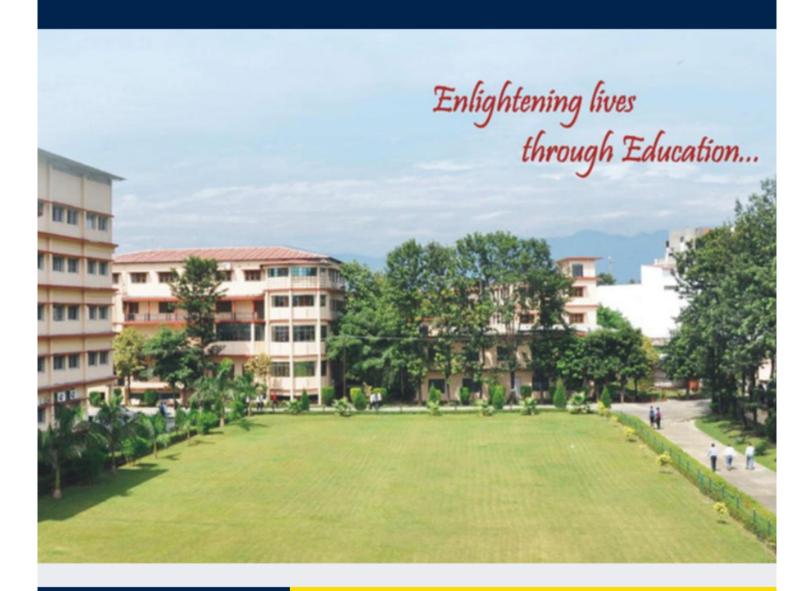


OBE Manual SGRRU



SHRI GURU RAM RAI UNIVERSITY Patel Nagar, Dehradun-248001, Uttarakhand, India



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





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.





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.

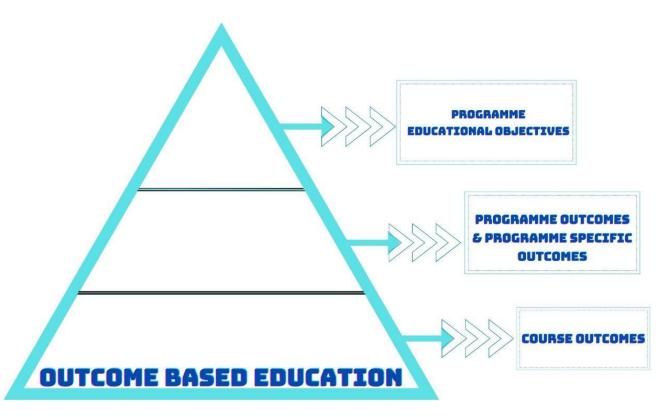


Figure 1: Outcome based education



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OBE MANUAL

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 to the 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



- ❖ 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.

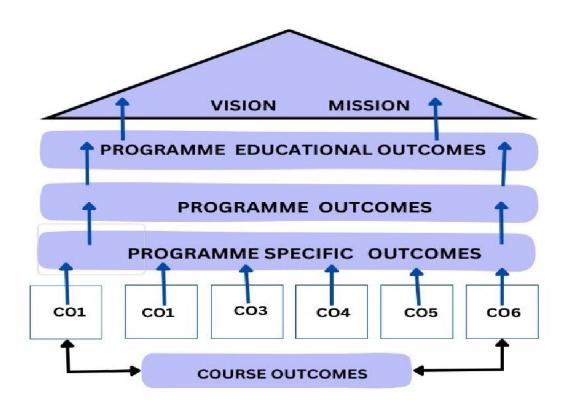


Figure 2: Key Parameters of Outcome Based Education



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.

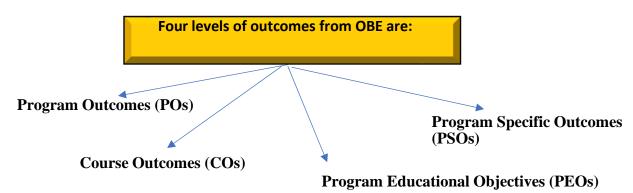
Course End Survey Analysis (CESA): (Indirect method) is a procedure for measuring COs and POs indirectly from course outcome components.

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



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:



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.

<u>The Process for Establishing the PO</u>"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 are used 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.)



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 of the 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 synthesis of 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 engineering practice.

• 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.



• 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-disciplinary environments.

• 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



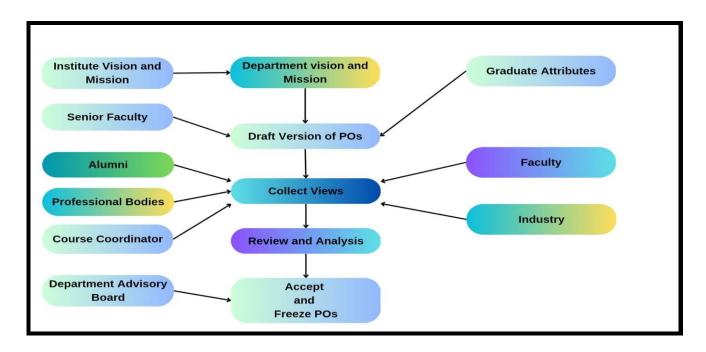


Figure 3: Process to Define Program Outcomes of the Department

a. Program Specific Outcomes (PSOs): are statements that describe what the graduates 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.



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	Label Choose		What	Which					
Why	How	Show	Relate	When					
Find	Find Tell		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.



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

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	Categorize Agree		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	pute 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	agine Elaborate Create		Combine	Solve				
Predict	Improve		Formulate	Design				



REVISED BLOOM'S TAXONOMY

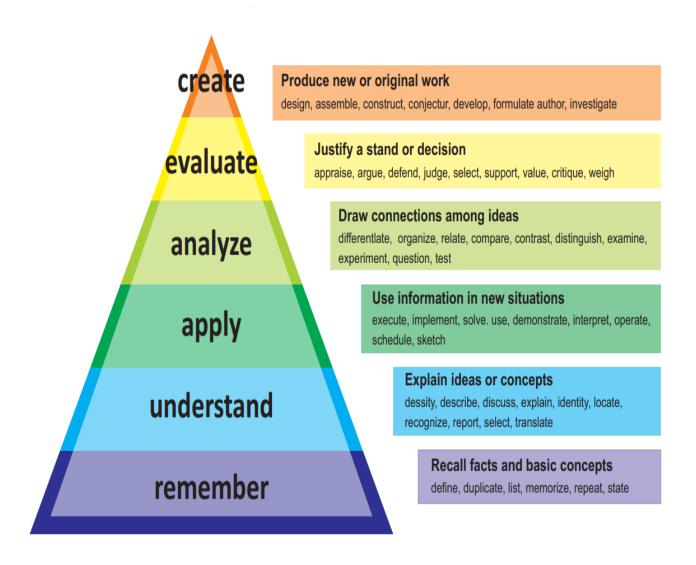


FIGURE 4: REVISED BLOOM'S TAXONOMY



Action Verbs and Course Outcomes

Low	ver Order of Thinl (LOT)	king	Higher Order of Thinking (HOT)				
Remember Understand Ap		Apply	Analyse	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	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.



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.



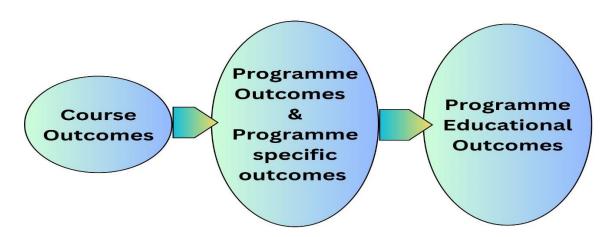


Figure 5: Relating the outcomes (CO-PO&PSO-PEO)

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



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

YR/S EM	Course Code	PO 1	PO 2	PO 3	PO 4	PO5	PO 6	PO 7	PO 8	PO 9	PO1	PO1	PO1	PSO 1	PSO 2	PSO 3
FIRST	MPIA -101	3.0	3.0	1.5	2.0	-	-	-	-	-	-	-	1.0	2.0	-	-
E	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 SEME	COAC-201	3.0	3.0	-	2.0	-	-	-	-	-	-	-	1.0		-	-
II ND SEME	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	-	-
ER	DTLP- 301	1.8	1.8	1.7	-	1.8	-	-	-	-	-	1.0	-	2.0	-	-
EST	COLA- 302	1.8	1.8	1.2	1.2	-	-	-	-	-	-	-	-	3.0	-	-
SEM	HRSM 303	2.7	2.2		2.7	-	-	-	-	-	2.5	-	-	3.0	-	-
III RD SEMESTER	BSTA-304	1.8	1.8	1.0	1.0	-	-	-	-	-	-	-	1.0	-	3.0	3.0
Ħ	COAF- 304	2.7	1.0	1.0	-	1.0	-	-	-	-	-	-	-	3.0	-	-
	ECOM-305		1.8	1.5	1.5	-	-	-	-	-	-	-	1.3	2.0	-	-
TH	COAC 401	3.0	3.0	2.7	-	-	-	-	-	-	-	-	-	3.0	-	-
IV 1 SEMESTER	CAIB 402	3.0	3.0	3.0	2.4	-	-	-	-	-	-	-	-	3.0	-	-
MES	BSMA 403	3.0	3.0	3.0	3.0	3.0	-	-	-	-	-	-	-	3.0	-	-
IV	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	-	-
~	POMA-501	3.0	2.5	2.0	2.5	2.0		2.0	-	-	3.0	-	2.0	3.0	-	-
TE E	FAMA-502	3.0	3.0	3.0		2.0	-	-	-	-	-	-	-	3.0	-	-
TH EMESTER	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		-	2.0	-	-	2.8	2.5	2.2	-	3.0	3.0
TB	ACOG- 601	2.8	2.8	2.6	2.6		-	3.0	-	-	2.7	-	2.6	3.0	-	-
83	INTL - 602	2.2	2.0	3.0	2.5		-	-	-	-	-	-	2.0	3.0	-	-
STI	POIN - 603	2.7	2.5	2.5	2.5	3.0	-	-	-	-	-	-	3.0	1.0	-	-
VI SEMESTER	FMIS - 604	2.7	3.0	2.5	3.0		-	-	2.0	3.0	2.7	2.8	2.6	-	3.0	3.0
S	ADPS - 605	2.6	2.2	2.3	3.0	2.0	-	-	-	-	2.0	2.0	2.5	3.0	-	-



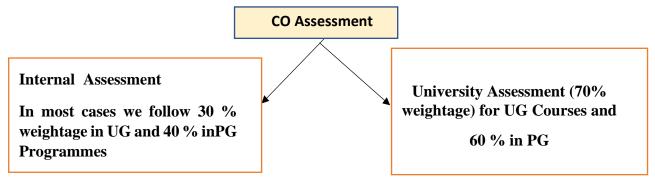
C. Assessment Process for CO Attainment:

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.



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

	INTE	RNAL	EXTE	RNAL
	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



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 o f Assessm ent	AssessmentTool	Description	Evaluation of Course Outcomes	Related POs/PSO s	Frequenc y of assessmen t
	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	PO 1 to PO 12	Two per Semester
Direct	Assignments	Two assignments are given for each course for continuous assessment. Average marks are considered.	way to cover all course outcomes. The final attainment for each CO under direct assessment is calculated	PO 1 to PO 12	Continuo us
Direct	Day to day evaluation		The final attainment for each CO is calculated by taking average of the %		Continuo us
Direct	Internal Practical Examination	Internal examination is conducted in labcourse.	day to day and Internal Lab Examination.	PO 1 to PO 12	One per Semester



Direct	Industry	To test student's concepts	Two	Internal project reviews are	PO 1 to PO 12	One project
	Oriented	design, creative thinking and independent				review in any semester
	Mini-Project	analysis.project	cond	ucted and average of these		
		reviews are	two	review assessments are		
		conducted		considered.		
Direct	Comprehensi	To assess the		ssessment is carried out by	PO 1 to PO 12	
	ve	student's technical		and three senior faculty	PO 12	All
	Viva Voice	and analytical skills in the domain and		all and arris performed as		programmes
	Examination	also communication	over	all academic performance.		
		skills.				
Indirect	Alumni	This survey givesthe	At t	he end of the programme	PO 1 to	At the end
	Survey	opinion of the		ini survey is collected from	PO 12	of
		student on the	Alun	nni and Considered for the		each course
		attainment of course	PO	attainment underIndirect		
T 11				assessment.		
Indirect	Graduate Exit	, _U		ne end of the programme,	PO 1 to PO 12	At the end
	Survey	the opinion of the graduate on the	gradua from	ate exit survey is collected the graduates and		Of the
		attainment of		lered for the PO attainment		program
		Programme		der indirect assessment.		
		outcomes				
Category	,		Lev	vel of Performance		
		3		2	1	
Performa	ance in Lab	Able to perform		Able to perform experiment	Able to p	
		Experiment independe within prescribed time		within prescribed time	prescribe	ent within
		within presented time	-	preserroed time	preserioe	d time
		The result is close or t	0.0	Able to perform		
		standard value.		experiment within prescribed time		
Level of		Able to show strong		Partially show strong	Lack of the	neoretical
Understa	0	theoretical backgroun	ıd	theoretical background	backgrou	
quanty of	f Submission	of experiment		of experiment	•	nt or lack of tion of data
		Able to interpret		Partially able to interpret		
		proper data to reach		data to reach conclusion.	Report su	
		Presentation , Calcula	tions	Shortfalls found in	but not w	vriuen
		,Conclusions/observat	ions/	Presentation, Calculations	1 1	
		comments done clearl	у	,Conclusions/observations		



Internal Mid Tests: Internal tests serve to encourage students to keep up with course content covered 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 minutes for 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 questions for 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 of respective 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.



	Assessme nt Tool
	Term 1 and Term 2
Internal	Presentation Viva-voce
Assessm	Report
ent	

Assessment tools used to evaluate project work are:

Ass	essment Tool	Evaluator
Internal Assessment	Seminar on project	Internal project Review Committee
	Final Report	University
External Assessment	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 maximum marks.
- Attainment Level 3: 70% students scoring more than class average marks out of the relevant maximummarks.



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 COMPULSORY QUESTION																										
				со					NC			CO1		QUES		TO A			(IOF	2)	QUES			PT (IOF2	00	603	C04	C
				SECTION A									_		1	SECT	_						TION				7	
	STUDENT					CO	_					TAL	_	04		04		05	_	06		CO2		CO3	TOTAL	TOTAL	TOTAL	
SR.NO	ENROLLMENT NO	_	_	_	1d	_	_			-	_	10	2a	_	2b	_	_	_	2d	_	3a	3a	3b	3b	_			
T	OTAL 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	
1																												
2																												
3													_															
4																			-						_			
5		_	_					_									<u> </u>											
																												L
																												H
																												H
		P	G	Q	UES	STI	ON	P	۱PE	R	A۱	ID	ITS	CC	OOF	REL	ATI(ON	W	ITH	I CO	, PO F	PSO					
				СО	MPUL	SORY	(QUI	ESTI	ON			01	(QUES	TION	TO A	TTEM	1PT	(IOF	2)	QUES	TION TO A	TTEM	PT (IOF 2	CO2	CO3	C04	-00
					SE	CTIO	N A					0				SECT	ION I	В			SECTION C						ŏ	1
	STUDENT					CO	1					Ι¥	C	04	С	04	C	05	C	06		CO2		CO3	TOTAL	TOTAL	TOTAL	101
SR.NO	ENROLLMENT NO	1a	1b	1c	1d	1e	1f	1g	1h	1i	1j	TOT,	2a	2a	2b	2b	2c	2c	2d	2d	3a	3a	3b	3b	5	5	5	í
T	OTAL 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	
1																												
2																												
3								T	T						Ι								T					
															1													

Pharm. D /P	harm. D (PB) QUE	STI	ON	PA	PE	R A	ND	ITS	COO	REL	ATI	ON	Wi	TH (ю,	PO		ı	nter	nal e	xam	
			ATTE	MPT	ALL			•	TION T		QU	ESTIC	ON TO	ATTEN 2)	MPT (I OF	CO1	c02	603	CO4	c05	900
		:	Short	ans	wers	;		long a	nswei	rs		S	hort (Quest	ion				_	_		<u> </u>
ENROLLMEN	STUDENT		CO1			C	CO3 CO4			CO2 CO5			CO6		TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	rotal		
T NO	ENROLLMENT NO	1a	1b	1c	1d	1e	1a	1b	2 a	2b	la	lb	1c	2d	1e	1f	Т0	5	2	5	T0	10
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



Question paper sample

Subject Name Management Pr		
Application Paper Code: Time- 3 Hrs	MPIA-101	Max Marks:_70
	Instructions to candidates	
All Sections are compulsory.		
Section B contains 4 Short Answer	Answer Type questions/ MCQ's carrying r Type questions carrying weightage of 5:	marks each.
Section C contains 2 Descriptive A	Answer Type questions carrying s weighta	ge of 15 marks each,
	SECTION A	
5		CO BL CO1
i) ii)		COI
iii)		CO1 CO2
iv) iv) .		CO2
v)		CO5 CO4
vi vii)		CO1
viii)		CO2 CO3
ix) x)		CO3
	Section B	
2.2 Attempt any fou		$(4 \times 5) = 20$
		CO BL CO3
)		CO4
i)		CO5
v)	-	CO5
) i)		CO4 CO3
•,	Section C	003
2.3 Attempt any two	Section C	$\underline{(2 \times 15)} = 30$
		CO BL
).		CO2
i) " v		CO2 CO1
ī		CO1



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 Alumnisurvey where Graduate exit survey and Alumnisurvey is given a weightage of 50% each

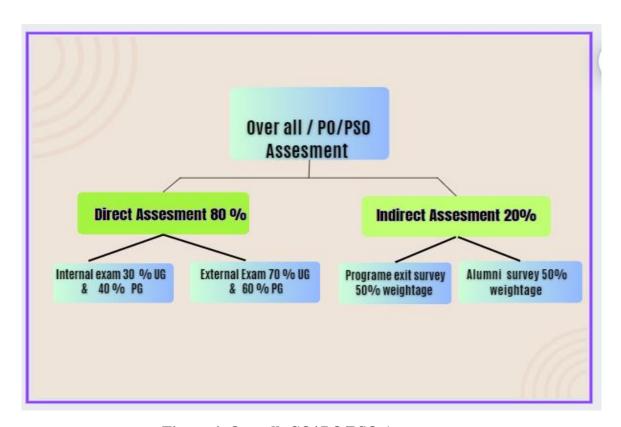


Figure 6: Overall CO/PO/PSO Assessment

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



		PO, PSO AS	SESSME OLS	NT	
		Course Type		essment Tools	Minimum Frequency
		Theory	Interna l Evaluat	Internal mid Tests	Twice per course
			ion	Assignments	Twice per course
			Uni	versity Exam	Once per course
		Practical	Internal	Daily	Every lab
	CO Assessme	Tractical	Evaluat i o n	Internal Lab exam	Once per course
Direct (80%				versity Exam	Once per
weightage)			Interna	Group Discussion	Once per course
		English Communica tion Skills	Evaluat ion	Presentation Skill	Once per course
		tion oxins		Writing skill	Once per course
			Uni	versity Exam	Once per course
		Mini project	Intern	al Evaluation - Reviews	Once per course
			Un	iversity Viva voce	Once per course
		Comprehensive Viva	Interna	al Evaluation	Once per course
		Seminar]	Presentation	Once per course
Indirect	Surveys	(Graduate I	Exit Survey 10%	At the end of the Program
20% Weightage			Alumni S	Survey 10%	Once per year



Indirect assessment feedback form from all stakeholders.

The exit survey form should permit receiving feedback from students on all the COs. Computation of 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.

			AL	AL	AL .	AL.	AL	AL
Enrollment number	Student Name		TOTAL CO1	TOTAL CO2	TOTAL CO3	TOTAL CO4	TOTAL CO5	TOTAL CO6
	MARKS OUT OF		15	20	25	15	10	15
R190969020.	Malika Pagal	1	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	4	15	18	22	15	10	13
R190969042.	Sneha Kumari	_	15	18	23	15	10	13
R190969048.	Yaishali Gurung Akansha Rajput	-	15 15	18 14	22 19	15 15	10	13 13
R210970001 R210970002	Ankita Negi	+	15	18	23	15	10	13
R210970002	Rajni Nautigal	+	15	17	22	15	10	13
R210970005	Dilrai Kaur	1	11	14	19	15	10	13
B210970006	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 L								
	EVEL = 1 (>= 50%)							
ATTAINMENT L								
Attainment LEV								
	Arverage attainment		3	3	3	3	3	3
OVERALL CO A								
Closing the loo	P at CO ATTAINMENT LEV	/EL						
				Attain	Gap Analys	Action fo impro		Modified
			Target		is	n	t	target
	CO LEVELS		24		0.6	ı		3
	CO1			3		1		
	CO1 CO2		1.9	3	1.1	1		3
	CO1 CO2 CO3		1.9	3	1.1 0.6	Bare		3
	CO1 CO2 CO3 CO4		1.9 2.4 2.4	3 3 3	1.1 0.6 0.6	Perfor of stu		3
	CO1 CO2 CO3		1.9	3	1.1 0.6	of stu is mor	dents	3



Contribution of CO Attainment in PO Attainment

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

			PSO												
СО	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3
1	3														
2		3													
3		3		1				თ	2						
4		3		1						1					
5			1							1		1			
6				1											
Average	3	3	1	1				3	2	1		1			

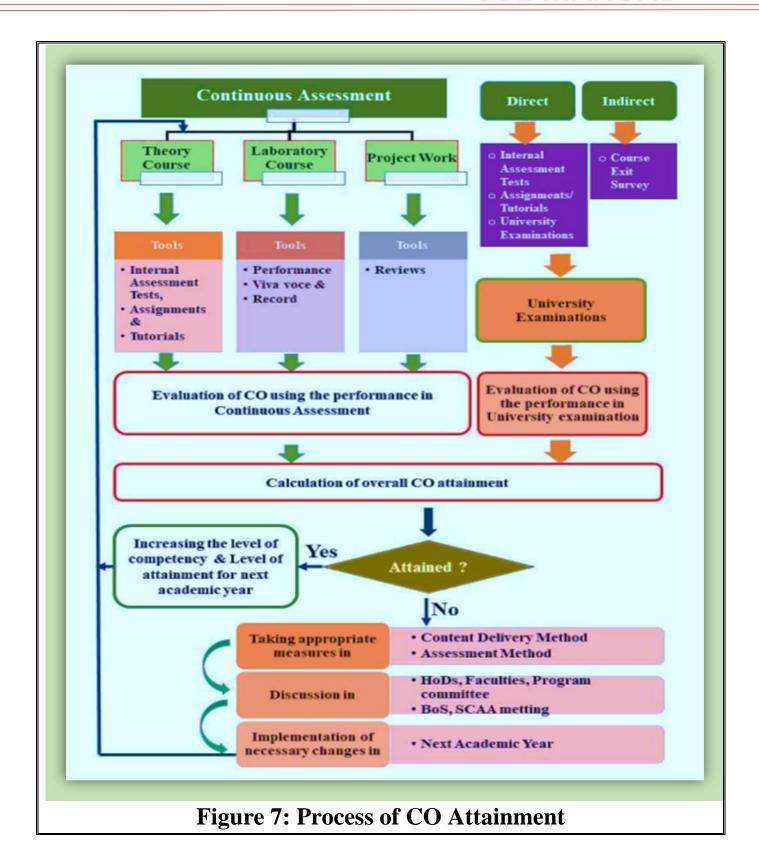
Overall Attainment of CO is as Below: Overall CO Attainment 80% of added ESE Examination and 20 % of Indirect Assessment.

со	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)

	PO								PSO						
со	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		









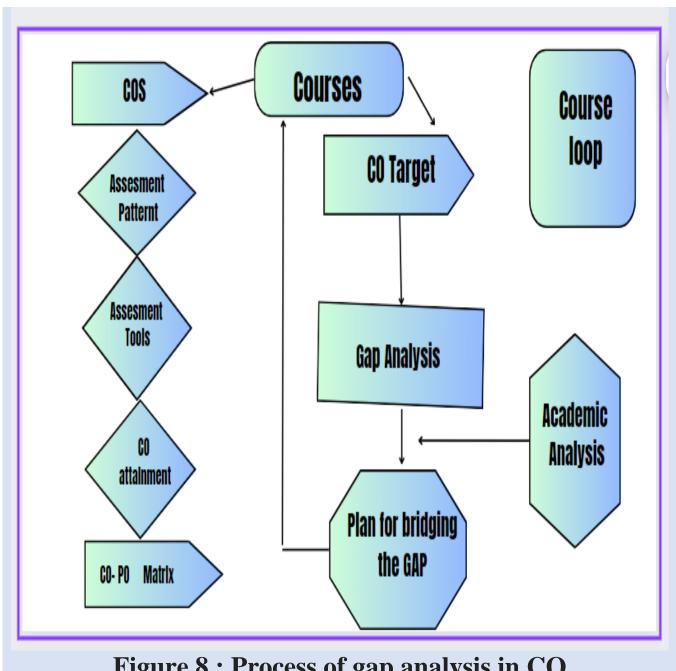


Figure 8: Process of gap analysis in CO





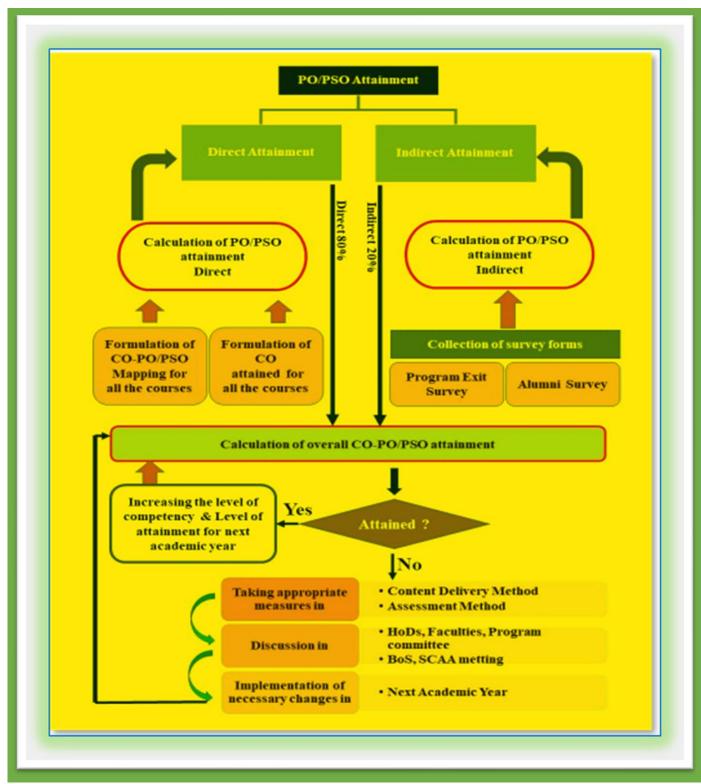


Figure 9: Process for PO/PSO Attainment



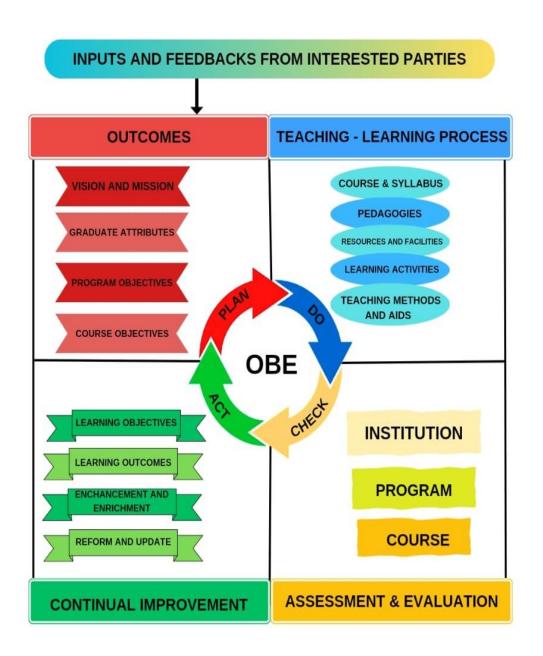


Figure 10: OBE Process



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)							
Rate whether courses offered are relevant to the Programme Excellent							
How do you rate CBCS/ECS /other pattern in the school Excellent very good							
3. Rate transparency in evaluation system Excellent very good Sood 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 perspective							
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: te-Your valuable opinion and suggestions are solicited for further improvement of University in the 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		
DESIGNATION: to-Your valuable opinion and suggestions are solicited for further improvement of Unix e point scale is given. Your response is kept confidential and used only for stated purpor		
to-Your valuable opinion and suggestions are solicited for further improvement of Unix e point scale is given. Your response is kept confidential and used only for stated purpor		
e point scale is given. Your response is kept confidential and used only for stated purpor		
(Rating: 5- Strongly Agree, 4- Agree, 3- Neutral, 2- Disagree, 1- Strong)		
	ly Disagree)	
How do you rate CBCS/ECS pattern in context of students.		
	Strongly Disagree	
2. Credit allocation is rational to the coverage of course curriculum		
	Strongly Disagree	
		_
3. Aims and objectives of curriculum are well defined Excellent		
Strongly agree Agree Neutral Disagree S	Strongly Disagree	
Sufficient reference material related to curriculum is available in the	Hibrary	
	Strongly Disagree	
	6,1	_
5. I am given enough freedom to contribute my ideas on curriculum de		
Strongly agree Agree Neutral Disagree	Strongly Disagree	
5. Curriculum is focused on skill development and entrepreneurship		
	Strongly Disagree	_
only after nears	according to condition	
7. Continuous evaluation system in the context of subject knowledge a	acquired by the stu	dents
Strongly agree Agree Neutral Disagree	Strongly Disagree	
3. The course content has increased students knowledge and interest i		
Strongly agree Agree Neutral Disagree S	Strongly Disagree	
The syllabus needs modification.		
Strongly agree Agree Meutral Disagree	Strongly Disag	ree 🗀
	-	
Suggestions for the improvement in curriculum design and develope	nent	
CHITY SIGNATURE DE	AN SIGNATURE	
CULIT SIGNATURE DE	AN 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

				leedback)21-2022	_			
Name								
Specializatio	n and year of 0	iraduation						
Address for a	communication	1						
				City	state			
PIN Code				Employm	ent details			
Email								
Company								
		ing criteria on the so provement of our UC		_	nuine response wi	Il be helpful fot the		
1.	Excellent	2.VeryGood	3.G	ood	4.Average	5.Poor		
S.No	Criteria						Rating	
1	1 Over all rating for the coverage of POs, COs and PSO's							
2	Extent of Curriculum meeting industry needs							

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 improvem	vent	
Student Name	Student Signature	Date



