a scale of 5).

Attainment /Award Sheet

UG   QUESTION PAPER AND ITS COORELATION WITH CO, PO PSO

		COMPULSORY QUESTION											TOTAL CO1	QUESTION TO ATTEMPT (I OF 2)								QUESTION TO ATTEMPT (I OF 2)				TOTAL CO2	TOTAL CO3	TOTAL CO4	TOTAL CO5	TOTAL CO6
		SECTION A												SECTION B								SECTION C								
	STUDENT	CO1												CO4	CO4		CO5		CO6			CO2		CO3						
SR.NO	ENROLLMENT NO	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j		2a	2a	2b	2b	2c	2c	2d	2d	3a	3a	3b	3b					
	TOTAL MARKS OUT OF	2	2	2	2	2	2	2	2	2	2	20	5	5	5	5	5	5	5	5	15	15	15	15	15	15	10	5	5
1																													
2																													
3																													
4																													
5																													

PG   QUESTION PAPER AND ITS COORELATION WITH CO, PO PSO

		COMPULSORY QUESTION											TOTAL CO1	QUESTION TO ATTEMPT (I OF 2)								QUESTION TO ATTEMPT (I OF 2)				TOTAL CO2	TOTAL CO3	TOTAL CO4	TOTAL CO5	TOTAL CO6
		SECTION A												SECTION B								SECTION C								
	STUDENT	CO1												CO4	CO4		CO5		CO6			CO2		CO3						
SR.NO	ENROLLMENT NO	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j		2a	2a	2b	2b	2c	2c	2d	2d	3a	3a	3b	3b					
	TOTAL MARKS OUT OF	1	1	1	1	1	1	1	1	1	1	10	5	5	5	5	5	5	5	5	15	15	15	15	15	15	10	5	5
1																													
2																													
3																													
4																													
5																													

Pharm. D /Pharm. D (PB) QUESTION PAPER AND ITS COORELATION WITH CO, PO — Internal exam

		ATTEMPT ALL					QUESTION TO ATTEMPT (I OF 2)				QUESTION TO ATTEMPT (I OF 2)						TOTAL CO1	TOTAL CO2	TOTAL CO3	TOTAL CO4	TOTAL CO5	TOTAL CO6
		Short answers					long answers				short Question											
ENROLLMENT NO	STUDENT ENROLLMENT NO	CO1					CO3		CO4		CO2		CO5		CO6							
		1a	1b	1c	1d	1e	1a	1b	2a	2b	Ia	Ib	1c	2d	1e	1f						
	TOTAL MARKS OUT OF	2	2	2	2	2	5	5	5	5	4	4	3	3	3	3	10	4	5	5	3	3

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Question paper sample

Instructions to candidates

All Sections are compulsory.
Section A contains 10 Very Short Answer Type questions/ MCQ's carrying weightage of 2 marks each.
Section B contains 4 Short Answer Type questions carrying weightage of 5 marks each.
Section C contains 2 Descriptive Answer Type questions carrying s weightage of 15 marks each,

SECTION A

	CO	BL
i)	CO1	
ii)	CO1	
iii)	CO1	
iv)	CO2	
iv)	CO2	
v)	CO5	
vi	CO4	
vii)	CO1	
viii)	CO2	
ix)	CO3	
x)	CO3	

Section B

Q.2 Attempt any four $(4 \times 5) = 20$

	CO	BL
i)	CO3	
ii)	CO4	
iii)	CO5	
iv)	CO5	
v)	CO4	
vi)	CO3	

Section C

Q.3 Attempt any two $(2 \times 15) = 30$

	CO	BL
i)	CO2	
ii)	CO2	
iii) "	CO1	
iv	CO1	

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Overall Assessment Process of COs/POs/PSO

PO/PSO assessment is done by giving 80% weightage to Direct assessment and 20% weightage to Indirect assessment. Direct assessment is based on CO attainment, where 70% weightage (or as per different school regulations) is given to attainment through university exam and 30% weightage is given to attainment through internal assessments. Indirect assessment is done through Graduate exit survey and Alumni survey where Graduate exit survey and Alumni survey is given a weightage of 50% each
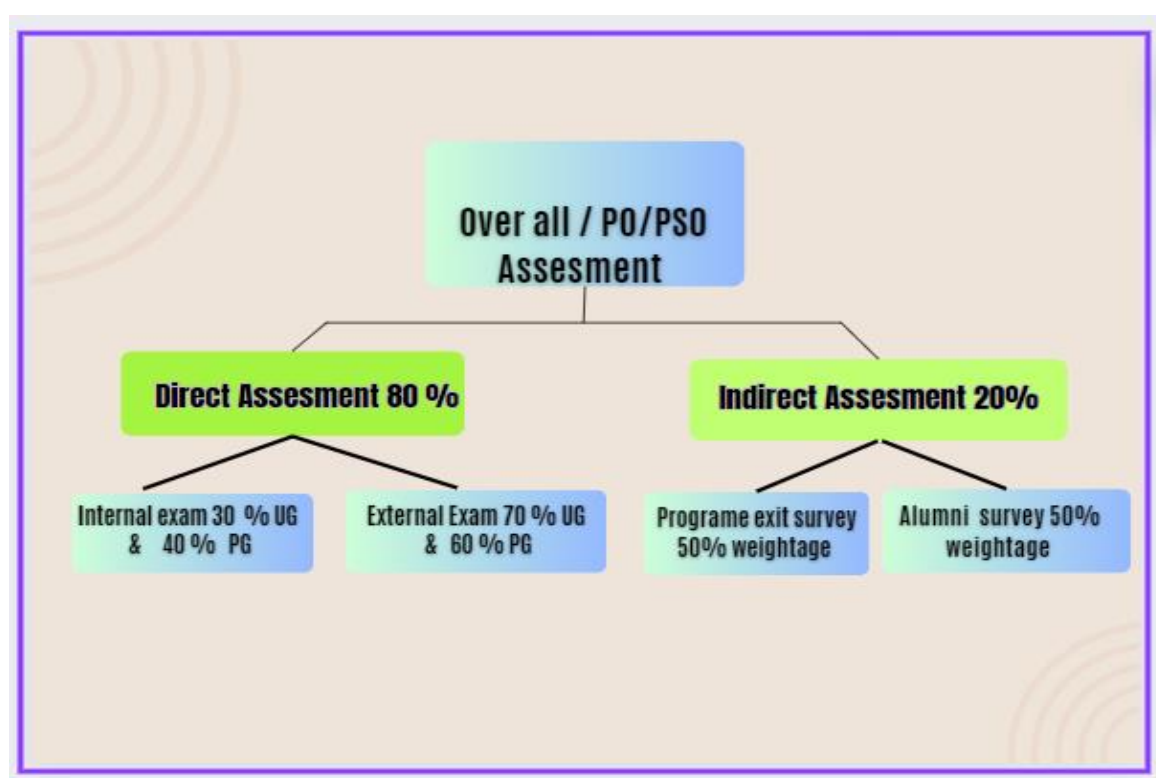
Figure 6: Overall CO/ PO/PSO Assessment

PO/PSO assessment is done by giving 80% weightage to Direct assessment and 20% weightage to Indirect assessment. Direct assessment is based on CO attainment, where 70% weightage (or as per different school regulations) is given to attainment through university exam and 30% weightage is given to attainment through internal assessments. Indirect assessment is done through Graduate exit survey and Alumni survey where Graduate exit survey and Alumni survey is given a weightage of 50% each

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PO, PSO ASSESSMENT TOOLS					
		Course Type	**Assessment Tools**		**Minimum Frequency**
Direct (80% weightage)	**CO Assessment**	**Theory**	Internal Evaluation	Internal mid Tests	Twice per course
				Assignments	Twice per course
			University Exam		Once per course
		Practical	Internal Evaluation	Daily	Every lab
				Internal Lab exam	Once per course
			University Exam		Once per
		English Communication Skills	Internal Evaluation	Group Discussion	Once per course
				Presentation Skill	Once per course
				Writing skill	Once per course
			University Exam		Once per course
		Mini project	Internal Evaluation - Reviews		Once per course
			University Viva voce		Once per course
		Comprehensive Viva	Internal Evaluation		Once per course
		Seminar	Presentation		Once per course
Indirect 20% Weightage	**Surveys**	Graduate Exit Survey 10%			At the end of the Program
		Alumni Survey 10%			Once per year

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Indirect assessment feedback form from all stakeholders.

The exit survey form should permit receiving feedback from students on all the COs. Computationof indirect attainment of COs is based on the perceptions of students! Hence, the percentage weightage to indirect attainment is kept at a low value, say 20%.

The proportional weightages for different courses will be as per the academic regulations in force. Proportions of 20:80, 25:75, 30:70, 40:60, 50:50 are all possible

Taking feedback from all stakeholders at the end of the semester.

Feedback Form for POs and COs formation: -
It is suggested that in order to maintain the uniformity, the IQAC cell shall provide the format of Feedback form to the students, alumni and stake holders for the formulation of POs and COs to all the schools of SGRRU.

Enrollment number	Student Name		TOTAL CO1	TOTAL CO2	TOTAL CO3	TOTAL CO4	TOTAL CO5	TOTAL CO6
	TOTAL MARKS OUT OF		15	20	25	15	10	15
R190969020.	Malika Payal		15	18	23	15	10	13
R190969021.	Manisha Rajput		14	18	22	15	10	13
R190969025.	Niharika Sharma		15	18	23	15	10	13
R190969033.	Radhika Rana		14	18	23	15	9	13
R190969040.	Shruti Sharma		15	18	22	15	10	13
R190969042.	Sneha Kumari		15	18	23	15	10	13
R190969048.	Vaishali Gurung		15	18	22	15	10	13
R210970001	Akansha Rajput		15	14	19	15	10	13
R210970002	Ankita Negi		15	18	23	15	10	13
R210970003	Rajni Nautiyal		15	17	22	15	10	13
R210970005	Dilraj Kaur		11	14	19	15	10	13
R210970006	Pooja		15	18	22	15	10	13
R210970007	Puja Sonkar		15	18	22	15	10	13
R210970008	Namrata		11	14	18	15	9	12
	Total marks		200	239	303	210	138	181
	Average		14	17	22	15	10	13
Students above OR = average			11	11	11	14	12	13
%			78	78	78	100	85	92
			CO1	CO2	CO3	CO4	CO5	CO6
ATTAINMENT LEVEL = 0								
ATTAINMENT LEVEL = 1 (>= 50%)								
ATTAINMENT LEVEL = 2 (>=60%)								
Attainment LEVEL = 3 (>=70%)								
	Arverage attainment		3	3	3	3	3	3
OVERALL CO ATTAINMENT								
Closing the loop at CO ATTAINMENT LEVEL								

CO LEVELS			Target	Attainment	Gap Analysis	Action plan for improvement	Modified target
CO1			2.4	3	0.6		3
CO2			1.9	3	1.1		3
CO3			2.4	3	0.6	Performance of students is more than expected	3
CO4			2.4	3	0.6		3
CO5			2.6	3	0.4		3
CO6			1.8	3	1.2		3

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Contribution of CO Attainment in PO Attainment

Illustration: Let us assume CO-PO mapping of a course

CO	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	3														
2		3													
3		3		1				3	2						
4		3		1						1					
5			1							1		1			
6				1											
Average	3	3	1	1				3	2	1		1			

Overall Attainment of CO is as Below: Overall CO Attainment 80% of added ESE Examination and 20 % of Indirect Assessment.

CO	Direct Tool Attainment (A)	Indirect Tool Attainment (B)	Overall Co Attainment= 0.8 x A + 0.2 XB
1	3	2	2.8
2	3	3	3
3	2	3	2.2
4	2	2	2
5	2.6	3	2.68
6	3	2	2.8

Hence, Final contribution of CO attainment in PO attainment can be done using the below formula, CO Contribution = Overall CO attainment X (CO-PO Mapping weightage/ no of allotted weightage in CO -PO Mapping Matrix (Average)

CO	PO												PSO		
	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	2.8														
2		3											3		
3		3		2.2				2.2	2.2				2.2		
4		3		2						2					
5			2.68							2.68		2.68	2.68		
6				2.8											
Average	2.8	3	2.68	2.33				2.2	2.2	2.34		2.68	2.62		

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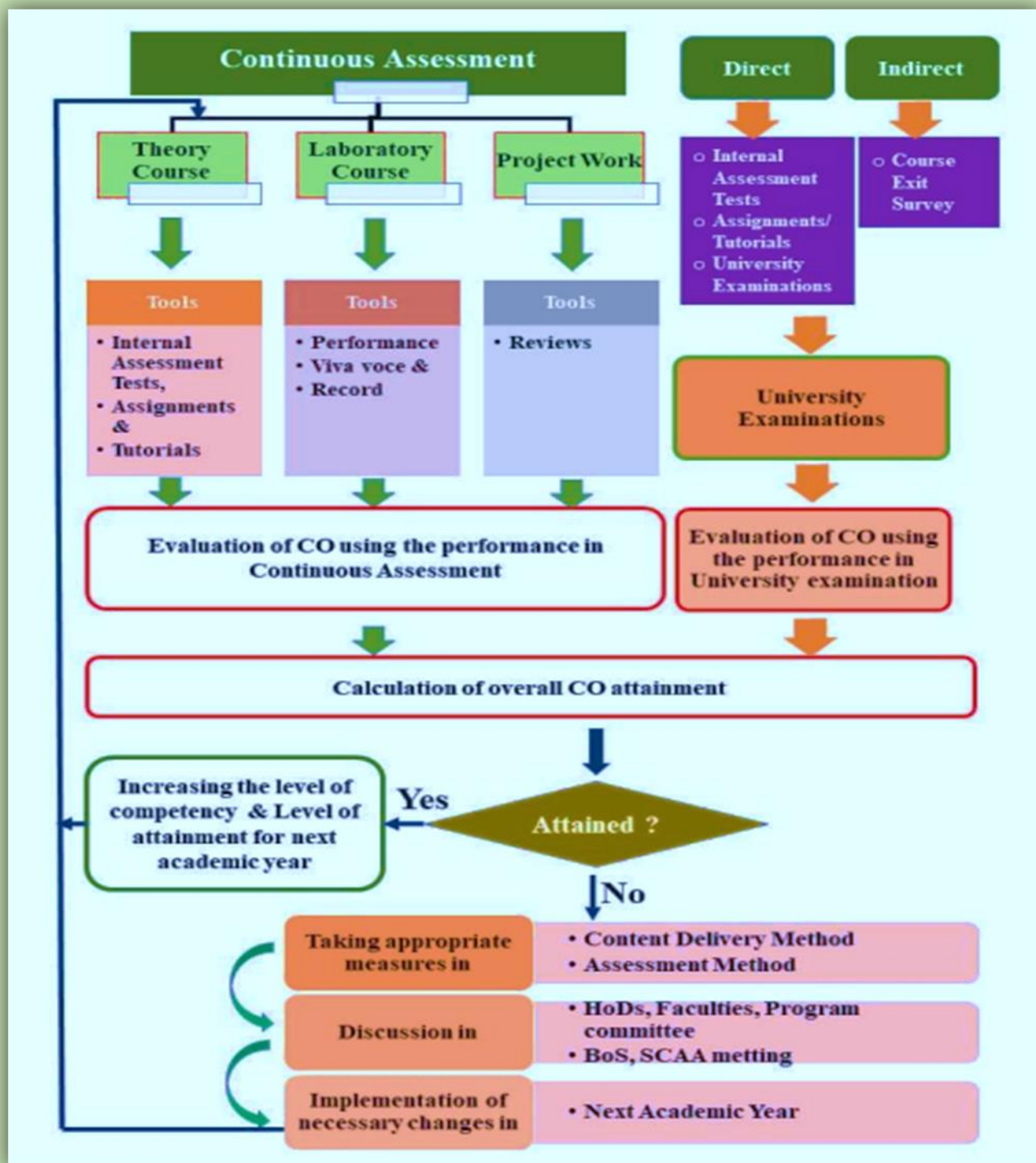
Figure 7: Process of CO Attainment

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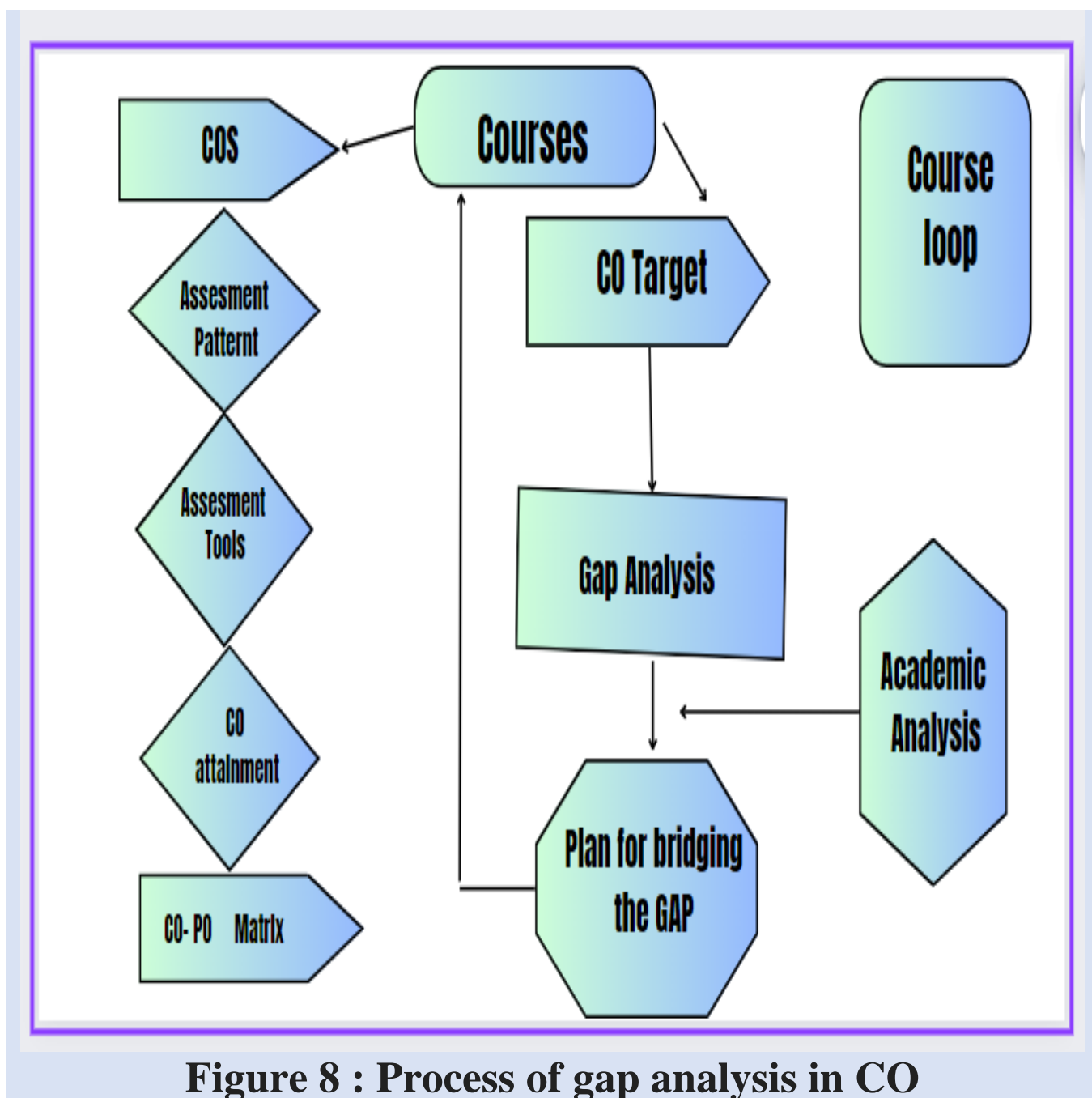
Figure 8 : Process of gap analysis in CO

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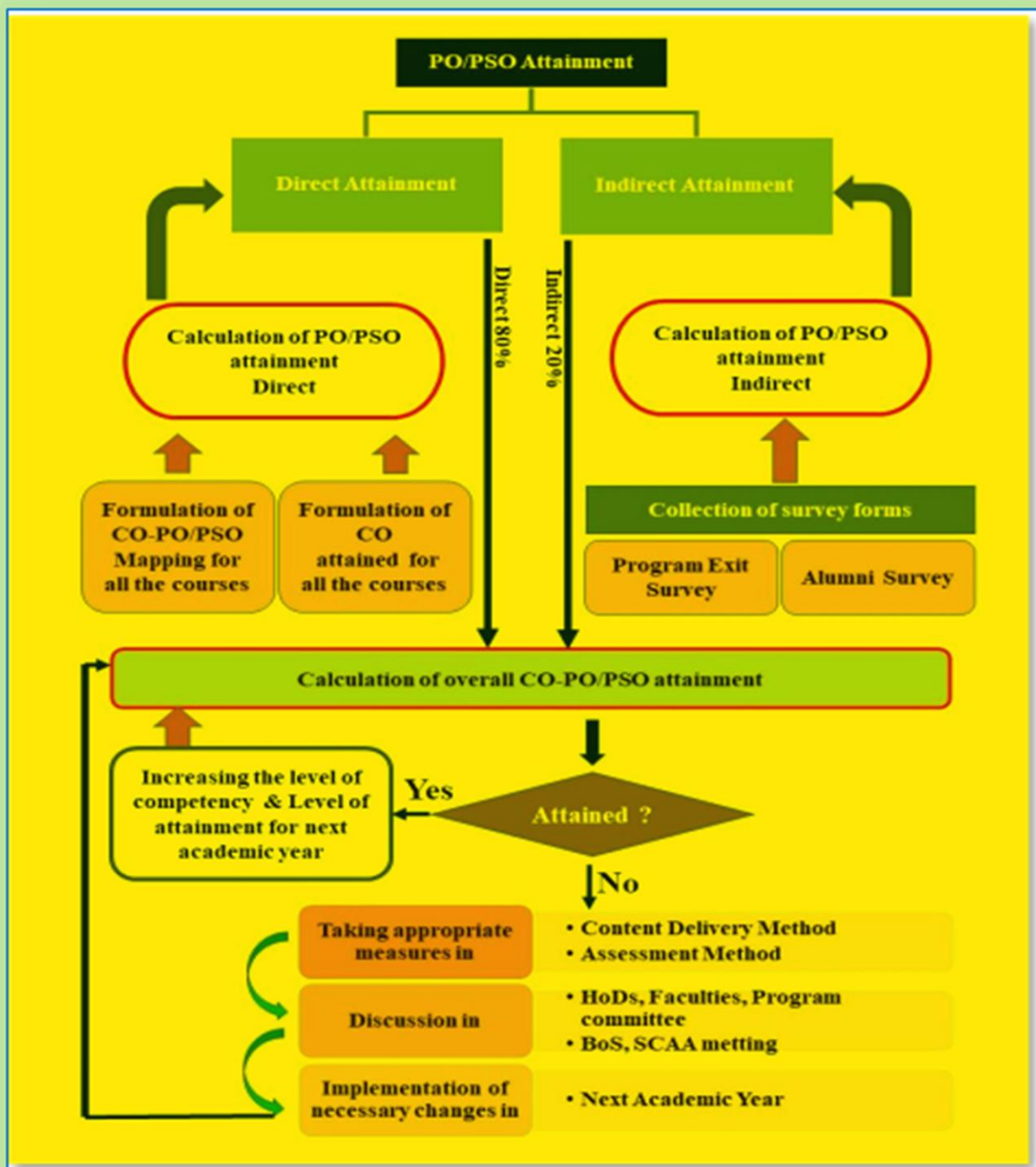
Figure 9: Process for PO/PSO Attainment

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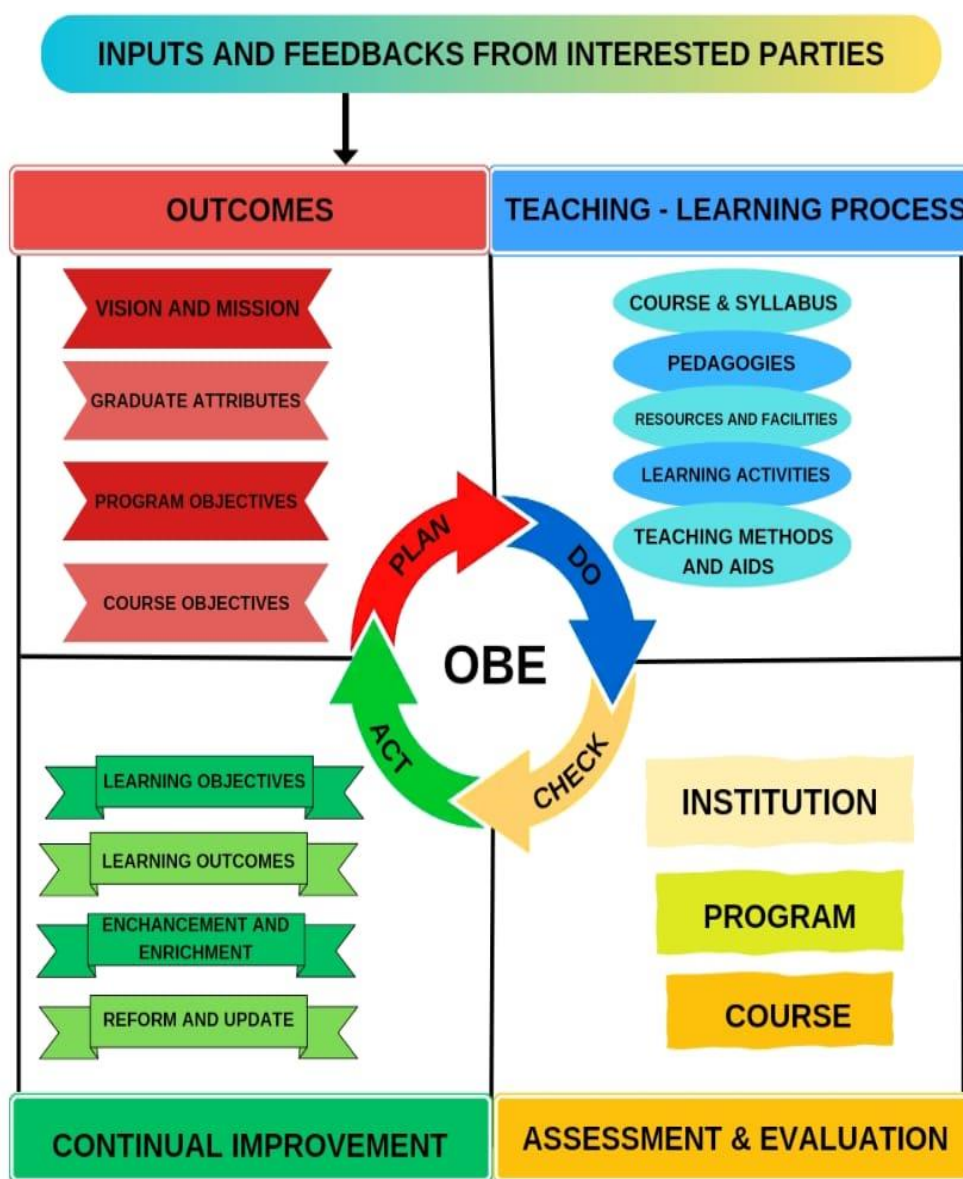
Figure 10: OBE Process

SHRI GURU RAM RAI UNIVERSITY

Patel Nagar, Dehradun-248001, Uttarakhand, India

[Estd. by Govt. of Uttarakhand, vide Shri Guru Ram Rai University Act no. 03 of 2017 & recognized by UGC u/s (2f) of UGC Act 1956]

STUDENTS FEEDBACK FORM FOR THE ACADEMIC SESSION 2021-2022 ON CURRICULUM

Name :	Program ....
School/ Department:	Section ....
Semester/year:	

(Rating: 5-Excellent, 4-Very Good, 3- Good, 2- Average, 1- Below Average)

1. Rate whether courses offered are relevant to the Programme
   Excellent ☐   very good ☐   Good ☐   satisfactory ☐   Poor ☐

2. How do you rate CBCS/ECS /other pattern in the school
   Excellent ☐   very good ☐   Good ☐   satisfactory ☐   Poor ☐

3. Rate transparency in evaluation system
   Excellent ☐   very good ☐ Good ☐   satisfactory ☐   Poor ☐

4. Rate students participation in self and extra curriculum learning

   Excellent ☐   very good ☐ Good ☐   satisfactory ☐   Poor ☐

5. Rate usefulness of the course in terms of knowledge concepts and analytical abilities and enhancing perspectives

   Excellent ☐   Very good ☐ Good ☐   satisfactory ☐   Poor ☐

6. Rate Applicability/relevance of courses taught to real life situations & career advancement

   Excellent ☐   very good ☐   Good ☐   satisfactory ☐ Poor ☐

7. Rate Food outlets/canteens facility in university

   Excellent ☐   very good ☐ Good ☐   satisfactory ☐   Poor ☐

8. Rate your experience with library and reading material support

   Excellent ☐   very good ☐   Good ☐   satisfactory ☐   Poor ☐

9. Rate the Integration of cross cutting issues like gender equality, ethics, and environment sustainability

   Excellent ☐ very good ☐   Good ☐   satisfactory ☐   Poor ☐

10. Availability of opportunities to participate in internship and field work

    Excellent ☐   very good ☐   Good ☐   satisfactory ☐   Poor ☐

11. Rate the usage of teaching aids and ICT tools in the class by teachers

    Excellent ☐   very good ☐   Good ☐   satisfactory ☐   Poor ☐

12. Please give your suggestion for improvement in curriculum

SIGNATURE OF STUDENT   **SIGNATURE OF DEAN**

SHRI GURU RAM RAI UNIVERSITY

Patel Nagar, Dehradun-248001, Uttarakhand, India

[Estd. by Govt. of Uttarakhand, vide Shri Guru Ram Rai University Act no. 03 of 2017 & recognized by UGC u/s [2f] of UGC Act 1956]

TEACHERS FEEDBACK FORM FOR THE ACADEMIC SESSION 2020-2021 ON CURRICULUM

Name OF SCHOOL:
Name OF FACULTY:
DESIGNATION:

Note- Your valuable opinion and suggestions are solicited for further improvement of University. Against each statement five point scale is given. Your response is kept confidential and used only for stated purpose.

(Rating: 5- Strongly Agree, 4- Agree, 3- Neutral, 2- Disagree, 1- Strongly Disagree)

1. How do you rate CBCS/ECS pattern in context of students.
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

2. Credit allocation is rational to the coverage of course curriculum
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

3. Aims and objectives of curriculum are well defined Excellent
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

4. Sufficient reference material related to curriculum is available in the library.
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

5. I am given enough freedom to contribute my ideas on curriculum design and development
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

6. Curriculum is focused on skill development and entrepreneurship
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

7. Continuous evaluation system in the context of subject knowledge acquired by the students
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

8. The course content has increased students knowledge and interest in subject area
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

9. The syllabus needs modification.
   Strongly agree ☐   Agree ☐   Neutral ☐   Disagree ☐   Strongly Disagree ☐

10. Suggestions for the improvement in curriculum design and development

FACULTY SIGNATURE   DEAN SIGNATURE

Shri Guru Ram Rai University

(Estd. by Govt. of Uttarakhand vide Shri Guru Ram Rai University
Act. No. 03 of 2017 & Recognized by UGC u/s 2(f) of UGC Act 1956)
Campus: Patel Nagar & Pathri Bagh, Dehradun-248001, Uttarakhand

Alumni feedback
form` (2021-2022)

Name	
Specialization and year of Graduation	
Address for communication	
	City state
PIN Code	Employment details
Email	
Company	

Kindly rate the following criteria on the scale of 1-5. Your genuine response will be helpful fot the continuous quality improvement of our UG /PG Programme

1. Excellent	2.VeryGood	3.Good	4.Average	5.Poor

S.No	Criteria	Rating
1	Over all rating for the coverage of POs, COs and PSO's	
2	Extent of Curriculum meeting industry needs	
3	Your ability of apply knowledge to design process to meet desired specifications and needs	
4	Benefit from value added certification , workshops, seminars, training programmes conducted during your course	
5	Your ability to use and apply your knowledge ,skills and modern tools necessary for practicing in your organization	
6	Benefit from communication skills ,presentation skills and leadership qualities gained from co- curricular and extra curricular activities in your career ./Higher education	
7	Your ability to engage in to resolve contemporary issues and acquire lifelong learning	
8	Competence to function on multidisciplinary team in your job	
9	Benefit from skill attained ,to create, acquire and apply appropriate techniques resources and modern IT Tools to show professional efficiency.	
10	Extent of ethical, social cultural and environmental values inculcated ,helping you to relate issues with societal needs.	

Suggestions for improvement

_____
_____
_____
_____
_____
_____
_____
_____

Student Name   **Student Signature**   **Date**

OBE Manual

SHRI GURU RAM RAI UNIVERSITY
Quest for Excellence