

Outcome Based Education (OBE) Manual



Message from the Vice Chancellor

We cannot imagine a world without education, the fruition of our whole society is now directly dependent upon the excellence of our education system and the outcome it produces, the global society as a whole has very high expectations from academic institutions that mount pressure on us to develop individuals coming into our institutions whose abilities are not just confined to academic realm but they also become leaders, change agents and hone skills that contributes in bettering the world to new expanded horizons and unparalleled growth. ur varsity took it as a challenge and introduced interdisciplinary pedagogy which gives opportunity to individuals to quash their thirst for knowledge and elect from combinations like Computer Science with Economics, Agriculture with Cyber Security and Technology with Music and these are just a few examples, on the other hand, one can explore from hundreds of such combinations.

Today the focus of our university is not just on offering employable degrees but to also empower the individual to live a gratifying professional life, help them live their full potential, contribute something meaningful to this world and win careers not just in India but also globally. To fulfill the demand for such skillful individuals, we have revolutionized our curriculums and introduced Outcome Based Education (OBE) framework, the major focus of the OBE is to foster graduates that have cross-sectional competence and have extra ordinary knowledge at the same time.

With the introduction of the OBE complemented framework, as teachers, we already know the outcomes and thus we can measure performance of our students, endow them with well-timed and precise feedback, endorsed with research based and scientific mechanism, reducing the chances of errors in the learning process and accomplish new breakthroughs in the paradigm of academics.

Dr Vivek Kumar Vice Chancellor Quantum University

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1. About the University

Quantum University is a state university established by the Uttarakhand State Legislature through the Quantum University Act, 2016 (Uttarakhand Act No. 04 of 2017). Quantum University is transformation of Quantum Global Campus, which has ten years old legacy. The lush green campus of Quantum University is situated at Roorkee-Dehradun Highway (22 Km away from IIT Roorkee). The location is well connected from Dehradun, Saharanpur, Haridwar and Roorkee. The nearest Railway stations are Saharanpur and Roorkee (roughly equal distance) and nearest Airport is Jolly Grant, Dehradun (60KM).

Quantum University has a well-structured campus with residence facilities for students (more than 1000 Boys and 300 Girls) and for faculty. Quantum University has well developed sports and cultural facilities on campus and well equipped with all the modern amenities. Quantum University, India, was established, keeping the growing importance of Interdisciplinary education in mind.

Quantum firmly believes that the overall development of students takes place in a multidisciplinary environment where he is given the opportunity to hone his skills and at the same time able to follow his or her Passion. Quantum University aims to become the top private university in India.

Quantum University currently offers higher education under five faculties namely:

- 1. Faculty of Technology,
- 2. Faculty of Business & Management,
- 3. Faculty of Graduate Studies,
- 4. Faculty of Agriculture,
- 5. Faculty of Health Sciences,

The Doctorate, Post Graduate and Under Graduate programs are operated under these faculties.

The University received many accolades as:

- Received the Education Excellence Award for Best Private Engineering College in North India for Academics
- Received ASSOCHAM India Award as the Best Engineering College Promoting Innovation in North India.
- Received, Big Brand Research Award as the Most Promising Engineering College of North India

Quantum has tried to break new ground with a new model of learning. It is a fact that success in the modern world is dependent on skill. The skill gap can only be bridged by application of theory, hands on work and the right training. Quantum has since moved beyond the traditional theory based learning modes. The vital importance of skill development to education has inspired Quantum University to execute a multi-dimensional training program. Our varsity has made its prime focus to sculpt industry ready workforce. An array of our industrial tie-ups and MOUs reflect our commitment to application based education. We have created a new blueprint for skill development, which goes beyond the traditional summer training, internship or project work.

Considered as the best university in the state of Uttarakhand, we take pride in offering a wide spectrum of courses like Engineering, Agriculture, Hospitality and Tourism, Computer Application, Management, Media Study and Design, Humanities and Social Sciences, Health Sciences etc. The list does not end here and we also offer interdisciplinary combinations like Technology with Music, Agriculture with Cyber Security or Computer Science with Economics. The inter-disciplinary immersion empowers students to handle a range of skills and roles in their professional life.

2. Outcome Based Education

The new age demands for professionals that are not just skilled in a single area of expertise but also have cross sectional capabilities to collaborate across disciplines have inspired academic institutions to complement their curriculums with Outcome Based Education (OBE). The OBE framework emphases on the end product (student) by focusing on the pre-defined outcomes of the in total experience of the process a student goes through and input given to them in terms of classes, assessments, laboratory experiences, and opportunities to solve problems etc.

In factual sense outcome is the result of an action, situation or an event, these are measureable and hence can provide with valuable data, using which one can compare the desired goal with the outcome. The OBE system also empowers the teacher and students to assess their progress

and can make timely changes in the inputs and processes so that the exactly same learning outcomes of a student can be ensured which was contemplated at the start of the program.

OBE gives leverage over the traditional teaching pedagogy where major attention is given on teaching rather than the learning and its outcomes. The whole paradigm shift is the game changer because Outcome Based Education stimulates more growth in an individual in terms of critical thinking, problem solving skills, collaborations skills and creativity which is not possible in the traditional teaching pedagogy.

The gift of Outcome Based Education was bestowed upon us by the renowned educational psychologist William G. Spady, he is better known as the father of Outcome Based Education (OBE). His work is commendable by and large in the areas of educational system for both learners and educators and leaders in the academic paradigm.

He served in Harvard University and the Ontario Institute of Education from 1967 to 1973 as a lecturer; he also headed the IN4OBE as the CEO, which is the global network of OBE experts, consultants and visionaries.

PILLARS OF OBE OBE is about What Students Learn (Outcome) Not What we Teach (Objective)

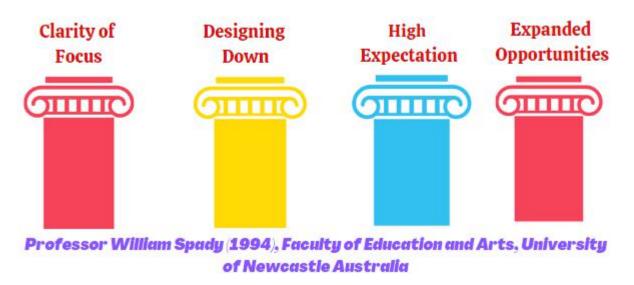


Figure1: OBE Philosophy

The above four pillars depicted in the figure are explained as under:

Clarity of Focus:

In simple terms it means that a teacher must clearly work towards pre-defined goals that are distinct on what students should learn as a result of their efforts. The clarity of focus principal

also defines that the teachers have already contemplated outcomes and to achieve those outcomes they need to help students in gaining demonstration of right knowledge, skills and develop the right personality which will help them to achieve the intended goal at the end of the program. To guarantee the clarity of focus the Program Specific Outcomes, Program Educational Objectives and Program Outcome are designed are per the mission and vision of the university.

Designing Down:

In the OBE architecture the designing down perspective ensures that before designing a curriculum first the clear intended outcomes must be defined as to know what students will achieve at the end of the programme, and based on outcomes the curriculum must be designed and it should be never the other way round. Post completing this step all the instructional decisions are then made aligned to achieve the desired result.

Higher Expectation:

Interestingly, the higher expectation model directs towards teachers that they must set up very high and challenging standards of performance, this will inspire students to more deeply engage in the learning process. The idea behind higher expectation pillar is that feeding the minds of students to achieve high standards will challenge them to work hard, become competitive, develop cognitive skills and achieve higher academic growth which is not possible in the absence of unchallenging environment.

Opportunities:

As the matter of fact, not all learners learn the same thing, the same way, and at the same time. Considering this fact the pillar of opportunity in the OBE principal states that a learner should be given innumerable opportunities and ways so that they learn the desired lessons and outcomes. At the same time, extended opportunities can facilitate in achieving high standards. In this way students are more focused on more prioritized lesson of that particular time and hour. This does not mean that the student must exceed the timeline for example total number of graduating years, these opportunities must be provided within the time frame of the academic program cycle and the learners should also be compelled to complete the learning within the time line.

3.

The vision and mission statements are both directing goals of an organization and helps determine their focus to achieve these goals. To make it more clear a vision statement have futuristic focus on what exactly the organization wants to become, on the other hand, the mission statement is the focus on the present where an organization takes steps on a day-to-day basis to achieve its vision.

Underneath is the elaborated picture of the vision and mission statement of Quantum University.

Vision:

To be a seat of learning where a student gains academic and professional excellence, stays connected with the inner self, imbibes respect for human values, and becomes a world citizen.

Mission:

- To be a forward-looking, ever-evolving University of merit that shall continually strive to promote all-round excellence among all its stake holders to create a rich, eternal legacy of trust.
- To imbibe values and ethics of global relevance such as gender and race equity, inclusive growth and also sustainable 'protection' and 'care' of the environment.
- To ensure a high core competence in students in their respective domains that caters to the changes in technology and dynamics of industry demand. The students should be adaptable to change and be life-long learners.
- To provide opportunities to students to nurture their skills in additional areas of knowledge, relevant to their times, through interdisciplinary pedagogy and robust Industry interface.
- To ensure wellness and wellbeing of its students through a range of value addition programs and freedom to pursue one's passion in areas of interest, including sports, music, dance, theatre, community service, and many more.
- To be a stronghold of liberated students who believe in the rich cultural heritage of their country, but have a truly global orientation.

4. Program Educational Objectives (PEOs)

Program Educational Objectives of a degree program are the statements that elaborate the expected achievements of the individual post the completion of his graduation program. In literal sense the Program Educational Objectives essentially justifies the existence of the education program in the first place.

Program Educational Objectives are defined by the needs of the program domain and PEOs also creates transparency for students joining the program so that they know what professional accomplishments they are going to achieve in the 4 to 5 years of their graduation.

To provide an example of PEOs for a B. Tech program, checkout the below statements.

- 1. Have a successful professional life as an engineer in the various industries, government projects and able to demonstrate skills in real world applications.
- **2.** Have opportunities to work in research & development, education institutes, demonstrate creativity and innovations in domains of technology, engineering and science and at the same time is able to pursue other professional careers.
- **3.** Develop into fully grown professional who is confident to serve local and international society as well.
- 4. Demonstrate leadership skill in their field of expertise and in projects which aims to carry out economic and service work anywhere in the world.

5. Program Specific Outcomes (PSOs)

Program Specific Outcomes (PSOs) are designed by the department offering the program, the PSOs are program specific and clearly indicates what a student should be able to do by the time they graduate and attain a degree. Each department designs from two to four PSOs; the decision about the PSOs is the combine responsibility of the department experts and HoDs.

Underneath statements are examples of Program Specific Outcomes of B. Tech in Computer Science and Engineering.

- PSO1- Foundation of Computer System: Ability to understand the principles and working of computer systems. Students can assess the hardware and software aspects of computer systems.
- PSO2- Foundations of Software development: Ability to understand the structure and development methodologies of software systems. Possess professional skills and knowledge of software design process. Familiarity and practical competence with a broad range of programming language and open source platforms.
- **PSO**3-Foundation of mathematical concepts: Ability to apply mathematical methodologies to solve computation task, model real world problem using appropriate data structure and suitable algorithm.
- PSO₄- Applications of Computing and Research Ability: Ability to use knowledge in various
 domains to identify research gaps and hence to provide solution to new ideas and innovations.

6. Program Outcomes

The Graduate Attributes (GA) are the result of studying a program at a university, GA reflects through the knowledge of a particular subject, high level of qualities, industrial skills and understanding and learning experience that they gained while going through the academic program. These graduate attributes set them apart from those who haven't earned a degree from an institution. Their contribution is not just limited to their employers but the added value gained during those grueling years equip them to serve better in society and pursue a fulfilling career as well.

In general, there are 12 GAs or outcomes of an academic program but the institution or universities can design their own outcomes for graduates considering their own blueprint of curriculum, broadly they can also characterized under the titles of responsibilities,

An academician can use the GAs to jot down the Program Outcomes and both should be able justify each other if mapped down one on one.

An example is shown below under for Program Outcomes defined for M.TECH (COMPUTER SCIENCE & ENGINEERING PROGRAM)

PO Number	Program Outcomes
PO1 (Engineering Knowledge)	Demonstrated capability to exhibit in-depth knowledge in engineering specialization.
PO ₂ (Problem Analysis)	Demonstrated capabilities to think critically and analyze complex engineering problems to make creative advances in theory and practice.
PO ₃ (Design/ development of solutions)	Demonstrated capability to design solutions for engineering problems and to design a component, system, or process that meet the specified needs with appropriate consideration for the public health and safety, along with the cultural, societal, and environmental considerations.
PO ₄ (Conduct investigations of complex problems)	Demonstrated capability to use research methodologies, techniques and tools, and will contribute to the development of technological knowledge
PO5 (Modern tool usage)	Demonstrated capability to apply appropriate techniques, modern engineering tools to perform modeling of complex engineering problems with knowing the limitations.
PO6 (The engineer and society)	Demonstrated capability to achieve professional success with an understanding and appreciation of ethical behavior, social responsibility, and diversity, both as individuals and in team environments.
PO ₇ (Environment and sustainability)	Demonstrated capability to understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge for sustainable development to articulate a comprehensive world view that integrates diverse approaches to sustainability
PO8	Demonstrated capability to communicate complex engineering problems with the engineering

(Communication)	community and society, write and present technical reports effectively
PO9 (Ethics)	Demonstrated capability to exhibit professional and intellectual integrity, ethics of research and scholarship and will realize the responsibility towards the community.
PO10 (Individual and team work)	Demonstrated capability to analyze the local and global impact of computing on individuals, organizations, and society
PO11 (Project management and finance)	Demonstrated capability to demonstrate knowledge and understanding of engineering and management principles and apply the same with due consideration to economical and financial factors.
PO12 (Lifelong learning)	Demonstrated capability to engage in life-long learning with a high level of enthusiasm and commitment to improve knowledge and competence continuously.

7. Course Outcomes

Course Outcomes (Cos) are what the student should be able to do at the end of a course. The most significant aspect of a CO is that it should be observable and measurable.

Specifically COs are jot down by the university in consultations with faculties, students, HoDs and other stakeholders.

By gone are the days of theoretical learning and achieving high marks, the whole system of education is changed in the sense how we look at the final outcome, the attention is now on the sake of improving overall quality, learning experience and workflows that gives better results.

Underneath is an example of Course Outcome for (M.TECH-COMPUTER SCIENCE AND ENGINEERING)

D C 1	00 (
Paper Code	CS4106

Paper Title	Advance Discrete Structure
Course outcomes	Upon successful completion of the course, students would be able to:
CO 1	Solve set, relation, and mapping problems as well as understand and solve problems involving groups, subgroups.
CO 2	Recognize the different types of logic operators, normal forms, and also be able to solve problems involving mathematical induction, predicate calculus, and lattice representations.
CO 3	Capable of understanding different types of counting techniques and solving problems related to recurrence relations and generating functions.
CO ₄	Familiar with different theorems such as Euler's, Fermat's, and Reminder also be understood, as well as knowing how to solve congruence modulo problems.
CO ₅	Grasp of number theory, modular arithmetic, and also know how to solve various test types and their applications.

8. Using Bloom's Taxonomy to Write Effective Learning Outcomes

Bloom's Taxonomy is a classification of the different objectives and skills that educators set for their students (learning outcomes).

8.1 What is Bloom's Taxonomy

Bloom's Taxonomy is a classification of the different outcomes and skills that educators set for their students (learning outcomes). The taxonomy was proposed in 1956 by Benjamin Bloom, an educational psychologist at the University of Chicago. The terminology has been recently updated to include the following six levels of learning. These 6 levels can be used to structure the learning outcomes, lessons, and assessments of your course:

- 1. Remembering: Retrieving, recognizing, and recalling relevant knowledge from long-term memory.
- 2. Understanding: Constructing meaning from oral, written, and graphic messages through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining.
- 3. Applying: Carrying out or using a procedure for executing, or implementing.
- 4. Analyzing: Breaking material into constituent parts, determining how the parts relate to one another and to an overall structure or purpose through differentiating, organizing, and attributing.
- 5. Evaluating: Making judgments based on criteria and standards through checking and critiquing.
- 6. Creating: Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing.

Like other taxonomies, Bloom's is hierarchical, meaning that learning at the higher levels is dependent on having attained prerequisite knowledge and skills at lower levels. You will see Bloom's Taxonomy often displayed as a pyramid graphic to help demonstrate this hierarchy. We have updated this pyramid into a "cake-style" hierarchy to emphasize that each level is built on a foundation of the previous levels.



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8.2 How Bloom's can aid in course design

Bloom's taxonomy is a powerful tool to help develop learning outcomes because it explains the process of learning:

- Before you can understand a concept, you must remember it.
- To apply a concept you must first understand it.
- In order to evaluate a process, you must have analyzed it.
- To create an accurate conclusion, you must have completed a thorough evaluation.

However, we don't always start with lower order skills and step all the way through the entire taxonomy for each concept you present in your course. That approach would become tedious–for both you and your students! Instead, start by considering the level of learners in your course:

- 1. Are lots of your student's freshman? Is this an "Introduction to..." course? If so, many you're learning outcomes may target the lower order Bloom's skills, because your students are building foundational knowledge. However, even in this situation we would strive to move a few of your outcomes into the applying and analyzing level, but getting too far up in the taxonomy could create frustration and unachievable goals.
- 2. Are most of your student's juniors and seniors? Graduate students? Do your students have a solid foundation in much of the terminology and processes you will be working on your course? If so, then you should not have many remembering and understanding level outcomes. You may need a few, for any radically new concepts specific to your course. However, these advanced students should be able to master higher-order learning objectives. Too many lower level outcomes might cause boredom or apathy.

8.3 How Bloom's works with learning outcomes

Fortunately, there are "verb tables" to help identify which action verbs align with each level in Bloom's Taxonomy.

You may notice that some of these verbs on the table are associated with multiple Bloom's Taxonomy levels. These "multilevel-verbs" are actions that could apply to different activities. For example, you could have an outcome that states "At the end of this lesson, students will be able to explain the difference between H2O and OH-." This would be an understanding level outcome. However, if you wanted the students to be able to "...explain the shift in the chemical structure of water throughout its various phases." This would be an analyzing level verb.

Adding to this confusion, you can locate Bloom's verb charts that will list verbs at levels different from what we list below. Just keep in mind that it is the skill, action or activity you will teach using that verb that determines the Bloom's Taxonomy level.

Bloom's LevelKey Verbs (keywords) Example Learning Outcome

Bloom's Level	Key Verbs (keywords)	Example Learning Outcome		
Create	Design, formulate, build, invent, create, compose, generate, derive, modify, and develop.	By the end of this lesson, the student will be able to design an original homework problem dealing with the principle of conservation of energy.		
Evaluate	Choose, support, relate, determine, defend, judge, grade, compare, contrast, argue, justify, support, convince, select, evaluate.	By the end of this lesson, the student will be able to determine whether using conservation of energy or conservation of momentum would be more appropriate for solving a dynamics problem.		
Analyze	Classify, break down, categorize, analyze, diagram, illustrate, criticize, simplify, and associate.	By the end of this lesson, the student will be able to differentiate between potential and kinetic energy.		
Apply	Calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, perform, present.	By the end of this lesson, the student will be able to calculate the kinetic energy of a projectile.		
Understand	Describe, explain, paraphrase, restate, give original examples of, summarize, contrast, interpret, discuss.	By the end of this lesson, the student will be able to describe Newton's three laws of motion to in her/his own words		
Remember	List, recite, outline, define, name, match, quote, recall, identify, label, recognize.	By the end of this lesson, the student will be able to recite Newton's three laws of motion.		

Learning outcome examples adapted from, Nelson Baker at Georgia Tech: nelson.baker@pe.gatech.edu

8.4 How Bloom's works with Quality Matters

For a course to meet the Quality Matters standards it must have learning outcomes that are measurable. Using a verb table like the one above will help you avoid verbs that cannot be quantified, like: understand, learn, appreciate, or enjoy. Quality Matters also requires that your course assessments (activities, projects, and exams) align with your learning outcomes. For example, if you're learning outcome has an application level verb, such as "present", then you cannot demonstrate that your students have mastered that learning outcome by simply having a multiple choice quiz.

8.5 Course level and lesson level outcomes

The biggest difference between course and lesson level outcomes is that we don't directly assess course level outcomes. Course level outcomes are just too broad. Instead, we use several lesson level outcomes to demonstrate mastery of one course level outcome. To create good course level outcomes, we need to ask ourselves: "what do I want the students to have mastery of at the end of the course?" Then, after we finalize our course level outcomes, we have to make sure that mastery of all of the lesson level outcomes underneath confirm that a student has mastery of the course level outcome—in other words, if your students can prove (through assessment) that they can do each and every one of the lesson level outcomes in that section, then you as an instructor agree they have mastery of the course level outcome.

8.6 How Bloom's works with course level and lesson level outcomes:

- Course level outcomes are broad. You may only have 3-5 course level outcomes. They
 would be difficult to measure directly because they overarch the topics of your entire
 course.
- Lesson level outcomes are what we use to demonstrate that a student has mastery of the course level outcomes. We do this by building lesson level outcomes that build toward the course level outcome. For example, a student might need to demonstrate mastery of 8 lesson level outcomes in order to demonstrate mastery of one course level outcome.
- Because the lesson level outcomes directly support the course level outcomes, they need to build up the Bloom's taxonomy to help your students reach mastery of the course level outcomes. Use Bloom's Taxonomy to make sure that the verbs you choose for your lesson level outcomes build up to the level of the verb that is in the course level outcome. The lesson level verbs can be below or equal to the course level verb, but they CANNOT be higher in level. For example, your course level verb might be an Applying level verb, "illustrate." Your lesson level verbs can be from any Bloom's level that is equal or below this level (applying, understanding, or remembering).

8.7 Steps towards writing effective learning outcomes:

- 1. Make sure there is one measurable verb in each objective.
- 2. Each outcome needs one verb. Either a student can master the outcome, or they fail to master it. If an outcome has two verbs (say, define and apply), what happens if a student can define, but not apply? Are they demonstrating mastery?
- 3. Ensure that the verbs in the course level outcome are at least at the highest Bloom's Taxonomy as the highest lesson level outcomes that support it. (Because we can't verify they can evaluate if our lessons only taught them (and assessed) to define.)
- 4. Strive to keep all your learning outcomes measurable, clear and concise. When you are ready to write, it can be helpful to list the level of Bloom's next to the verb you choose in parentheses. For example:
 - Course level outcome 1. (Apply) Demonstrate how transportation is a critical link in the supply chain.
 - 1.1. (Understand) Discuss the changing global landscape for businesses and other organizations that are driving change in the global environment.

1.2. (Apply) Demonstrate the special nature of transportation demand and the influence of transportation on companies and their supply chains operating in a global economy.

This trick will help you quickly see what level verbs you have. It will also let you check that the course level outcome is at least as high of a Bloom's level as any of the lesson level outcomes underneath.

9. OBE Implementation

Outcome based education (OBE) is an educational theory that emphasis on the learning rather than the teaching itself. The focus of OBE is on the skills and attitudes that a student should learn by the time they complete an academic program. The implementation of the OBE is a complex process altogether and requires a high end skill set that of a profound educationist.

Underneath we have tried to explain the process of OBE implementation in simple diagrammatic form.

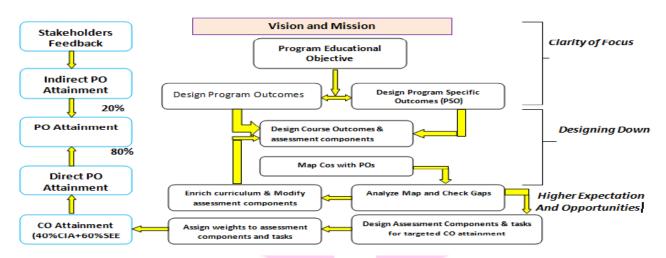
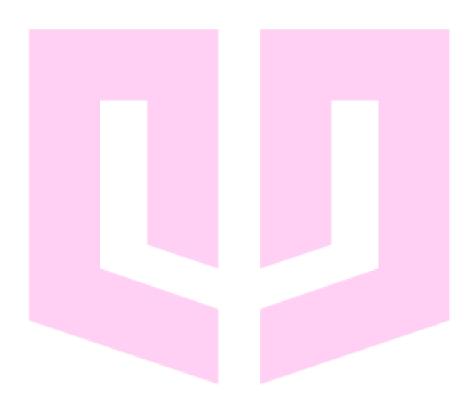


Figure2: OBE Implementation Flow Chart

The above block diagram can be simplified in the steps mentioned below.

- 1. Establish Mission statements, Program Educational Objectives.
- 2. Map Mission Statements with Program Educational Objectives (PEO).
- 3. Define Program Outcome (PO) using Graduate attributes.
- 4. Map PEO and PO.
- 5. Define Competencies for each PO [Optional]
- 6. List the Performance Indicators for each PO Competency [Option]
- 7. Define Course Outcome using action verb for each Course.
- 8. Map CO and PO
- 9. Set targets for PO and CO attainment.
- 10. Map each question of the assessment tasks with Bloom's Taxonomy and COs

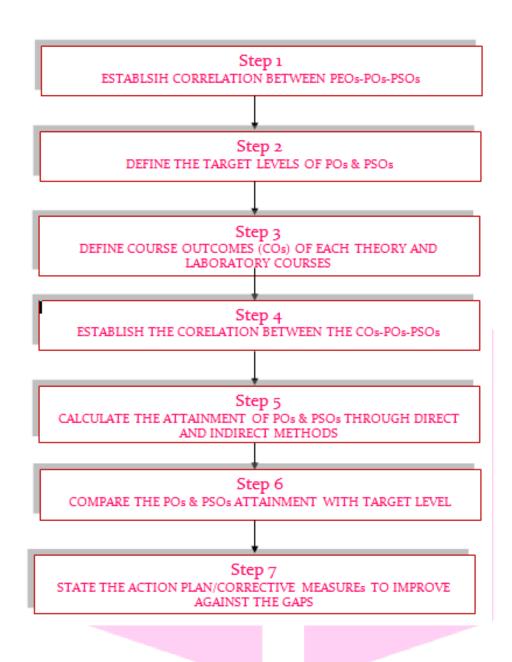
- 11. Define rubrics for evaluation.
- 12. Measure CO attainment at student and course level using Direct and Indirect Methods
- 13. Measure PO attainment using Direct and Indirect Methods
- 14. Analyze the COs and POs and propose actions.
- 15. Assess the attainment of Program Educational Objectives



QUANTUM UNIVERSITY, ROORKEE

CO-PO / PSOs /PEOs attainment Model and Calculations Methodology

CO-PO Attainment Steps



Step1: Establish correlation between PEOs-POs-PSOs

PEOs		P	P	P	P	P	P	P	P	P	P	P	P	P	P	P
PEO ₁	Multi- disciplinary	3	3	3	3	3	2	1		3	3	3	3	2	2	3
	Higher academic and industry pursuits	2	3	3	2	3	2	3	2	1	2	2	2	3	3	2
PEO ₂	Application of concepts of mathematics, science	3	3	2	3	2	1	2		1	2	2	2	2	3	2
PEO ₃	Designing ,modeling, analyzing, and	3	3	3	3	3		2	2	2	2	1	1	2	2	2
PEO ₄	Capability in analytical and experimental research methods	2	M	2	3	3	1	1	2	2	2	1	1	2	3	2
	Average	2	3	2	2	2	1	1	2	1	2	1	1	2	2	2

Combined average of all POs and PSOs = 2.24

Correlation levels 1, 2 or 3 as defined below:

Step2: Target attainment levels of POs and PSOs

S	Levels	Performance quality
1	PO/PSO≤	Unsatisfactory/ Does Not Meet
2	1≤(PO or PSO)≤1.5	Satisfactory/ Marginal
3	1.5≤(PO or PSO)≤2.5	Good/ Meets Expectation
4	2.5≤(PO or PSO)≤ 3	Excellent/Exceeds Expectations

Interpretation of Performance Quality

Criteria for Assessment	Excellent/Exceed s Expectations	Good/ Meets Expectation	Satisfactory/ Marginal Expectations	Unsatisfactory /Does Not Meet
The PO statement specifically articulates the knowledge, skill(s), or behavior(s) students should gain; is neither too broad nor too narrow; and lends itself to appropriate measurement.	Course outcome is clear, focused, and stated in terms of measurable knowledge, skills, or behaviors. The learning outcome consists of measurable and relevant Components.	Stated Outcomes are clear in terms of measurable knowledge, skills, or behaviors; however, course outcomes would be improved if (a) stated in clearer, more sharply focused terms.	Course outcome is partially defined and or the outcome were broken into smaller components with more clear objectives	Course outcome is too broad to be measurable or is too vague or ambiguous to be readily understood.
Assessment methods are appropriate to the program objective statement. The variety of measures used to evaluate each outcome.	Assessment methods clearly match the PSO/PO. Multiple robust measures are used for each learning outcome.	Assessment methods match the PO/PSO. At least one indirect measure used for the learning outcome.	Assessment method contains direct assessment only and indirect methods not properly adapted.	Assessment methods do not match the student learning outcome, or appropriate measures were not used or seem inadequate.

POs assessment	The assessment report is	The assessment	The assessment	The assessment	
findings - A concise	complete, concise and	report is complete	report gives	report is	
summary of the results	well organized. Data	and organized.	qualitative	unacceptable for	
	· ·	· ·	•	one or more of the	
gathered from a given	collection/analysis is	Analysis may contain	information of		
assessment measure or	appropriately focused.	too much detail or	the overall	following reasons:	
set of measures.		stray slightly from	attainment but	incomplete or too	
	There port provides	the intended data	the data set	much information;	
	solid evidence	set.	needs further	reported data is not	
	(including supporting		processing and	clearly aligned with	
	documentation) of the	Some documentation	clear	achievement targets;	
	degree to which learning	is present but further	statement of	questionable	
	outcomes were met.	documentation	the criteria for	conclusion about	
		maybe desirable.	quantitative	whether targets	
		,	Assessment.	were met, partially	
				met, or not met;	
				questionable data	
				collection/analysis;	
				no supporting	
				documentation	
				provided.	
Use of results/action	The action plan is	A sufficiently	A partial action	The action plan	
plan –Actions already	robust,	detailed	plan is	is unacceptable	
taken, or committed to,	Detailed, sustainable,	Action plan is in	provided with required	because it is	
to improve (a) student	and logically based	place. The plan is	documents.	not present; not clearly	
(.,,	on the assessment	logically based on	Supporting	related to the	
achievement of the	findings. Actions	assessment	documents for	assessment	
desired learning	taken are supported	findings and	justifying the	results; too	
outcome	• •		action plan is	general and	
or (b)the coming year's	by accompanying	provides for	inadequate and	lacking in	
or (syene coming year s	documentation.	supporting	needs some	details; or it	
SLO assessment plan.	Planned actions	documentation of	more	seems to offer excuses for	
	specify completion	actions to be	improvements.	results rather	
	dates, responsible	completed.		than	
	parties, and	If no potion when		thoughtful	
	anticipated	If no action plan is		interpretation	
	documentation.	needed at this		or "next steps"	
		time, a clear		for program	
	The action plan clearly	justification based		improvement;	
	"closes the loop" in	on findings is		there are too	
	responding to the past	provided.		many actions	
	year's findings.			to manage.	
		ĺ			

Step 3: Define the course outcomes (COs) of each theory and laboratory courses

Unit			T					
	Course Name and Id : PR301- Metrology							
Unit 1		Students will distinguish different tolerance systems, differentiate hole based and shaft based systems						
Unit 2		Students will proficient to outline the use and applications of linear measuring devices and angular measuring devices						
Unit 3		Students will able to list out various optical measuring instruments and explain their uses	2					
Unit 4	PR301CO4	Students will recognize different comparators, identifying the	3					
		requirements of machine tool alignment tests and explain the use of screw thread measuring devices						
Unit 5	PR301CO5		3					

Step4: Establish the correlation between COs-POs-PSOs

PR301- Metrology	со	POı	PO2	PO3	PO4	PO5	90d	PO ₇	PO8	PO9	PO10	PO11	PO12	PSO1	PSO ₂	PSO ₃
	P	3	3	3	3	2	О	О	О	3	2	О	3	3	2	3
	P	3	О	2		2	О	0	3	3		О	3		3	
	P	3	3	2	2	2	3	О	1	3	2	О		3	2	3
	P	3	3	3	3	2	2	О	3	3	2	О	3	3	3	
	P	2	О	2	О	2	0	0	2	О	2	О	2	2	2	2
	AVERAGE	2.5	2.8	2	2.3	О	3	3	2	O	3	3 2	5 3	3		

Step5: Calculate the attainment of CO, POs and PSOs through direct and indirect methods

Calculation of COs Attainment

Direct and indirect attainment of Cos for academic year2018-19 onwards

(Evaluated for each course of the Semester. Evaluation is done in end of each Semester)

S	TOOL	CATEGOR
1.	CO Attainment of all theory and Lab courses(Sessional examination, Assignments and End Semester Examination)	Direct Assessment (70%)
2.	Indirect Assessment :Course wise student and Teachers feedback (during end semester exam)	Indirect Assessment (30%)

$Calculation\ of\ POs\ and\ PSOs\ attainment\ for a cademic year {\tt 2018-19}\ onwards$

S	TOOL	CATEGORY
1.	CO Attainment of all theory courses	Direct Assessment (50%)
2.	CO Attainment of all practical courses	
3.	Indirect 1: Feedback on Curriculum from	
	Final year Students (Graduating) – 10%	
	Indirect 2:Feedback on Curriculum from	Indirect
	Teachers -10%	Assessment (50%)
	Indirect 3: Feedback on Curriculum from	Assessment (30%)
	HR/Employers of Students and External	
	Mentors from Industry- 20%	
	Indirect 4: Feedback on Curriculum from	
	Alumni -20%	
	Indirect 5: Feedback from Co-curricular	
	Activities- 40%	

Method of calculation of CO Attainment (for 2018-19, 2019-20, 20-21)

Question Paper BL Assessment (Applied to Sessional, Assignments, End Semester Examination Question papers and Trainings, Projects Evaluation)

Question Number	CO Supported	BL Level	Max Marks	Maximum Level of BL Level in the Questions (Weighted Average)	Maximum Level achieved (Average) Only for 2018-19, 2019-20 and
Qı I	CO ₁	2	2		
Qı II	CO ₁	2	2		
Qı III	CO ₁	2	8	2	
Q1 IV	CO ₁	2	8		
Qı V	CO ₁	2	8		
Q2 I	CO ₂	2	2		
Q2 II	CO ₂	2	2	1.5140	
Q2 III	CO ₂	2	8	1.7142 8571	
Q2 IV	CO ₂	2	8	05/1	
Q ₂ V	CO ₂	1	8		
Q ₃ I	CO ₃	2	2		
Q ₃ II	CO ₃	2	2	2 20==	
Q ₃ III	CO ₃	3	8	2.2857	2
Q ₃ IV	CO ₃	2	8	1429	
Q ₃ V	CO ₃	2	8		
Q ₄ I	CO ₄	2	2		
Q4 II	CO ₄	2	2		
Q ₄ III	CO ₄	2	8	2	
Q ₄ IV	CO ₄	2	8		
Q4 V	CO ₅	2	8		
Q ₅ I	CO ₅	2	2		
Q ₅ II	CO ₅	2	2	2 2855	
Q5 III	CO ₅	2	8	2.2857 1429	
Q5 IV	CO ₅	2	8	1429	
Q5 V	CO ₅	3	8		

Method of level attainment in Examinations (for CO-Attainment Calculations)

% Student in the course	Level attainment on the basis of Criteria X (LA)						
Above 70% meeting the criteria (X)	3						
Between 70% to 40% criteria (X)	2						
Below 40% Criteria (X)	1						
Evaluation Component	Value of X						
Assignment (Written	Above 80% Marks in Evaluation Component						
Assignments/Mini Projects/							
Flipped Classes/ Lab Quizzes/							
Practice sheets (in case VAP							
Courses)							
Mid Semester / Sessional	Above 60% Marks in Evaluation Component						
Examinations							
End Semester Examinations	Above 50% Marks in Evaluation Component						
Project Work/ Internships	Above 75% Marks in Evaluation Component						

Method of CO-Attainment calculation based on Level of Attainment for a course for 2018-19, 2019-20, 2020-21

Evaluation Component	Unit Coverage	Average Target Blooms Level (A)	Average Achieved Blooms Level (B)	Direct Level Attained (LA)	Effective Level Attained (ELA) ALA = (LA*B)/A	Weightage
Assignment 1/ Project Assessment 1	Units 1, Unit 2,	2	1.4	3	2.1	0.05
Assignment 2/ Project Assessment 2	Units 3, Unit 4, Unit 5	3	1.5	3	1.5	0.05
Sessional Exam 1/ Assessment 3	Units 1, 2,	2	2.3	2	2.3	0.1
Sessional Exam 2	Units 3, 4,5	3	2.6	2	1.7	0.1
End Semester Examination/ Final Project Assessment	All Units	2.5	3	2	2.4	0.6
			W	eightage A	verage	2.0

^{*}Attendance component is not counted

Method of CO-Attainment calculation based on Level of Attainment for a course for 2021-22 onwards

		Name of the	Course and	Course II)			
Evaluation Component	Question #/Unit Coverage	Average Target Blooms Level (A)	Average Achieved Blooms Level (B)	Direct Level Attaine d (LA)	Effective Level Attained (ELA) ALA = (LA*B)/A	Average Level Attained for Compon ent	Compone nt Weightage *	
Assignment 1/ Project Assessment 1	Q1/Units 1 Q2 / Unit 2 Q3/ Unit 2.5	3	1.4 2.6 2.5	3 2 2	2.1	2.1	0.05	
Assignment 2/ Project Assessment	Q1/Units 3 Q2/Unit 4 Q3/Unit 5	2 3 3	2.5 2.5 3	2 2 2	2.5	2.0	0.05	
Sessional Exam 1/ Assessment	Q1/Units 1 Q2/Unit 2 Q3/Unit 3	2 3 2	2.3 2.5 2	2 2 3	2.3	2.53	0.1	
Sessional Exam 2	Q1/Units 3 Q2/Unit 4 Q3/Unit 5	3 3 3	2.6 2.5 2.6	3 3	1.7 2.5 2.6	2.26	0.1	
End Semester Examination / Final Project	Q1/Units1 Q2/Unit 2 Q3/Unit 3 Q4/Unit 4	2 3 2 3	3 2 2 3	2 2 2 2	3 1.3 2 2	2.06	0.6	
Assessment	Q5/Unit 5	3	3	2 Weigl	2 nted Averag	ge	1.92	

^{*}attendance component is not counted

Attainment of Co through Students' and Teachers' feedback on Course

S No.	Levels	Performance quality	Attainment of CO
1	Feedback Criteria ≤ 1	Unsatisfactory/ Does Not Meet Expectations	o
2	ı ≤ (Feedback Criteria) ≤ 2	Satisfactory/ Marginal Expectations	1
3	2 ≤(Feedback Criteria)≤ 3	Good/ Meets Expectation	2
4	3 ≤(Feedback Criteria) ≤4	Excellent/Exceeds Expectations	3

Teachers' Feedback on Course (o-4)

	Criteria					Avera	ge	Attainment level of COs
Appropriateness of th	ne number	of credits	and			3.5		3
contact hours allocat	ed to your	course						
Adequacy of the cour	se content	in achievi	ng stat	ed		3.5		3
CO's/PO's/PSOs								
Structure, comprehe	nsiveness a	ınd relevar	ice of			3.6		3
the syllabus.								
The recommended to			ce boo	oks		3.1		3
are adequate and ma	p onto the	syllabus.						
-	oject wo			3.5		3		
development of expe			•	em				
solving and analytica								
Effectiveness of the	_					2.2		2
expert committee,		eetings l	ield :	for				
reviewing the syllabi.								
Effective implemen		• •				3.4		3
Research based Assi	_							
Projects, industria	trainin	gs acros	s yo	ur				
department.								
Rate the examination	•		n schei	me		3.2		3
of theory and practic	•	•						
transparent, reliable,	and balan							
		A	Averag	ge at	ttainn	ient		2.8

Student's Feedback on Course (o-4)

Criteria	Average		Attainment level of COs	
Rate your experience regarding	2.5		2	
relevance/rigor/coverage of the course taught to				
you				
Rate the quality/amount of questions through	3.5		3	
class practices/assignments/ lab assignments/				
case studies given to you for understanding the				
topics of the course				
Rate the pace of course coverage	2.6		2	
Rate the coverage and relevance of topics in hand	2.1		2	
note/textbooks/referential material/ Videos/ppts				
provided by the faculty members				
Effectiveness of course delivery and teachers	1.5		1	
preparedness of the course				
Effectiveness of course delivery tools, innovative	2.2		2	
and deployment of technology to make the topic				
more interesting and understandable				
Rate the applicability and Usefulness of ERP LMS/	2.4		2	
other learning platform used during the course of				
study				
Rate the quality of assessment done by the course	3.2		3	
teacher/Examiner				
A	verage attainr	nent 2.	37	

Consolidated COs attainment of the course

Assessment Method	Weightage	COs attainment
		level
COs Attainment from Evaluations (Direct)	0.7	2.02
COs attainment from Student's Feedback from courses (Indirect)	0.15	2.37
COs attainment from Teacher's Feedback from courses (Indirect)	0.15	2.8
	COs Attainment 0.15*2.37 + 0.15*2.8	2.18

PO/PSOs/PEOs attainment Model

Department of << Department Name>>

1) Mapping of Course outcomes with program outcomes

PROGRAM OUTCOMES (POs)

<<Sample>>

Engineering Graduates will be able to:

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, Engineering fundamentals, and an Engineering specialization to the solution of complex Engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics natural sciences, and Engineering sciences.

PO3. Design/Development of Solutions: Design solutions for complex Engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and Environmental considerations.

PO4. Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Modern Tool Usage : Create, select, and apply appropriate techniques, resources, and modern Engineering and IT tools including prediction and modeling to complex Engineering activities with an understanding of the limitations.

PO6. The Engineer and Society: Apply reasoning informed by the contextual knowledge

to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7. Environment and Sustainability: Understand the impact of the professional Engineering solutions in societal and Environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the Engineering practice.

PO9. Individual and Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. Communication: Communicate effectively on complex Engineering activities with the Engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project Management and Finance: Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary Environments.

PO12. 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.

Sample Subject :<< Subject Name >>

Subject	Course Outcomes		Program Outcomes										
		PO ₁	PO ₂	PO ₃	PO ₄	PO ₅	PO6	PO ₇	PO8	PO 9	PO10	PO 11	PO12
< <subject name="">></subject>	CO1:	2	2	3	3	2	3				2	2	3
	CO2:	2	2	3	3	2	3				2	2	3
	CO ₃ :	2	2	3	3	2	3				2	2	3
	CO4:	2	3	2	2	2	2				2	2	3
	CO ₅ :	2	3	2	2	2	2				2	2	3
	Average	2.3	2.5	2	3	2	2				2	2	3

1: Weakly Demonstrate 2: Moderately Demonstrate 3: Strongly Demonstrate

Program Specific Outcomes (PSOs)

(Sample)

Engineering Graduates will be able to:

- PSO₁: To identify, formulate and analyze the problems in Electronics Engineering by using principles of Mathematics and Engineering fundamentals.
- 2. **PSO**₂: Applying Electronics Engineering knowledge to design a system, analyze and interpret data to obtain valid conclusions.
- 3. **PSO**₃: Use of various Simulation tools such as Tanner Tool, MATLAB, MULTISIM, ORCAD etc. for design and analysis of various systems.

Subject		Course Outcomes	Pro	gram	specific
			0	utcomes	
			PSO ₁	P S	PSO ₃
< <subject< td=""><td></td><td>CO₁:</td><td>2</td><td>2</td><td>2</td></subject<>		CO ₁ :	2	2	2
Name>>		CO ₂ :	3	1	2
		CO ₃ :	2	3	3
		CO ₄ :	2	3	2
		CO ₅ :	3	3	3
	Av	erage	2	3	2

Method of POs and PSOs Attainment Calculations

Calculation of POs and PSOs attainment foracademicyear2018-19 onwards

S	TOOL	CATEGORY
1.	CO Attainment of all theory courses	Direct Assessment (50%)
2.	CO Attainment of all practical courses	
3.	Indirect 1: Feedback on Curriculum from Final year Students (Graduating) – 20% Indirect 2: Feedback on Curriculum from Teachers -20% Indirect 3: Feedback on Curriculum from HR/Employers of Students and External Mentors from Industry- 20%	Indirect Assessment (50%)

Direct Assessment Method (Through CO Attainment of all Courses)

Average Mapping Table (Targeted)

Semester	Course	РО	PO	РО	PO	PO	РО	PO	PO	PO	PO ₁	PO ₁	PO1	PSO	PSO	PS
		1	2	3	4	5	6	7	8	9	o	1	2	1	2	03
1	Course 11	2.	2.5	2.	3	3			3		3	3	3	2	2	2
		3		6												
	:															
1	Lab	2.	2.1	2.1	3	2			3	2						
	Course	2														
	16															
1	:															
2	Course	3		3	3	3	2	2	2			2.3	2.5	2.6	3	3
	21															
2	:															
3	Course	3	3	3	2	2					1	2	1	1	2	2
	31															
3	:															
:																
:																
:																
:																
8	Course	2	2	2	2			2	2	2	2	1	3	1	2	2
	81															
8	Course	2	3	2		2	2	2	2			1	1	1	2	2
	89															

Average Mapping Table (Achieved) (Direct)

Achieved mapping = (Average achieved level of course outcome)* Targeting mapping /3(maximum level of CO achieved =3)

(Example: If CO achieved = 3 then mapping achieved = average mapping targeted

Then if (CO achieved = 2.5) then mapping achieved = average mapping targeted* 2.5/3)

Semester	Course	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	Course	=2.3														
	11	*2.1														
		6/3														
	:															
1	Lab															
	Course															
	16															
1	:															
2	Course															
	21															
2	:															
3	Course															
	31															
3	:															
:																
:								- 1								
8	Course															
	81															
8	Course															
	89															
Average P	O Achieved	APA 1	APA	APA	APA	APA	AP	APA	AP	AP	APA	APA	APA	APS	APS	APS
(APA)			2	3	4	5	A 6	7	A 8	A 9	10	11	12	A 1	A 2	A 3

Indirect PO Attainment

S No.	Levels	Performance quality	Attainment of PO
1	Feedback Criteria	Unsatisfactory/	0
	≤1	Does Not Meet Expectations	
2	ı ≤ (Feedback Criteria) ≤ 2	Satisfactory/ Marginal Expectations	1
3	2	Good/ Meets	2
	≤(Feedback	Expectation	
	Criteria)≤		
4	3	Excellent/Exceeds	3
	≤(Feedback Criteria) ≤	Expectations	
	4		

Stakeholder's Feedback on Curriculum

Feedback	PO ₁	PO ₂	PO ₃	PO ₄	PO ₅	PO6	P	PO8	PO ₉	PO10	PO11	PO12	PSO ₁	PSO ₂	PSO	Attainme
Criteria							07								3	nt of PO
																(APO)
1	3	3	2	2			1	1	1	3	3	3	1	1	3	3
2	3	3													2	2
3			2	2	2	2	1	2	2	1	2	2	1	1	2	2
4	3	3	3	3	3	3	3	3	3					2	2	2
5										1	1	1	1	1	2	2
6	2	2	1	2	1	1	1	3	3	3	1	1	1	1	2	3
7					1	1					1			1	2	1
8	3	3	2	2			1	1	1	3	3	3	1	1	3	3
9	3	3													2	3
10			2	2	2	2	1	2	2	1	2	2	1	1	2	2
11	3	3	3	3	3	3	3	3	3					2	2	3
12										1	1	1	1	1	2	3
13	2	2	1	2	1	1	1	3	3	3	1	1	1	1	2	2
14	3	3	2	2			1	1	1	3	3	3	1	1	3	2

15	3	3													2	1
16			2	2	2	2	1	2	2	1	2	2	1	1	2	1
17	3	3	3	3	3	3	3	3	3					2	2	3
18	3	3	3	3	3	3	3	3	3					2	2	2
Average																
Attain																
ment																

Method of Calculation

Step 1: Every Row Element -> Multiply attainment of PO (APO) value in each corresponding row element

Step 2: Every Row Element -> Divide by 3

Step 3: Every Column-> Take the sum of all elements in column (say X)

Step 4: Every Column -> count the number of none zero element (say N)

Step 5: Average Attainment value of PO[i] = X/N

Adopting the similar approach, one can find out the indirect feedback for other stakeholders on Curriculum

Indirect 1: Feedback on Curriculum from Final year Students (Graduating) - 20%

Indirect 2: Feedback on Curriculum from Teachers -20%

Indirect 3: Feedback on Curriculum from HR/Employers of Students and External Mentors from Industry- 20%

Indirect 4: Feedback on Curriculum from Alumni -20%

Indirect 5: Feedback from Co-curricular Activities- 20%

Final Calculations for PO/PSO attainment

Attainment	Weig	PO	PO	PO	PO	PO	PO	PO	PO	PO	PO ₁	PO11	PO	PS	PS	PS
	htage	1	2	3	4	5	6	7	8	9	O		12	Oı	O ₂	03
Direct	0.5	2.4														
Attainment																
Indirect	0.1	2.5														
Attainment 1																
Indirect	0.1	2.6														
Attainment 2																
Indirect	0.1	2.8														
Attainment 3																
Indirect	0.1	2.4														
Attainment 4																
Indirect	0.1	2.3														
Attainment 5																
Weighted A	verage	2.4														
		6														

10. OBE Quality Management

The utility of Outcome Based Education (OBE) works as two edged sword in one hand it helps us to evaluate CO and PO attainment and on the other hand it guides us as to where the improvement in quality is required which creates a loop of feedback and prompt action for improvement.



The figure above sheds light on the process that needs to be followed in order to maintain the OBE quality cycle. In total, the main aim of the OBE architecture is to improve the quality of education and the product it produces in terms of high functioning students. The OBE quality cycle is the incessant progression of improving and evolving of educational programs ensuring industry demand and at the same time maintaining the standard of education.

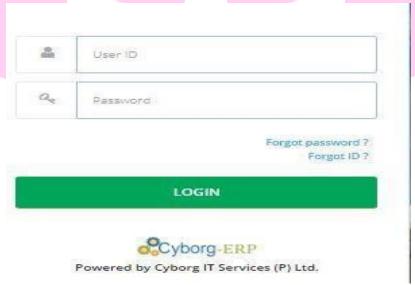
11. Internal Quality Assurance Cell {IQAC} Manual on ERP Implementation

The calculation of CO/PSOs, PEOs attainment is all about compiling data as compiling attainment we need to input the marks question wise, of each & every single question, of each task included in each assessment component and this is done for all the enrolled students., handling this quantity of data manually is overwhelming and makes it more difficult.

To ease the task of calculation and make it error free the university has developed OBE software name (Cyborg ERP IQAC Software) that helps in calculating the attainments. As you will read further, you will find manual of the software, registration process, sample of PO attainment report, CO attainment report, Closure report and sample of summary sheet, all are systematically elaborated with screenshots wherever necessary.

<u>Cyborg – ERP Login Process InWeb</u>

Open any browser (like Google chrome etc.) & insert URL provided by your Administration.

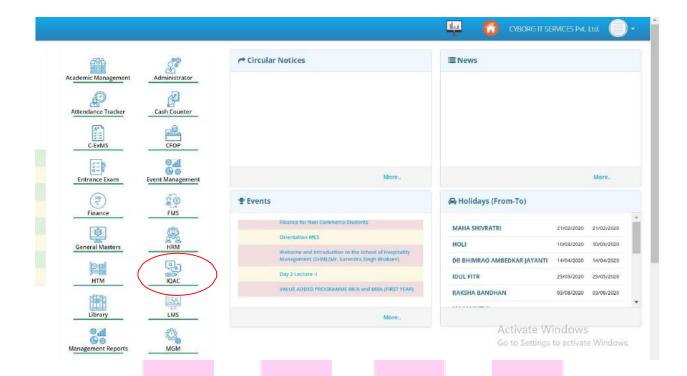


Login page will get open

Step 1: Enter the User ID.

Step2: Enter the password.

Step3: Click on Login Button.



After login above page will be visible click on IQAC.

OBE- Outcome-Based Education (OBE) is a student-centric teaching and learning methodology in which the course delivery, assessment is planned to achieve stated objectives and outcomes. It focuses on measuring student performance i.e. outcomes at different levels.

This ensures that a graduate not only possess a sound knowledge in the specific program they also can have a global mobility and acceptance.

IQAC stands for Internal Quality Assurance Cell. IQAC in any institution is a significant administrative body that is responsible for all quality matters. It is the prime responsibility of IQAC to initiate, plan and supervise various activities that are necessary to increase the quality of the education imparted in an institution or college.

1-Creation

1.1 PEO/PO/PSO Creation

PEO's (Programmed Educational Objectives)-This interface describes the career and professional accomplishments that programs are preparing graduates to attain within a few years of graduation.

Step1-Select the session, University, college, course type, course, branch (if any).

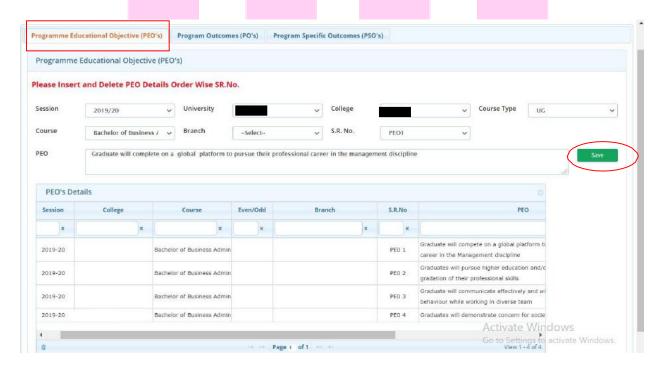
Step2 -Select the serial order of the Program like PEO1, PEO2 etc.

Step3 - Write the PEO's for the particular serial which you want to add.

Step 4 - Click on save button.

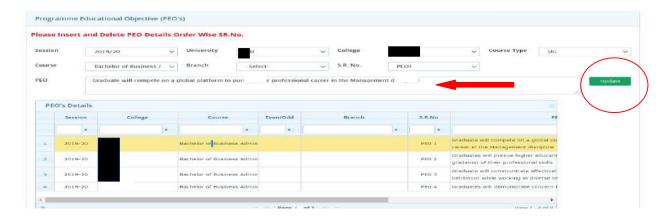
Please insert and delete CO details Order Wise SR. No.

The information will be saved in the below PEO's details grid as shown in figure below:-



NOTE-PEO/PO/PSO will always be deleted in descending order.

If you want to update PEO, double click on the particular row. It will appear in above PEO box. Make the necessary changes and click on update button.



PO's (Program outcome)

Program outcomes examine what a program or process is to do, achieve, or accomplish for its own improvement and/or in support of institutional or divisional goals: generally, numbers, needs, or satisfaction driven. They can address quality, quantity, fiscal sustainability, facilities and infrastructure, or growth.

Step1-Selectthesession, University, college, course type, course, branch (if any).

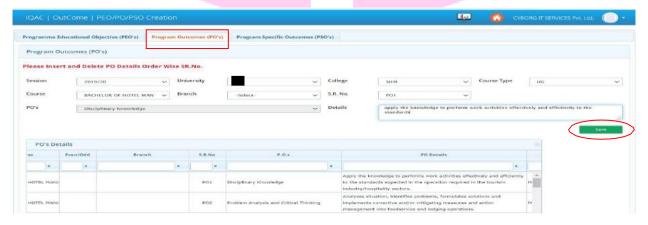
 ${\bf Step 2- Select the\ serial order of the Program like PO_1,\ PO_2\ etc.}$

Step 3-Write the PO details for the particular serial which you want to add.

Step4-Clickonsavebutton.

❖ Please insert and delete CO details Order Wise SR. No.

The information will be saved in the below PO's details grid as shown in figure below:-



-If you want to update PO's, double click on the particular row. It will appear in above detail box. Make the necessary changes and click on update button.

PSO's (Program Specific Outcomes)

These are statements that define outcomes of a program which make students realize the fact that the knowledge and techniques learnt in this course has direct implication for the betterment of society and its sustainability.

Step1 – Select the session, University, college, course type, course, branch (if any).

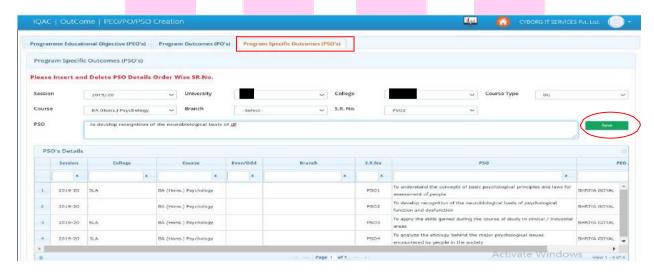
Step2 - Select the serial order of the Program like PSO1, PSO2 etc.

Step3 - Write the PSO details for the particular serial which you want to add.

Step4 - Click on save button.

❖ Please insert and delete CO details Order Wise SR. No.

The information will be saved in the below PSO's details grid as shown in figure below:-



-If you want to update PSO's, double click on the particular row. It will appear in above detail box. Make the necessary changes and click on update button.

1.2 CO Creation

A course outcome basically describes what a faculty member will cover in a course. It describes the learning that will take place across the curriculum through concise statements, made in specific and measurable terms, of what students will know and/or be able to do as the result of having successfully completed a course.

Step1 - Select the session, University, college, course type, course, semester, branch (if any).

Step2 – Select the serial order of the Program like CO1, CO2 etc.

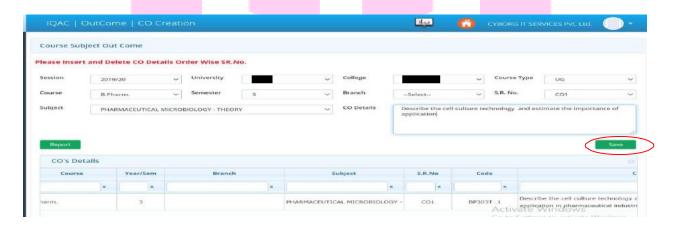
Step3 - Select the subject name.

Step4 - Write the CO details for the particular subject which you have selected.

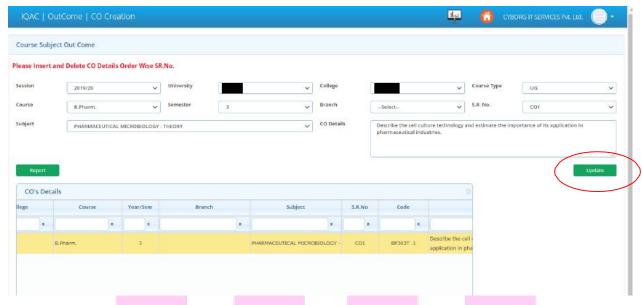
Step5 - Click on save button.

❖ Please insert and delete CO details Order Wise SR. No.

The Course outcome will be saved in the below CO's details grid as shown in figure below: -



-If you want to update CO's, double click on the particular row. It will appear in above CO details box. Make the necessary changes and click on update button.



2 View/Lock

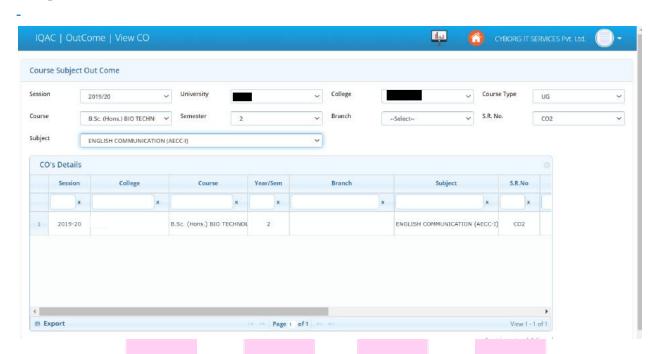
2.1 View CO

If you want to view the course subject outcome select the session, University, college, course type, course, branch(if any).

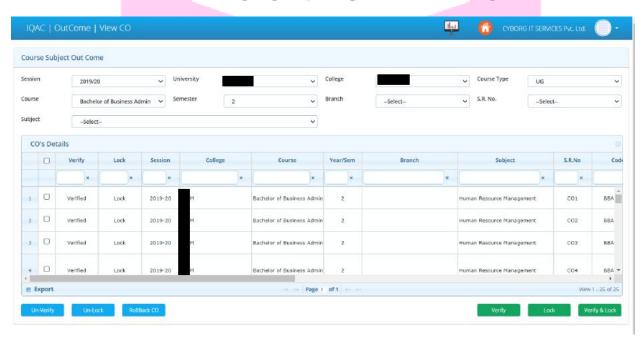
Note:-CO Verify right sare open only on HODs login while CO lock rights are open at dean/director end.

PO/PSO/PEO rights are open only for Dean/Directors/IQAC head.

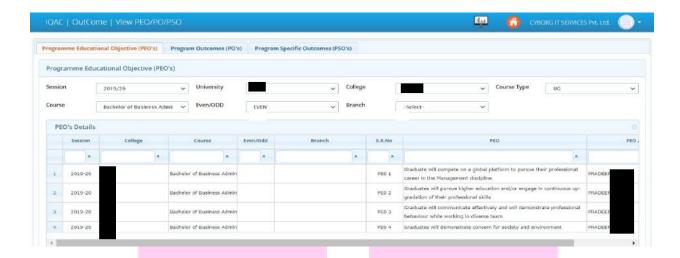
The list of Course outcomes will appear in the below CO's details grid as shown in figure below:



The Course outcome should have to be locked and verified once done in order to fix it, so that it cannot be change again and again as shown in figure below:-



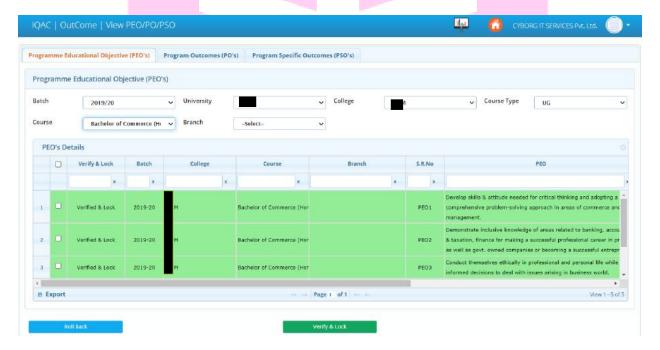
2.2 View PEO/PO/PSO



In order to view PEO/PO/PSO: Select the session, University, college, course type, course, Even/odd branch (if any) The list of the PEO/PO/PSO will appear in the below grid as shown in figure below: -

The user should have to lock and verify the given PEO/PO/PSO one by one as shown in figure below:-

The user can also rollback the verified data if necessary.



3- Mapping

(Program mapping) **facilitates the alignment of course-level outcomes with program outcomes**. It allows faculty to create a visual map of a program. It is also used to explore how students are meeting program-level outcomes at the course level. Outcomes mapping focuses on student learning.

3.1 CO/PO/PSO Mapping

Step1-Select the session, University, college, course type, course, semester, branch (if any).

Step2-Select the subject name.

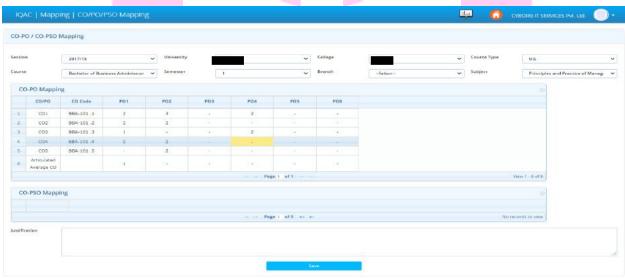
The mapping details will be shown in the below grid:-

Note:-1) Please insert mapping point carefully.

- 2) Click once ll to enter mapping point.
- 3) Mapping point should be between 1t 03

Step3-Click on save button.

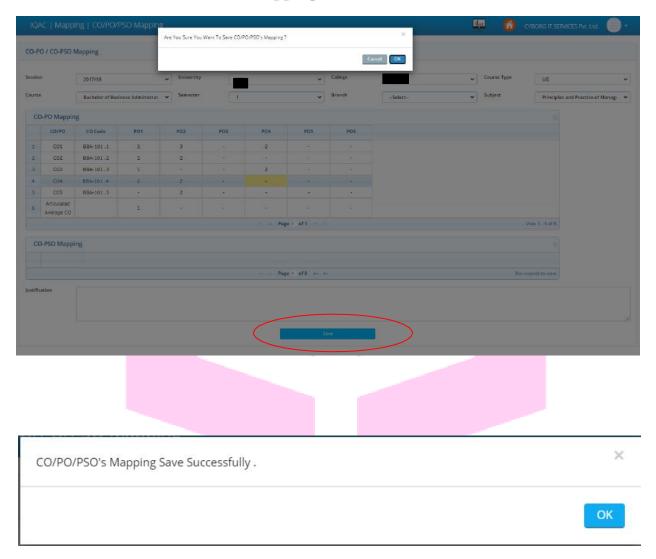
Note -The Articulated average CO will be calculated on its own, once the user



clicks on save button.

Update button is only visible to concerned faculty who has done the mapping earlier. When you click on save button you will receive a confirmation message.





3.2 PO/PSO/PEOMAPPING

This interface is used for PO/PSO/PEO Mapping.

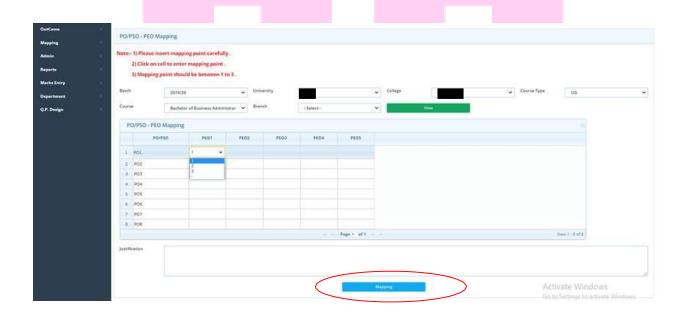
Step1-SelectBatch, University, College, Course type, Course, Branch (if any).

Step2 - Click on View button. PO/PSO-PEO mapping grid will open.

Note:-1) Please insert mapping point carefully.

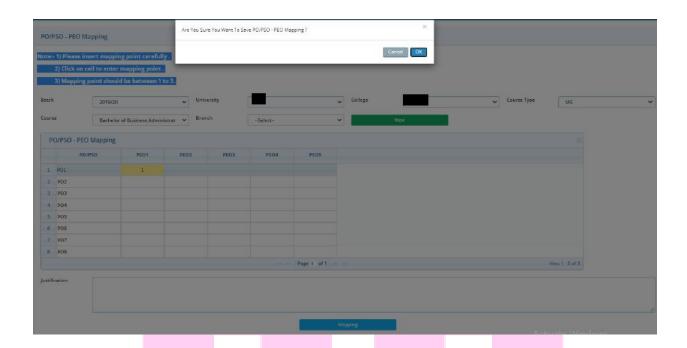
- 2) Click on cell to enter mapping point.
- 3) Mapping point should be between 1t 03.

Step3 - Enter the justification if possible (Not mandatory).



Step4 - Click on mapping button. A pop message will appear.

Step5 - Click on Ok button.



4- Admin

4.1 Subject Re-Assign

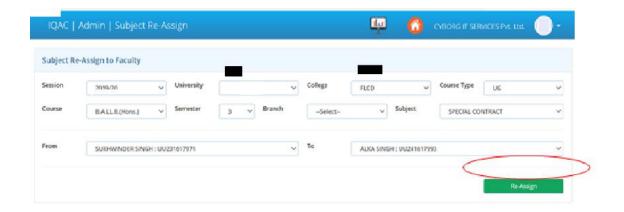
This interface is used to re-assign the IQAC subject to another employee.

Step1 – Select the session, university, college, course type, course, semester, branch (if any).

Step 2-Selectthenameofthesubjectforwhichyou want to re-assign.

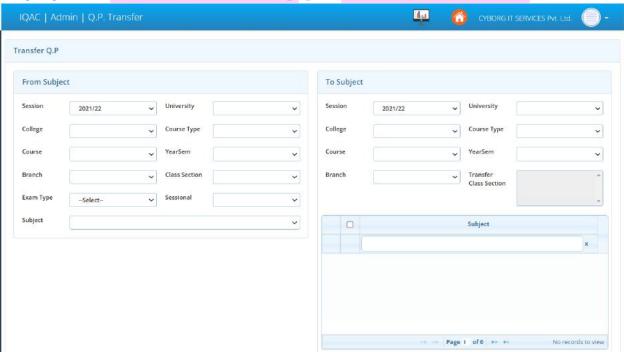
 ${\bf Step 3\text{-} Select from employee \text{--} to \text{ } employee.}$

Step4-Clickon Re-Assign button.



4.2 Question Paper Transfer

This Form is use to transfer the question paper from one section to another only if you want to circulate the same paper.



In from subject grid:-

Step1-Select the session, university, college, course type, course, semester, branch, class section.

Step2 - Select exam type method and Sessional.

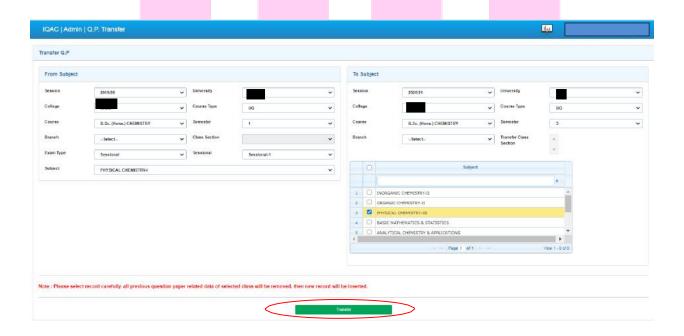
Step3 – Select the name of the subject from which you want to transfer the question paper. In To subject grid:-

Step₄ – Select the combination carefully in which you want to transfer the question paper.

Step5 – Select the transfer class section (use ctrl key to multi select).

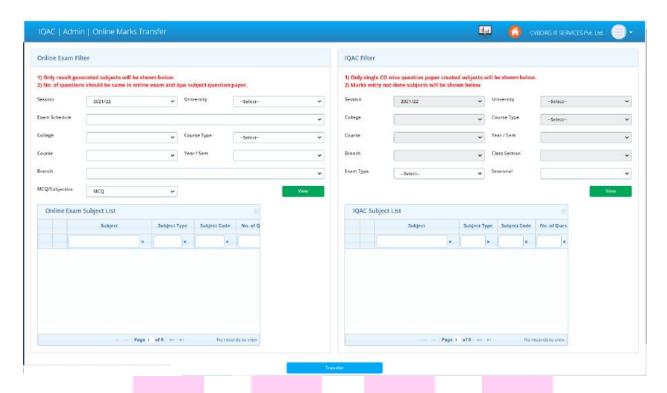
Step6 - Click on Transfer button.

The question paper for that particular subject will be transferred to the other section/session/semester of the same/another class.

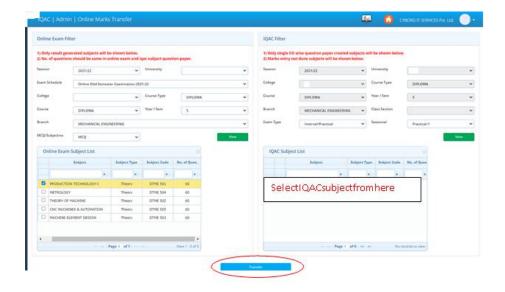


4.3 Online Marks Transfer

This interface is used to transfer online marks to IQAC.



- Step1 From Online Exam Filter grid, Select Session & University.
- **Step2** Select Exam schedule from which the user wants to transfer the marks.
- **Step3** Select College, Course Type, Course, Year/Sem and branch (if any).
- Step4 Select Exam Type as MCQ/Subjective.
- **Step5** Click on view button to view the subject.
- From **Online Exam Subject** list, select subject whose marks have to be transferred to IQAC. Now,
- **Step6** From **IQAC filter** grid select the exam type (like Sessional, TA, Internal Practical, End term etc.) in which the marks has to be transferred to.
- Step7 Click on view button to view the IQAC subject list
- (If any of the subject is not visible then please check whether Subject weightage is assigned or not)
- **Step8** Select the same subject from **IQAC Subject list**.
- **Step9** Click on **Transfer** Button to transfer the marks from Online (MCQ/Subjective) to IQAC.



4.4 Subject Weightage Assign

From this interface IQAC weightage is assigned to the subjects.

Step1 – Select Session, University, College, Course type, Course, Year/Sem, branch (if any).

Step2 – Select Exam type.

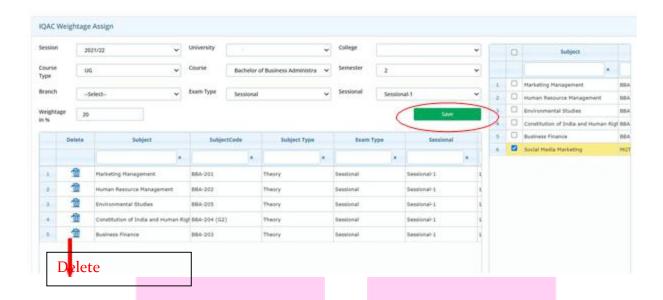
Step3 – From the right side of the grid select the subject in which the weight age is to be assigned.

Step4 – Enter Weightage in %.

Step5 – Click on **Save** Button.

The save data will be shown in the below saved grid as shown in figure below: -

If the user wants to delete the data then he/she should have to click on **delete**icon.



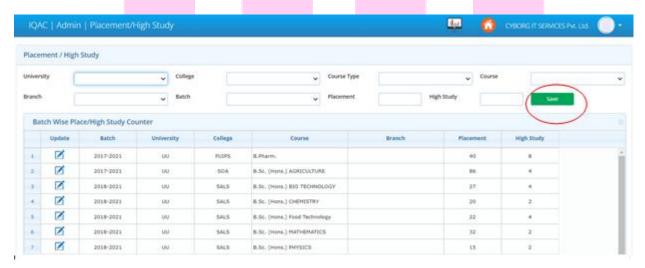
4.5 Placement/High Study

This interface is used to **save** and **view** the record of batch wise placement and high study counter.

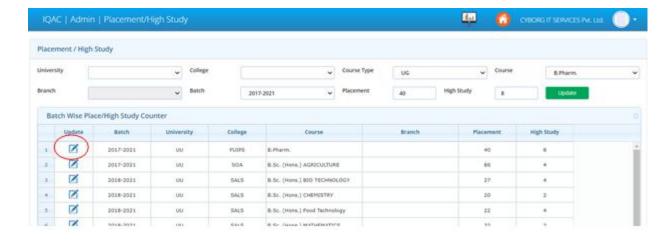
Step1 – Select University, College, Course Type, Course, Branch (if any).

Step2 – Select the **batch** and enter the **placement** and **high study** counter.

Step3 - Click on Save button to save the data as shown in figure below:-



The user may also update the record, for that he/she should have to click on **update** button as shown in figure below:-



4.6 MCQQP. & Marks transfer to IQAC

This interface is used to transfer MCQ Question paper and Marks to IQAC directly.

Step1-From **Online Exam Filter** grid, Select Session & University.

Step2-Select Exam schedule from which the user wants to transfer the QP & Marks.

Step3-Select College, Course Type, Course, Year/Sem and branch (if any).

Step4-Select Exam Type as MCQ.

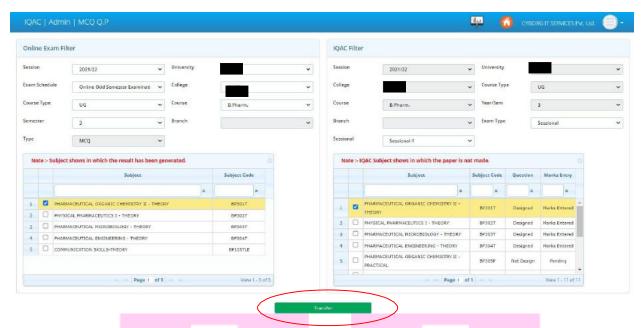
Step5-Clickonviewbuttontoview the subject.

From **Online Exam Subject** list, select subject whose marks have to be transferred to IQAC. Now,

Step 6-From **IQAC filter** grid select the exam type (like Sessional, TA, Internal Practical, End term etc.) in which the marks has to be transferred to.

Step7-Clickonviewbuttontoviewthe IQAC subject list

Step8-Selectthesamesubjectfrom **IQAC Subject list**.



Step9- Click on **Transfer** Button to transfer the QP & Marks from Online (MCQ) to IQAC.

5- Q.P. Design

5.1 Q.P. Configuration

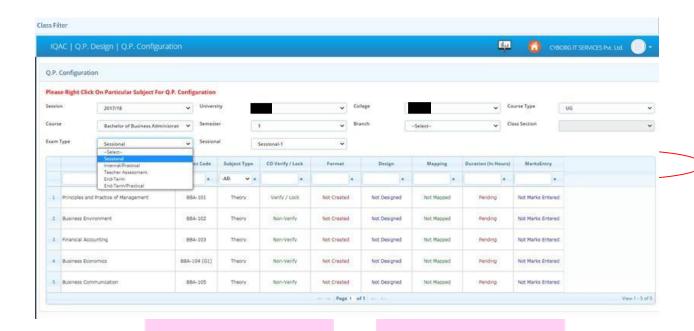


Step1- Select the session, university, college, course type, course, year/semester, branch (if any).

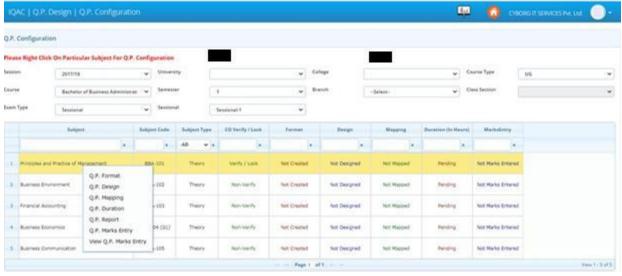
Step2- Select exam type.

Subject list along with the status of the question paper will appear in the below grid.

The complete status of the particular subject will be shown in the below grid like the CO-Verify/lock.



Step3- Right Click on the particular subject for Q.P. Configuration.

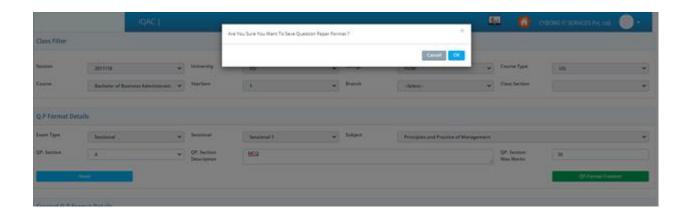


5.1a Q.P. Format Creation

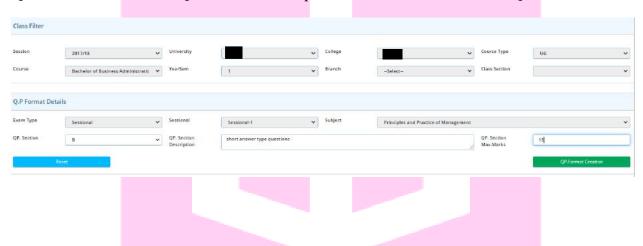
Step1 – Select the QP. Section as A,B etc.

Step2 – Enter QP. Section description and QP. Section max. Marks.

Step3 – Click on Q.P. format Creation.

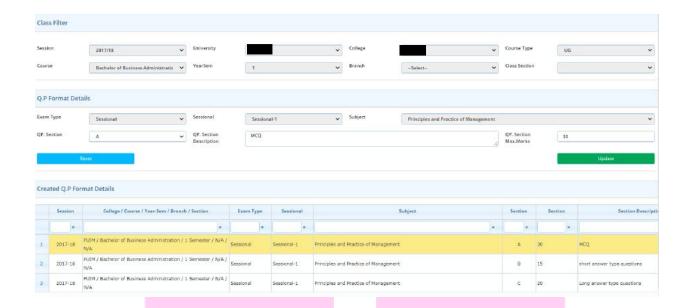


Similarly, if the question paper consists of section B, C, D.... then the user should have to select QP Section B, enter the QP. Section description and marks and click on QP. Section Creation.

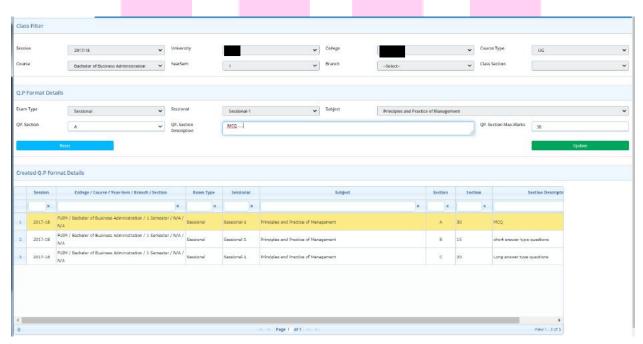


If the user wants to **update** the QP. Format Creation, then he/she should have to double click on the particular subject from the created QP. Format Details.

Make the necessary changes and click on delete button.



If user wants to **delete** the saved data, then he she should have to select the subject from the created QP. Format details and click on delete icon.



5.1b QP. Design

In this interface format is created where the user should have to select the QP. Format.

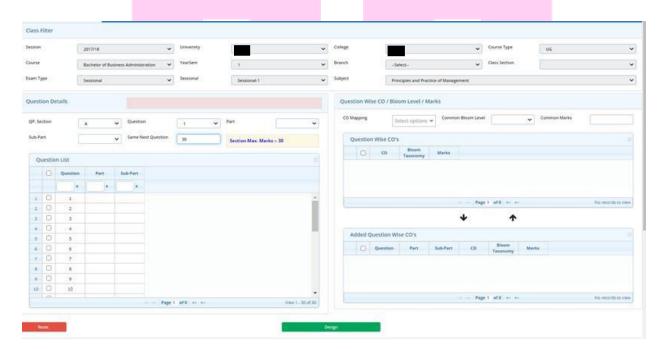
Step1 – Select the QP Section.

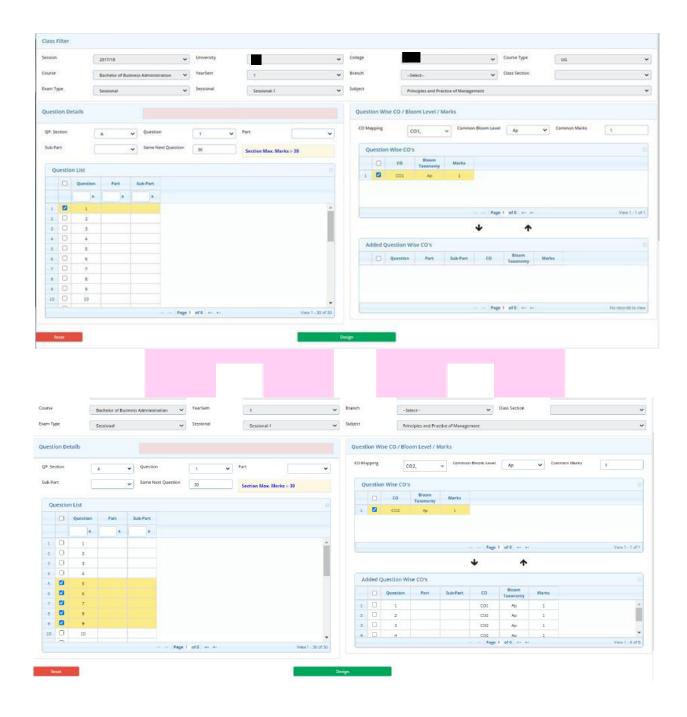
Case 1 – If the question paper consists of MCQ type Questions:

Step2 - Select the question as 1.

Step3 – In **same next question box** enter the total count of MCQ questions like 30, 60 etc.

Step4 – Select one question from the question list or the user may select multiple questions if the CO, Bloom taxonomy and common marks are same.



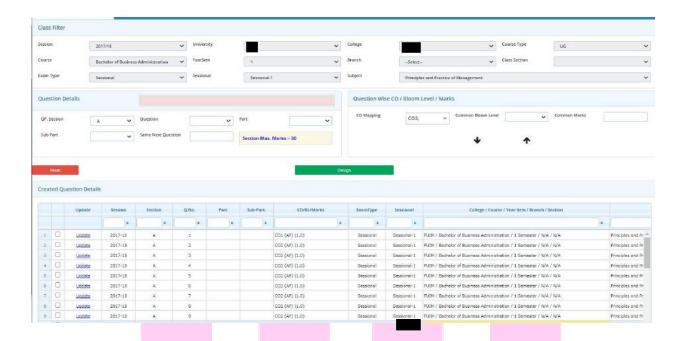


Step5 – Click on arrow button to add the questions CO wise.

Step6 – Select the data and click on design button.

When the user clicks on design button a confirmation message will appear. Click on ok button to save the data.

The saved data will be shown in the below Created Question Details grid as shown in Figure below:-The user may also update the data from the saved grid.

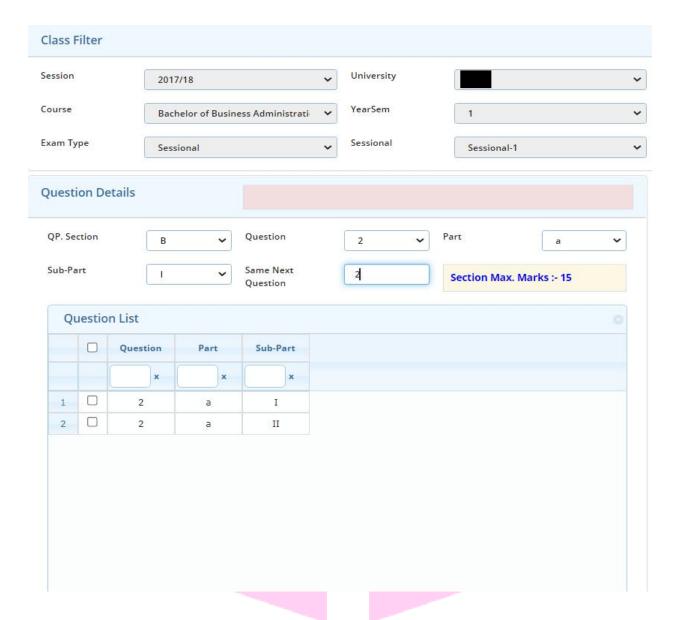


Update – The user may also update the data from the saved grid.

Step1 – Click on update button. **Update question details** window gets open.

Step2 – The user may update the CO, Bloom taxonomy etc.

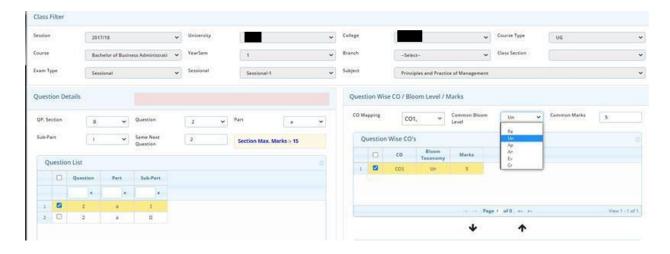
Step3 – Click on **update** button to save the data.



Case2 - In case of either or.

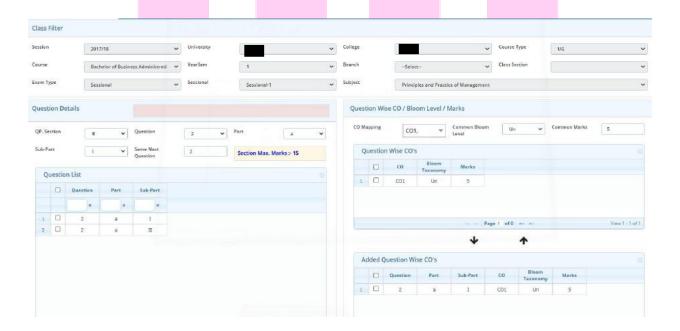
Step1 – Select QP. Sections, question no., part a, subpart 1, same next question as 2.

Step2- Select the question and map them as per their Course outcome, Blooms and enter the marks.

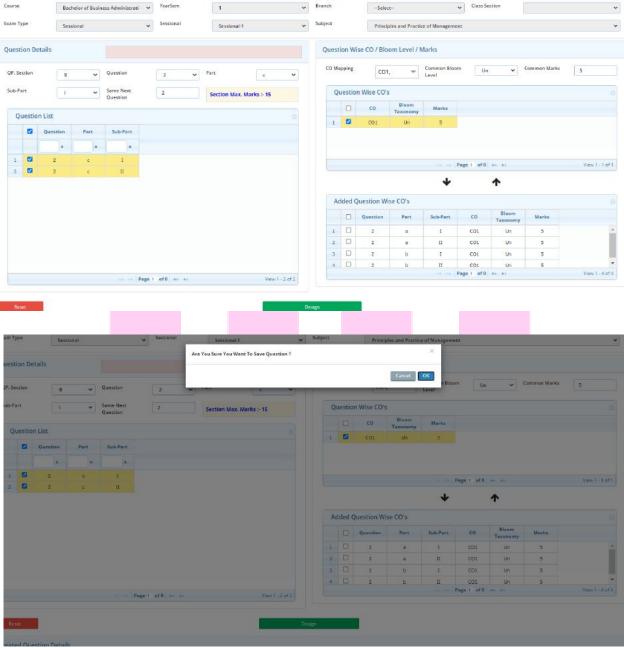


Step3 – Click on the arrow icon to add the data.

The added data will be shown in **Added question wise CO's** grid as shown in figure below:-

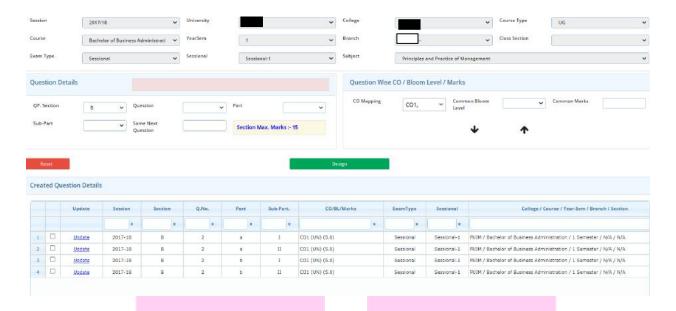


Step4 – Repeat the same for the next questions also-Add the data and click on **Design** button as shown in figure below Principles and Practice of Management Question Wise CO / Bloom Level / Marks CO1, QP. Section



Similarly the user can also update the data once saved.





Case 3- In case of attempt any 4 out of 5 questions:-

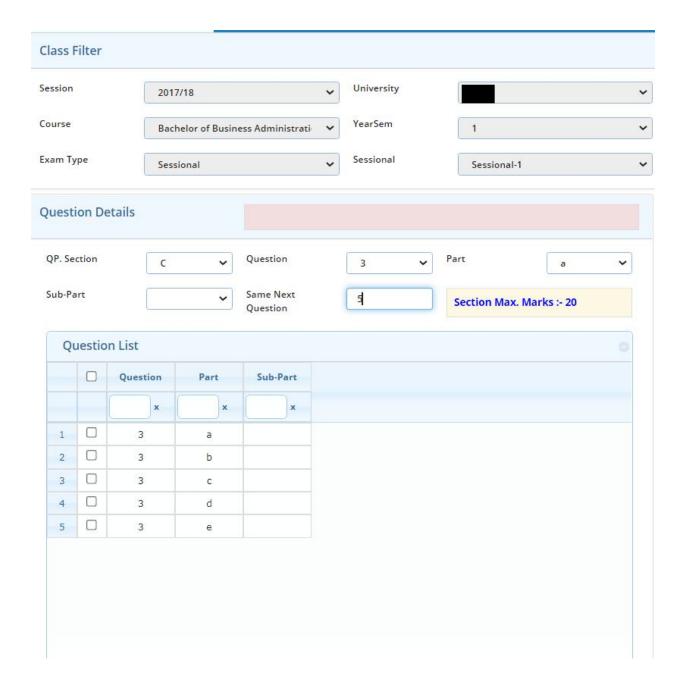
Step1 – Select QP. Section.

Step2 – Select the question number.

Step3 – Select the part as 'a' and same next questions as '5'.

Question list will appear.

Step4 – Select the question.

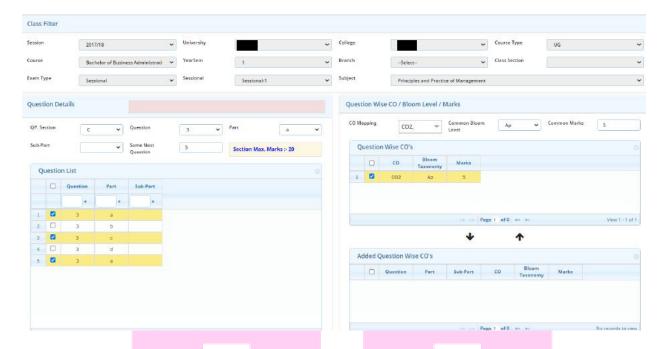


From the right side grid map select the CO and Bloom for that question.

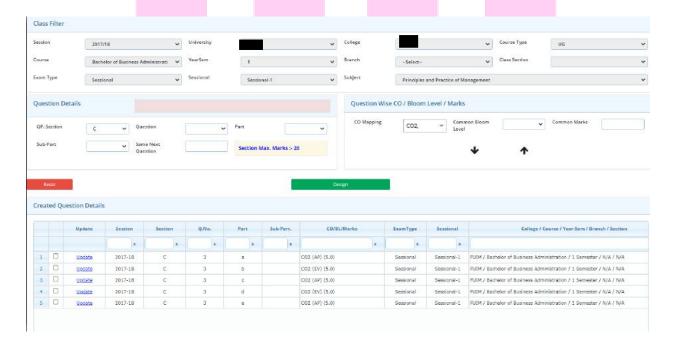
Step5 – Enter the common marks.

The user can also change the marks and Bloom from the question wise CO grid.

Step6 – Click on **arrow** icon to add the data.

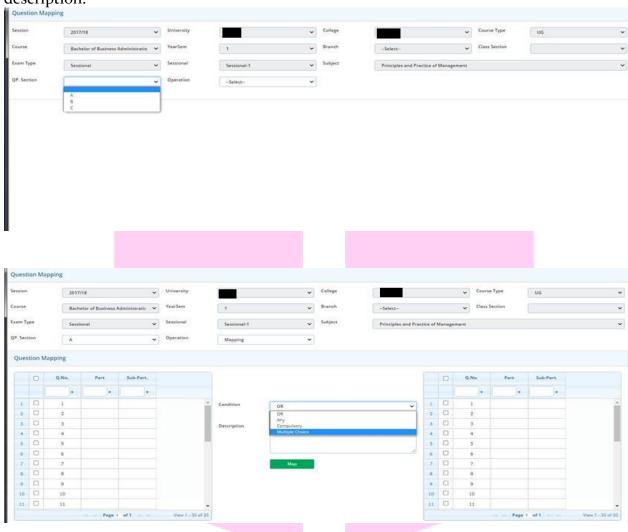


Step7 – Click on **design** button to Design the particular section. The user may also update and delete the save data.



5.1c QP. Mapping

In this interface question paper mapping is done on the basis of question paper description.



Case1 - Multiple Choice Questions

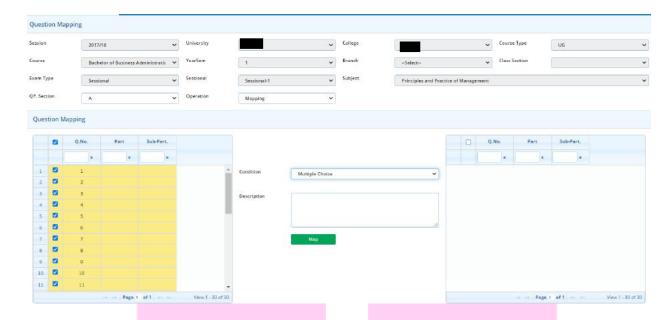
Step1 – Select QP. Section A.

Step2 – Select the operation as Mapping.

Step3 – From Question mapping grid, select the questions.

Step4 – Select the Condition as Multiple Choice. (Description is not mandatory).

Step5 – Click on **Map** button.



Case II-Either Or

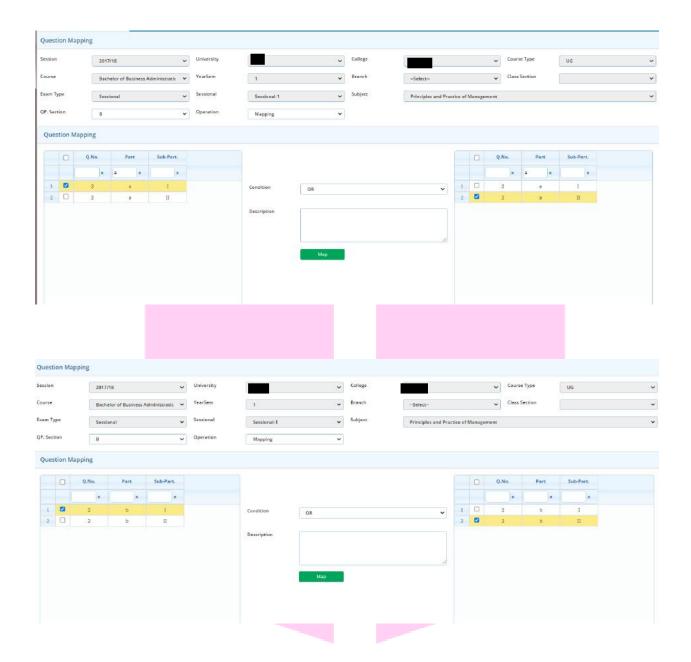
Step1 – Select QP. Section B.

Step2 - Select the operation as Mapping. From Question Mapping grid,

Step3 – From the left grid the user should have to select upper questions of **OR** mapping and from the right grid select the lower questions of **OR** mapping. Same questions could not be selected from both the grid.

Step4 – Select the QP. Section Condition as OR. (Description is not mandatory).

Step5 - Click on Map button.



Case III - Attempt any 4 questions from the following.

Step1 – Select QP. Section C.

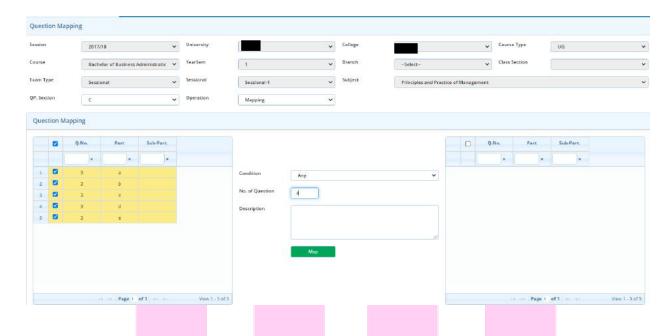
Step2 – Select the operation as Mapping.

Step3 – From Question mapping grid, select the questions.

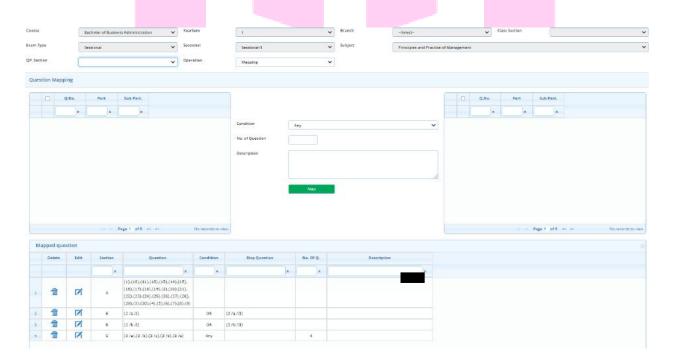
Step4 – Select the Condition as any. (Description is not mandatory).

Step5 – Enter the no. of questions as

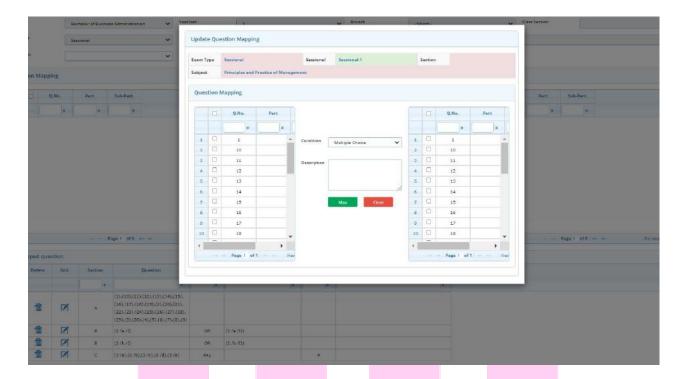
Step6 - Click on Map button.



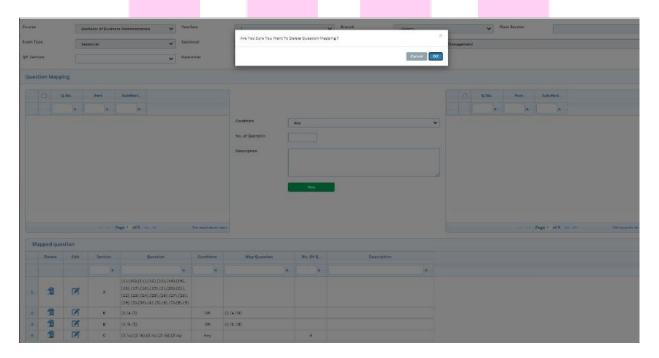
The saved data will be shown in the below Mapped questions grid.

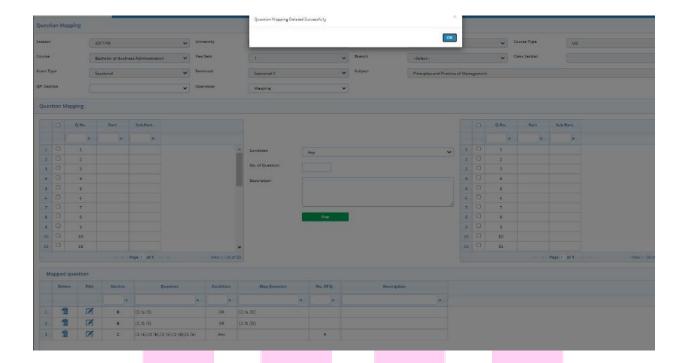


The user can also update and delete the saved data from the Mapped Question grid.



Click on delete icon to delete the record.





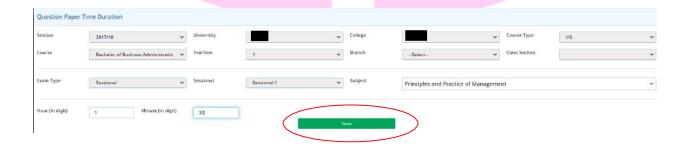
5.1d QP. Duration

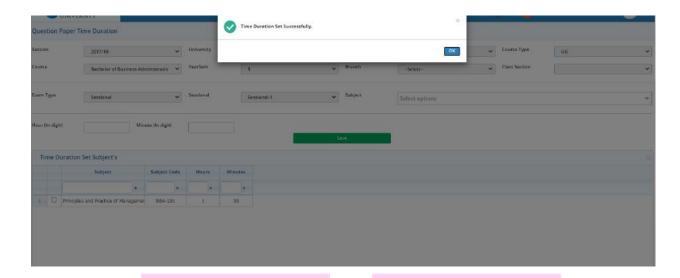
This interface is used to set the time duration of the Question paper.

Step1 – Select the subject from the grid.

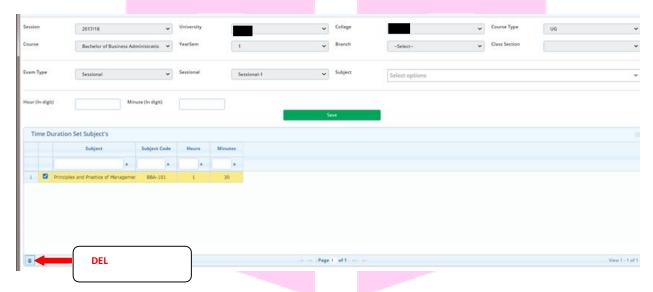
Step2 – Enter the Time of the paper.

Step3 – Click on save button to **set** the time.



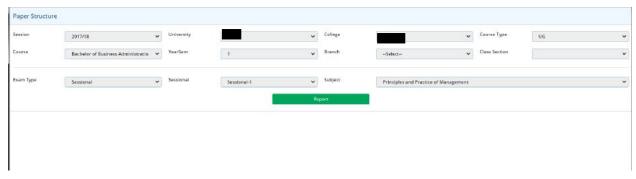


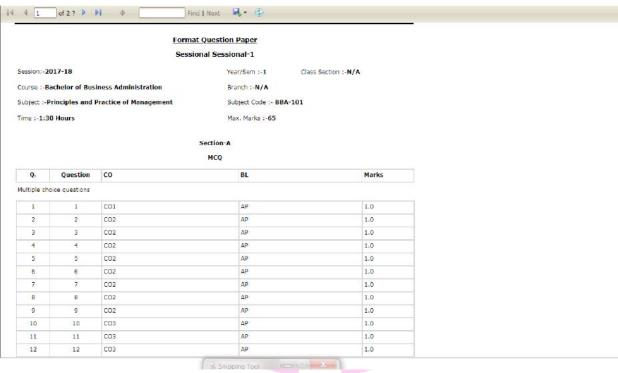
In case the user wants to delete the data, for that select the subject from the **Time duration Set Subject's** grid and click on **delete** icon.

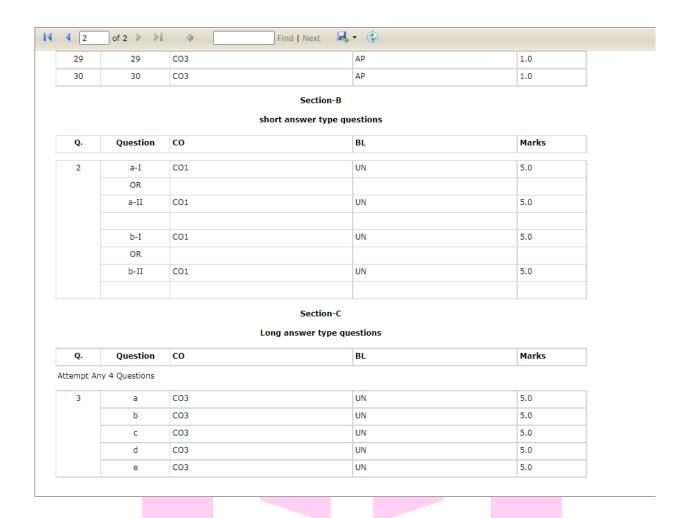


5.1e QP. Report

Click on **Report button** to generate the report.

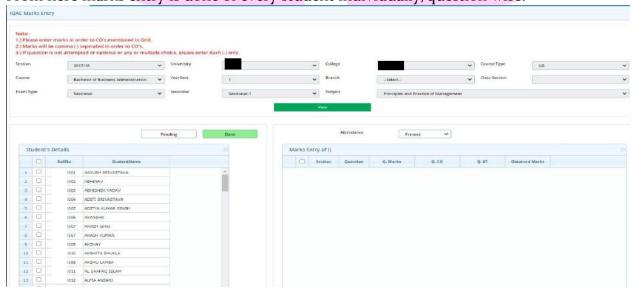


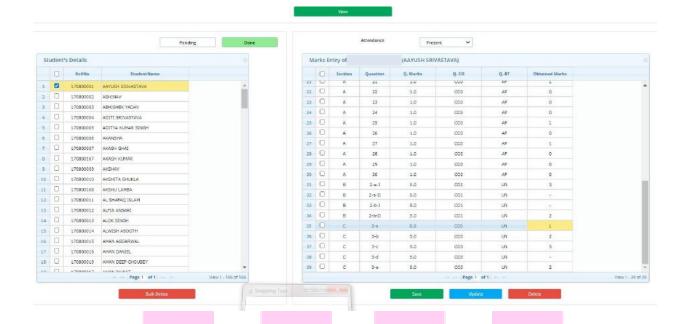




5.1f Q.P. Marks Entry

From here marks entry is done of every student individually/question wise.





Step1 - Click on View Button. Student list will appear in student details grid.

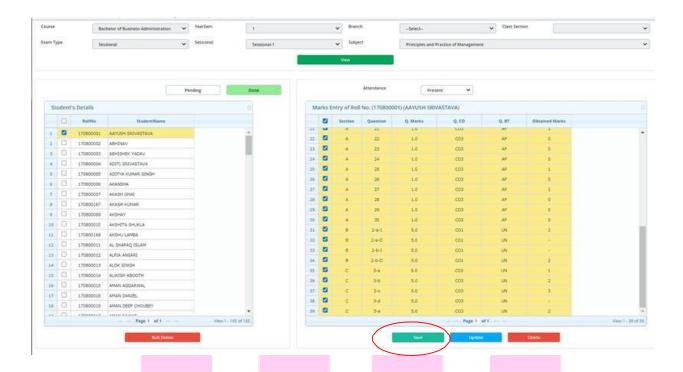
Step2 – Select individual student from the student details grid. In right side of the grid question wise configuration of question paper is opened where marks entry has to be done.

Step3 – Select the attendance of the student as Absent/Present.

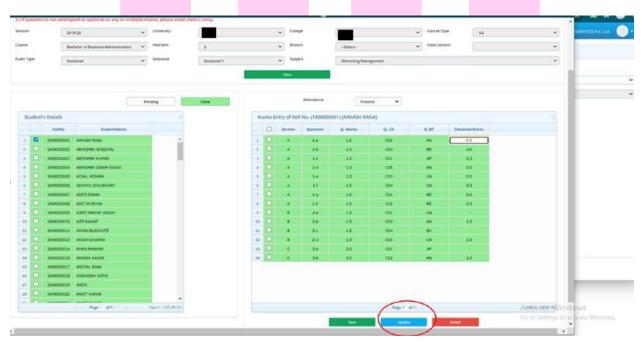
Step4 – Enter question wise marks.

- ❖ If any question is not attempted but is compulsory then the marks are given accordingly i.e., for not attempted=o.
- If any question is optional enter (-).
- ❖ Blank will not be accepted in any case.

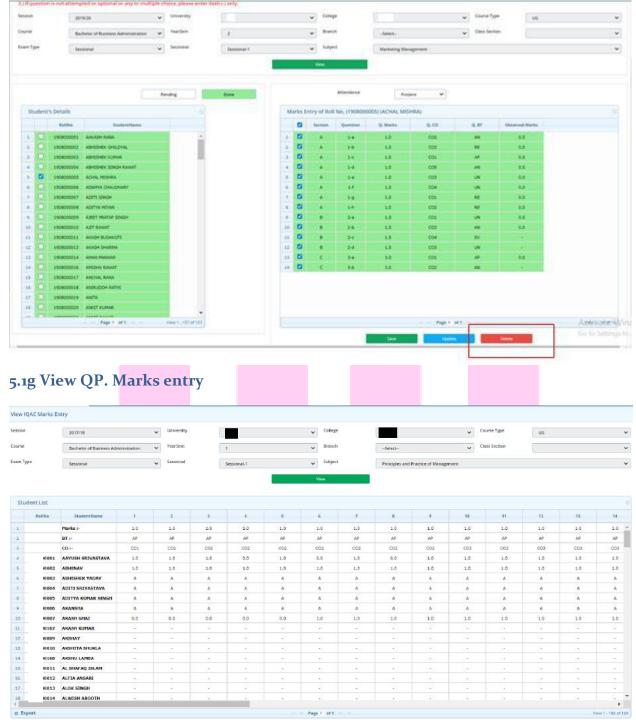
Step5 – Click on **save** button to save the marks.



Update: Click on **Update** button to update the marks.



Delete: Click on **delete** button to delete the marks.



Click on view button to view the Q.P. Marks entry of students.

5.2 CO and Bloom Weightage

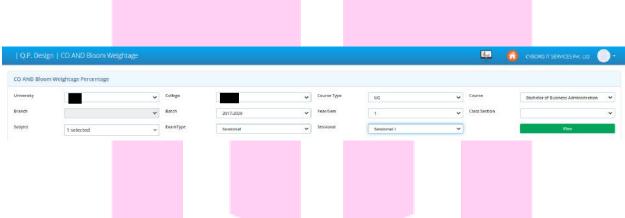
This interface is used to view CO Weightage percentage and Bloom weightage Percentage.

Step1 – Select University, college, course type, course.

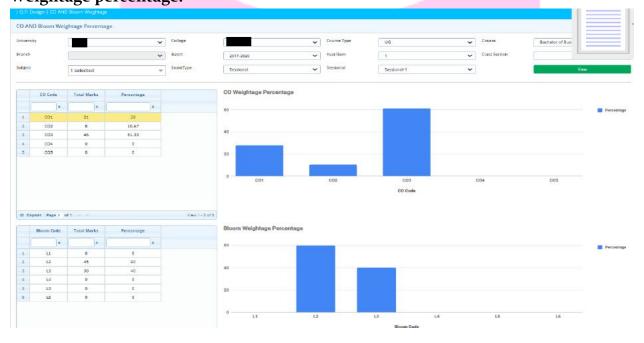
Step2 – Select the Batch.

Step3 – Select Year/Semester.

Step4 - Select Exam type and Sessional.



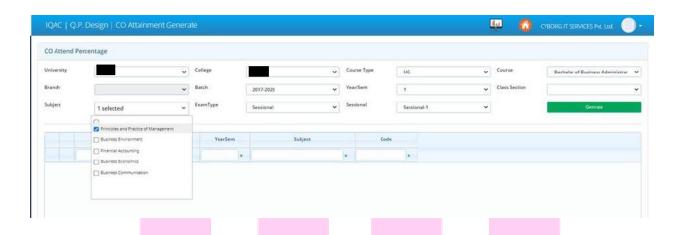
Step 5 – Click on **view** button to view the **CO Weightage Percentage** and **Bloom Weightage percentage**.



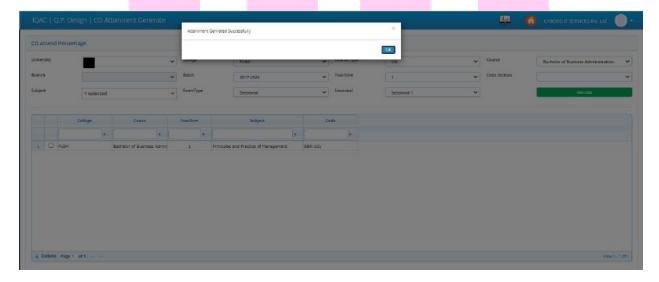
5.3 CO Attainment Generate

This interface is used to generate the CO Attainment.

- **Step1** Select University, College, Course Type, Course, Year/ Semester.
- **Step2** Select Batch, Exam Type, Sessional.
- **Step3** Select the **subject** from the subject drop down.



Step4 – Click on **Generate** Button to generate the **CO Attainment**.



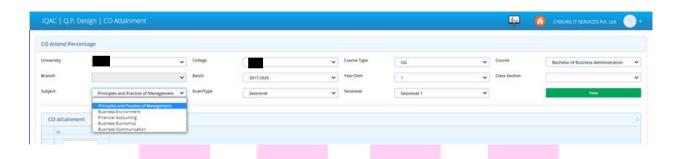
5.4 CO Attainment

This interface is used to view the CO Attainment.

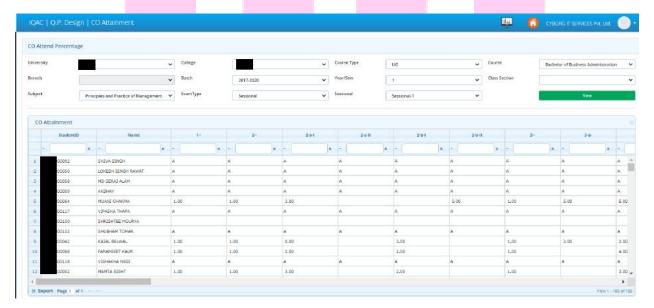
Step1 – Select University, College, Course Type, Course, Year/Semester.

Step2 – Select Batch, Exam Type, Sessional.

Step3 – Select the **subject** from the subject drop down.



Step4 – Click on **View** button to view the CO Attainment.



5.5 Subject Weightage Assign

Weightage in marks in an exam is the quota assigned to a particular segment like 10% weightage would be given to the Sessional exam or 60% weightage is given to the end term exam etc. as per university criteria.

This interface is used to assign subject weightage.

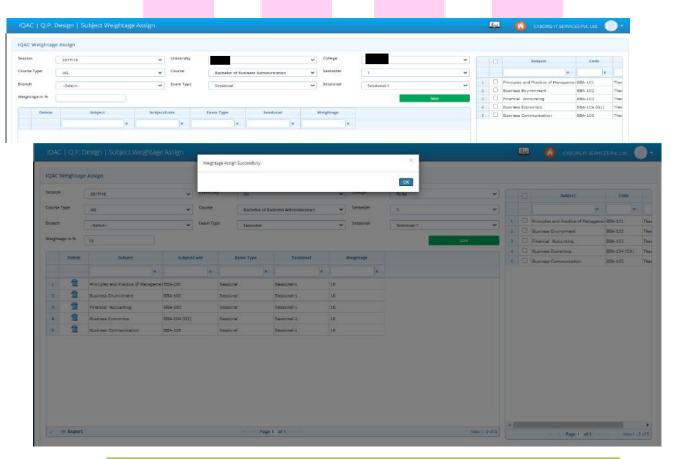
Step1 – Select the session, University, College, course type, course, semester.

Step2 – Select the exam type from the drop down as Sessional, end term etc. one by one.

Step3 – from right side grid select the subject for which the user wants to assign the weightage.

Step4 - Enter the weightage percentage.

Step5 - Click on save button to save the data.



6- Reports

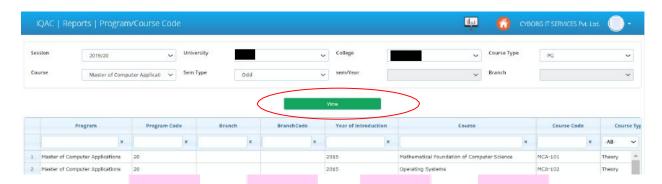
6.1 Program/Course code

Here we can see that which program is offered in which year to which course along with the course code.

Step1 – Select the session, university, course type, course, semester.

Step2 – Click on view button.

The list of the particular program will show in the below grid as shown in below figure:-



6.2 CO - PO Mapping Report

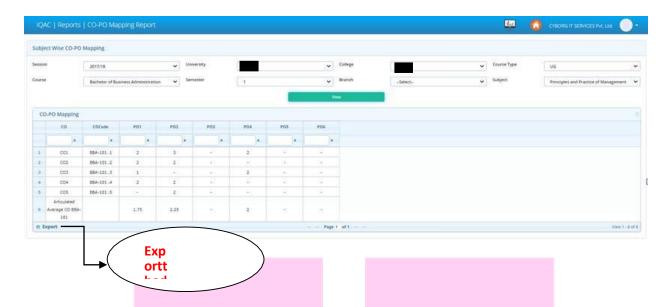
This form is used to view and export the CO-PO Mapping.

Step1 – Select the session, university, college, course type, course, semester.

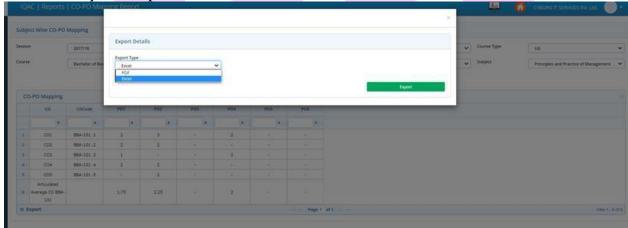
Step2 – Select the Subject.



Step3 – Click on **view** button to view CO-PO Mapping.



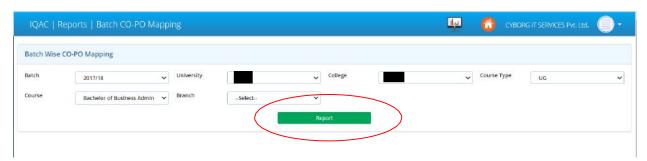
The user may also export the data in PD For excel form.



6.3 Batch CO-PO Mapping

This interface is used to generate Batch wise CO-PO Mapping.

Step1 – Select Batch, University, College, Course Type, Course.



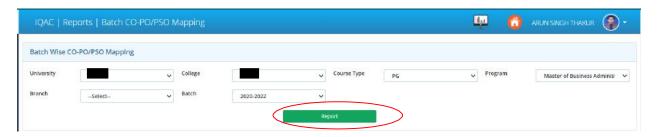
Step2 – Click on **Report** button to generate the Report of **Batch wise CO** – **PO Mapping**.

	- Maste	er of B	usines	s Adm	inistra	CIOII		
fear/Sem								
ourse :- I				unnt Dr	inciple	er and	Denuni	ration
00						P06		
CO1	3	3	3	3	3	3	3	1
CO2	2	3	1	2	1	2	2	1
CO3	2	2	3	3	2	1	1	2
CO4	-	2	1	3	2	-	1	1
CO5	-	2	2	2	3	2	2	1
Articulated Average CO MBA- 101	2.33	2.4	2	2.6	2.2	2	1.8	1.2
Course :- I	MBA-1	05 Les	gal Asp	ects o	f Busir	iess		
co	P01	PO2	PO3	P04	PO5	P06	P07	POS
CO1	3		1	-		-	2	-
CO2	2	1	-	-	-	-	3	-
CO3	-	-	3	-	-	2	1	-
C04	-	2	-	1	3	-	-	1
C05	3					-	2	
Articulated Average CO MBA- 105		1.5	1.67	1	3	2	2	1

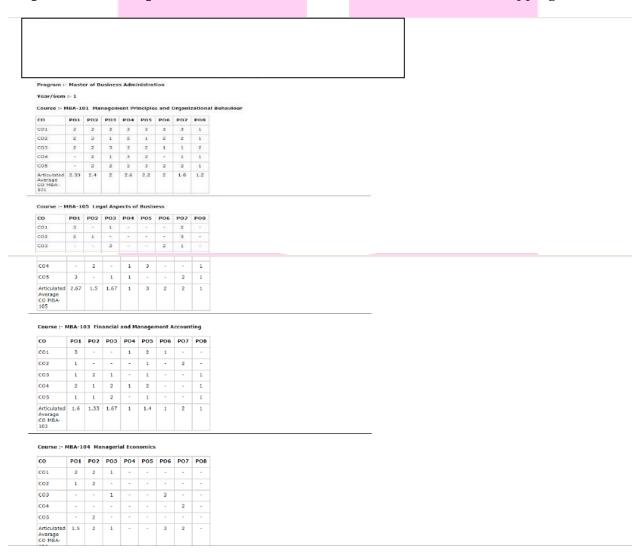
6.4 Batch wise CO - PO/PSO Mapping

This interface is used to view batch wise Course CO-PO/PSO Mapping.

Step1 – Select Batch, University, College, Course Type, Course.



Step2 – Click on Report button to view the Batch wise CO – PO/PSO Mapping.



6.5 Batch PO/PSO-PEO Mapping

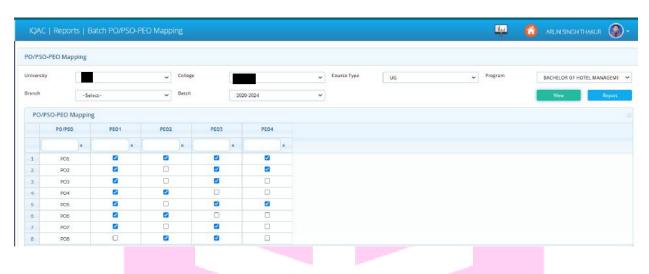
This interface is used to generate batch wise PO/PSO-PEO MAPPING Report.

Step1 – Select the University, College, Course type.

Step2 – Select the Program and batch to generate the report.

Step3 – Click on **View** Button to view the data.

If the user wants to generate the report then he/she should have to click on **report** button.



6.6 OBE Marks Work Status

This interface is used to view the work status of outcome – based Education.

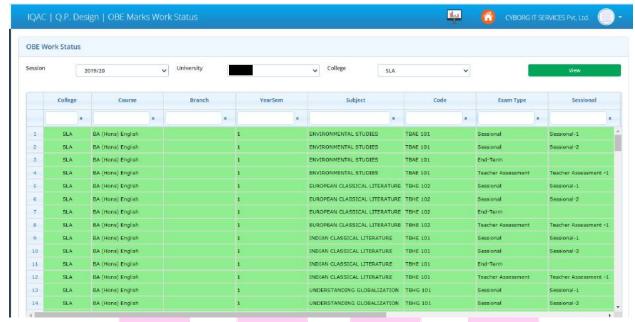
Step1 – Select Session, University, College.

Step2 – Click on View button to view the list.



OBE Work Status list will appear in the below grid.

Green color indicates that the work is totally complete

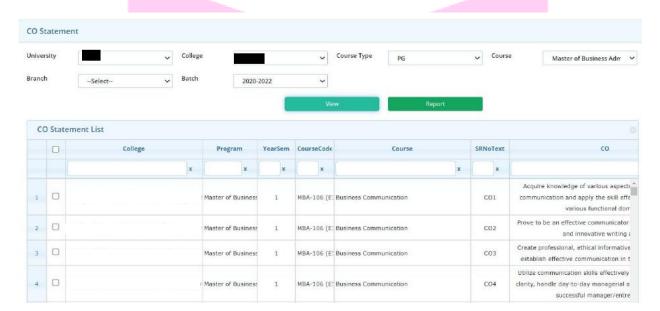


6.7 CO Statement

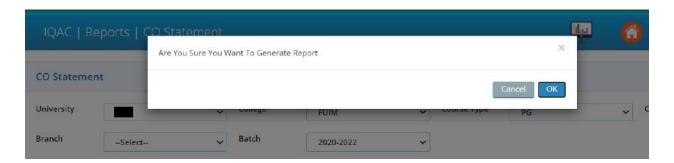
This interface is used to view and generate CO Statement.

Step1 - Select the university, College, Course Type, Course, and Branch (if any).

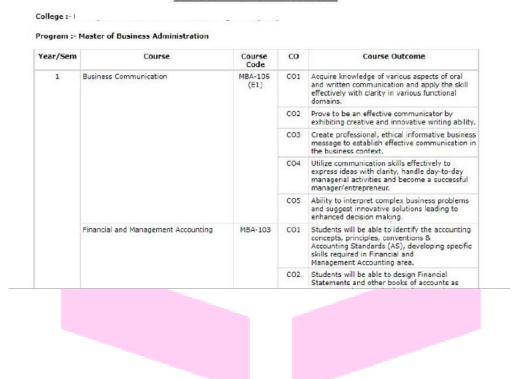
Step2 - Select the Batch and click on view button to view the data.



If the user wants to view the report then he/she should have to click on **Report** button to **generate** the report.



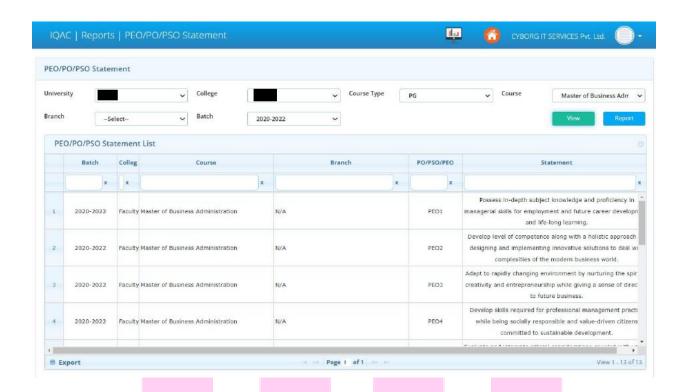
Course Outcome of Batch: 2020-2022



6.8 PEO/PO/PSO Statement

This interface is used to generate the PEO/PO/PSO Statement list.

- **Step1** Select the university, College, Course Type, Course and branch (if any).
- **Step2** Select the batch from the dropdown.
- **Step3** Click on View button to **view** the data.

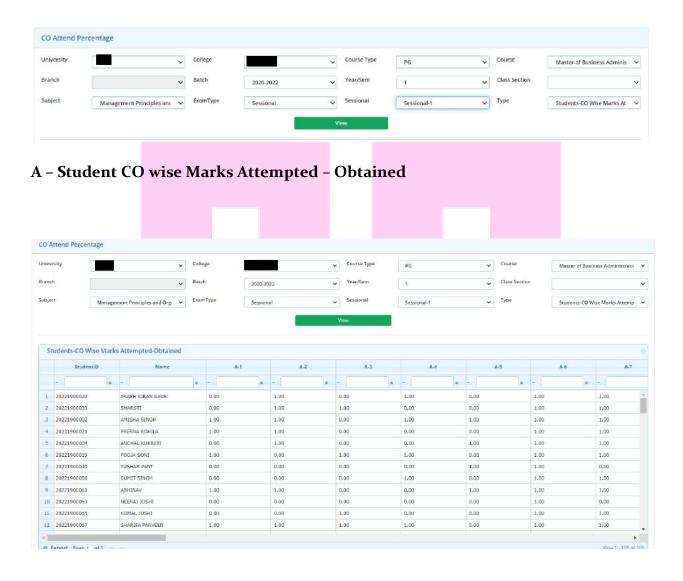


If the user wants to view the report then he/she should have to click on **Report** button to **generate** the report.

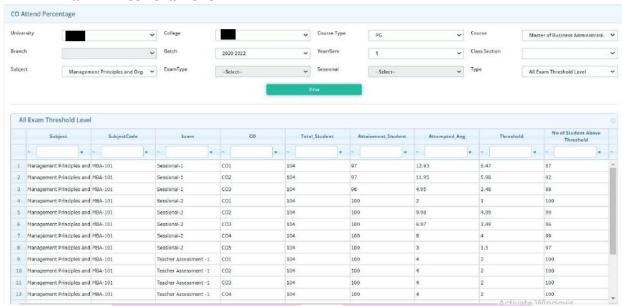


6.9 CO Final Attainment View

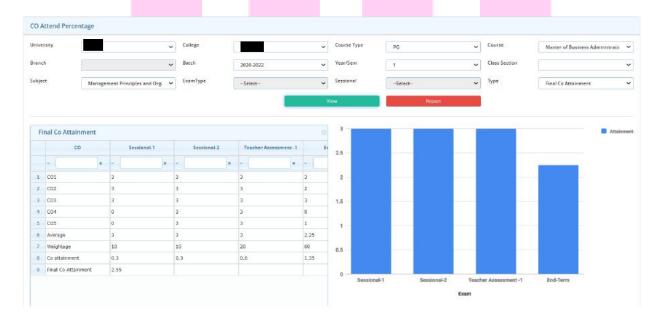
This interface is used to view and generate Final CO Attainment report like Student CO wise Marks Attempted-Obtained, All Exam Threshold data, Final CO Attainment, Direct Attainment, Direct + Indirect Attainment.



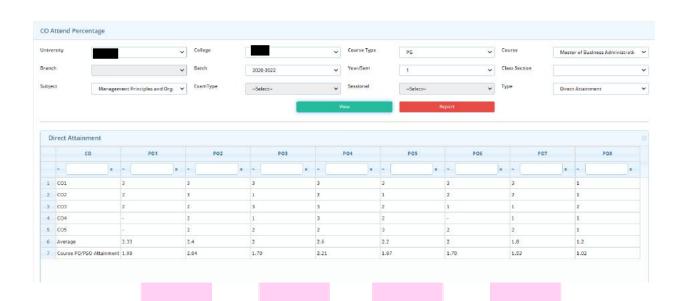
B - All Exam Threshold Level



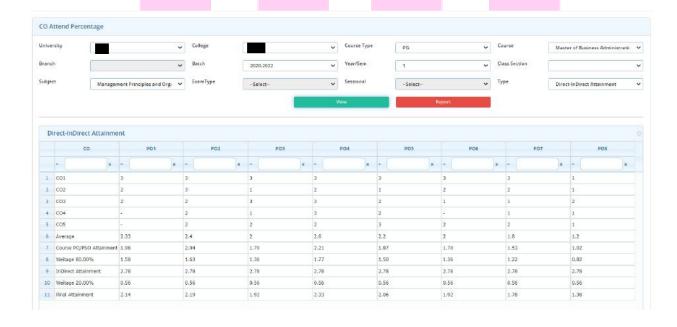
C - Final CO Attainment



D - Direct Attainment



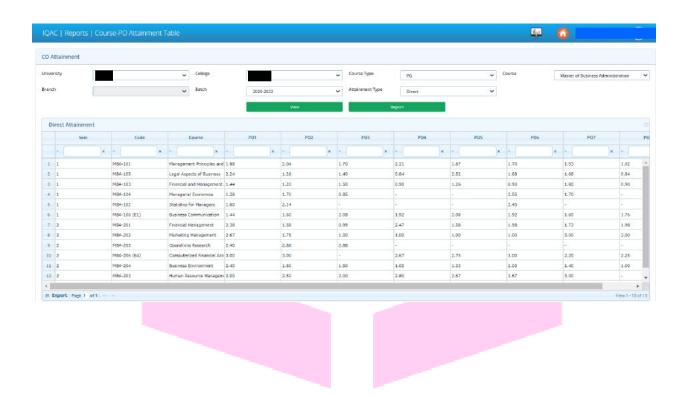
E – Direct – Indirect Attainment

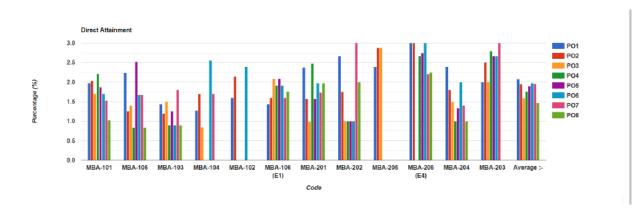


6.10 Course PO Attainment Table

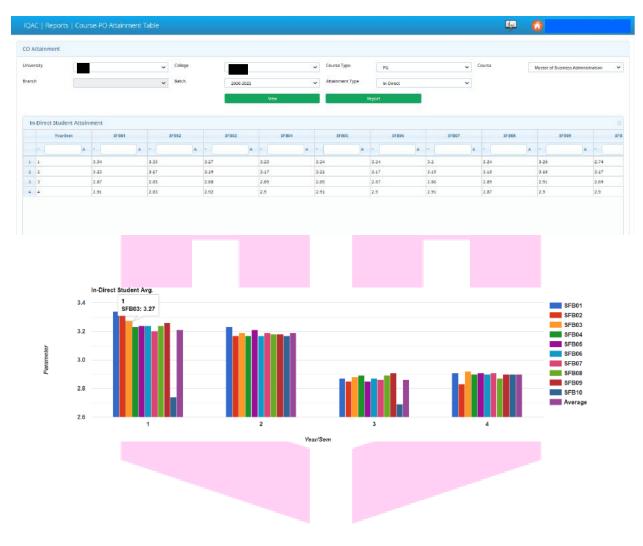
In this average is calculated on the basis of direct or direct+ indirect concerned with their PO and PSO of the subject in batch.

Attainment Type - Direct

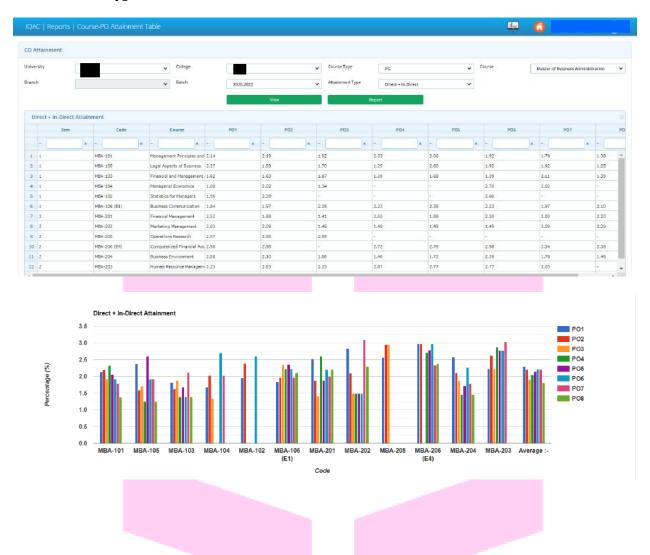




Attainment type – Indirect



Attainment Type = Direct + Indirect



6.11 CO and Bloom Weightage in Q.P.

This interface is used to view and generate the report of CO and Blooms Weightage in Q.P.

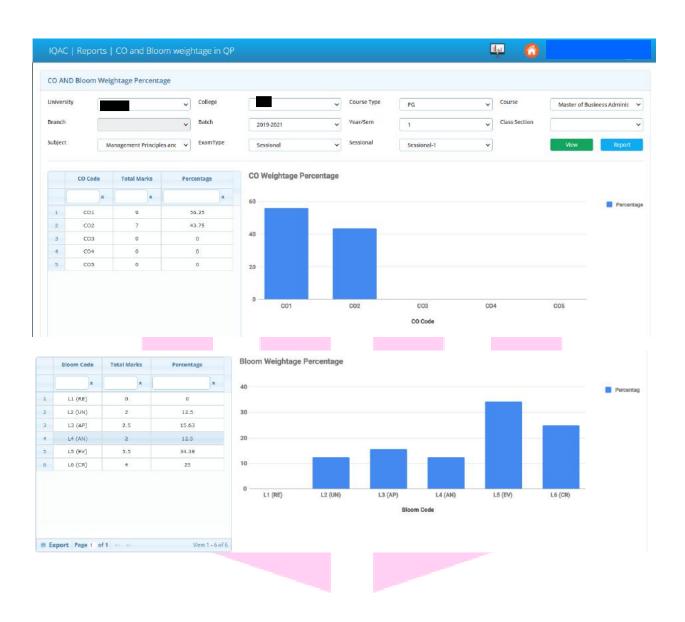
Step1 – Select the university, College, Course type, Course and branch (if any).

 $\bf Step2$ – Select the batch and year/semester.

Step3 – Select the subject and exam type to view the CO and Bloom Weightage Percentage.

Step4 – Click on **view** button to view the data.

If the user wants to generate the report then he/she should have to click on Report button.



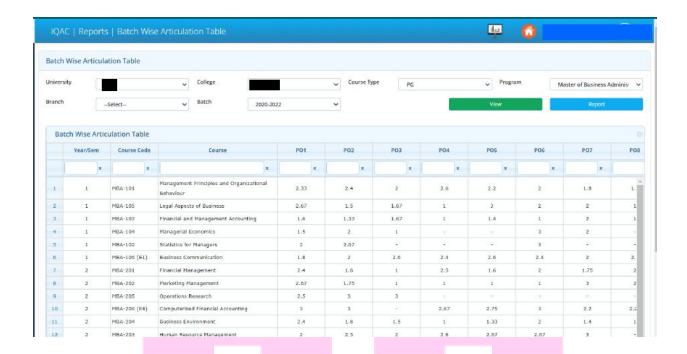
6.12 Batch Wise Articulation Table

This interface is used to generate batch wise PO average of the particular subject.

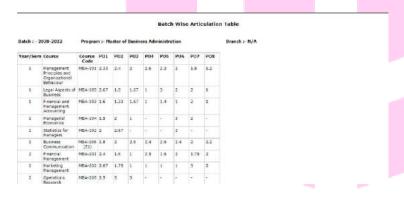
Step1 – Select the university, College, Course type, Program and branch (if any).

Step2 – Select the batch.

Step3 – Click on **view** button to view the data of batch wise articulation table.



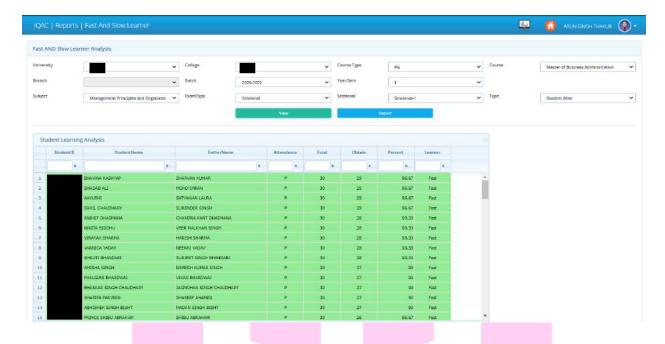
If the user wants to generate the report of batch wise articulation table then he/she should have to click on the **report** button.



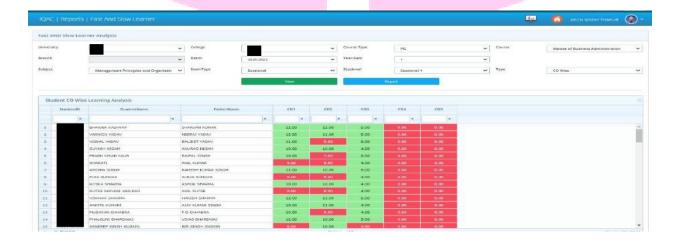
6.13 Fast and Slow Learner

This interface is used to get slow and fast learner analysis according to their performance in IQAC. The user may also generate the report of the analysis either student wise or CO wise as shown in below figure: -

Student Wise-



Student CO wise Learning Analysis-

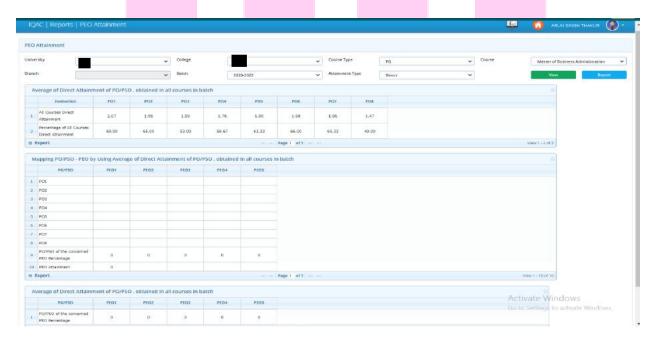




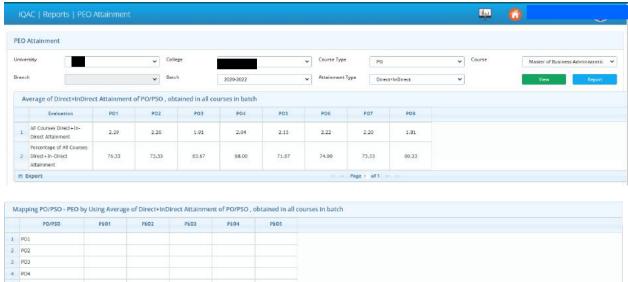
6.14 PEO Attainment

In this interface average of **Direct Attainment** of PO/PSO and average of **direct** + **indirect** attainment of PO/PSO are obtained in all courses of a selected batch.

Attainment type = Direct



Attainment type = Direct + Indirect



2	PO2							
3.	P03							
4	P04							
5	P05							
6	PO6							
7	PO7							
8	PO8							
- P	PO/PSO of the concerned PEO Percentage	D	0	0	0	a		
10	PEO Attainment	0						
m E	xport						Page I of 1	
00.01					Control (1987)			
A	verage of Direct+InDirec	t Attainment	of PO/PSO, obt	tained in all cou	urses in batch			
	PO/PSO	PEO1	PEO2	PEO3	PEQ4	PEO5		
	PO/PSO of the concerned PEO Percentage	D	0	0	0	0		
8.8	xport						Page 1 of 1	

7 Feedback Report

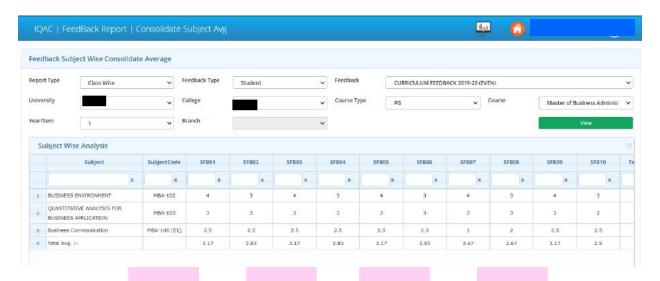
The **report** focuses on the **feedback** of students on Syllabus and Teachers. An effort was made to Receive **feedback** from all students of the **college**.

7.1 Consolidate Subject Average

This interface is used to generate subject wise average feedback report either consolidate or class wise.

- **Step1** Select the report type as Consolidate or class wise.
- **Step2** Select the feedback type as student or faculty.
- Step3 Select the curriculum feedback session from the feedback dropdown.
- **Step4** Select the university, college, course type, course, and year/semester and branch (if any).

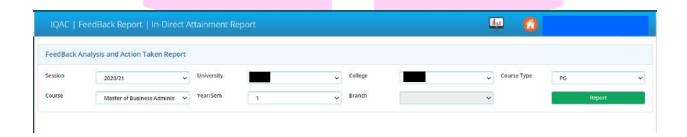
Step5 – Click on **view** button to view the **subject wise analysis data** as per the above selection.



7.2 Indirect Attainment Report

This interface in feedback report is used to generate the Feedback Analysis and Action Taken report of the courses also known as Indirect Attainment Report.

Step1-Select the session, University, College, Course Type, Course, year/semester and branch (if any).



Step2 - Click on report Button to view the report as shown in figure below:-

Feedback Analysis Report

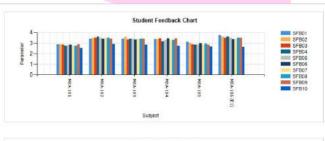
College :-		Session :-	2020-21
Course :-	Master of Business Administration	Year/Sem :-	1

Student's Feedback on a Course in the Semester of the Program

Code	Reference Parameter	Refer To
SFB01	The sequence of the content is well organized.	N/A
SFB02	Uniformity of syllabus in terms of curriculum load.	N/A
SFB03	Course curriculum is career oriented.	N/A
SFB04	Learning values are inclined for development of skills, concepts, knowledge and analytical abilities.	N/A
SFB05	The curriculum justifies the assigned lectures,	N/A
SFB06	The course curriculum covers the latest developments in relevant areas.	N/A
SFB07	Course curriculum contains scope of relevant activities.	N/A
SFB08	The course content is updated rationally.	N/A
SFB09	The course curriculum has good balance between theory and practical applications.	N/A
SFB10	The Course content encourages self and extra curriculum learning.	N/A

Teacher's Feedback on the Course in a Semester

Code	Reference Parameter	Refer To
FFB01	The course content is in conformity with the course	N/A

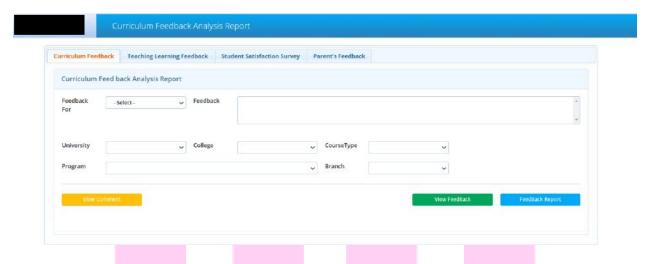




7.3 Curriculum Feedback Report

After Completion of Academic Session, a separate feedback is collected from all stakeholder i.e., Student, Alumni, Faculty, Parents etc. regarding curriculum. This interface is used to generate Curriculum Feedback Analysis Report.

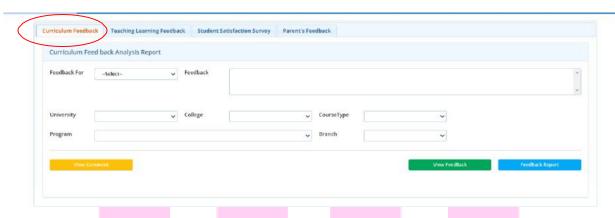
Questionnaires used to collect feedback responses consist of both type of questions i.e. close ended and open ended. To assess the perception of stake holders towards different aspects of curriculum such as: employability, usefulness for higher education, etc.



Curriculum Feedback Analysis Report includes:

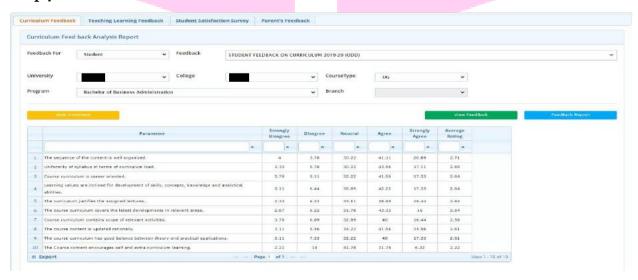
- Curriculum Feedback
- Teaching Learning Feedback
- Student Satisfactory Survey
- Parent's Feedback

7.3a Curriculum Feedback



This interface is used to view/Generate the Report of the curriculum feedback Analysis Report of the student, faculty & Alumni.

- **Step1** Select the feedback type as student, Faculty or Alumni.
- **Step2** Select the feedback.
- Step3 Select the university, College, Course type, Course, Branch (if any).
- **Step4** Click on **view feedback** button.



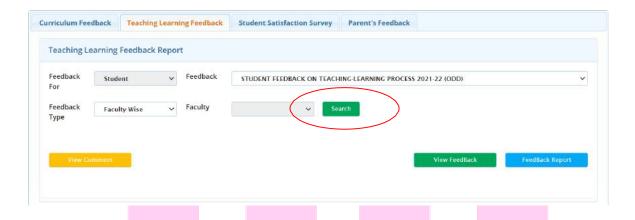
Step5 – Click on **View Comment** button to view the comments of the stake holder (Student/faculty/Alumni) as per the analysis.

	FeedBack	Course		Year/Sem	Branc	h	Subject	Subject	Code	Comr
	×		×	×		×	×		×	
1	STUDENT FEEDBACK ON CURRICULUM 2019-20 (ODD)	Bachelor of Business Administration		1	N/A		Business Communication	86A-105		
2	STUDENT FEEDBACK ON CURRECULUM 2019-20 (ODD)	Bachelor of Business Administration		1	N/A		Business Communication	88A-195		
3	STUDENT FEEDBACK ON CURRECULUM 2019-20 (ODD)	Bachelor of Business Administration		i	N/A		Business Communication	B8A-105		
4	STUDENT FEEDBACK ON CURRECULUM 2019-20 (COD)	Bachelor of Business Administration		1	N/A		Business Communication	88A-105		***
5	STUDENT FEEDBACK ON CURRICULUM 2019-20 (COD)	Bachelor of Business Administration		1	N/A		Business Communication	88A-105		Agree
6	STUDENT FEEDBACK ON CURRICULUM 2019-20 (ODD)	Bachelor of Business Administration		1	N/A		Business Communication	88A-105		BAFWUSODBOUSP
7	STUDENT PEEDBACK ON CURRECULUM 2019-20 (ODD)	Bachelor of Business Administration		ı	N/A		Business Communication	88A-105		Good
	STUDENT FEEDBACK ON	Bachelor of Business								
										Y .

The user may also click on **Report** button to generate the **Curriculum Feedback report**.

7.3b Teaching Learning Feedback

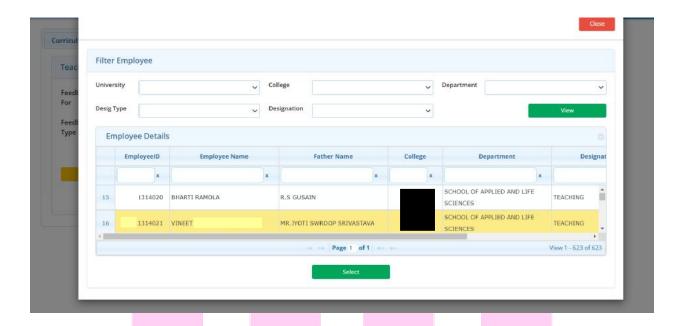
This interface is used to view and generate the report of Student feedback on teaching learning process. Feedback type can be of course wise, individual faculty wise, Program wise, university wise and college wise.



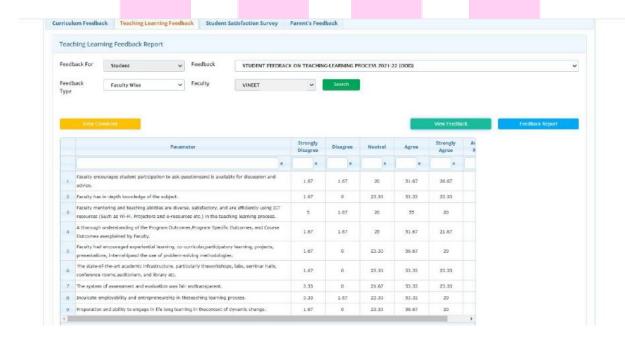
Type1 – If the user selects feedback type as **faculty wise** then he/she should have to search the faculty by his/her name whose feedback has to be viewed.



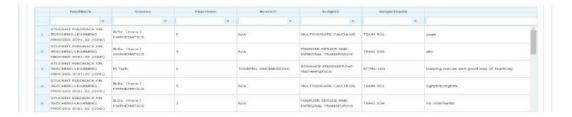
Step – Click on **search** button.



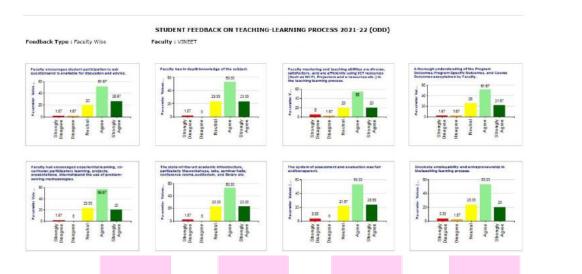
Click on **View feedback button** to view parameter wise feedback.



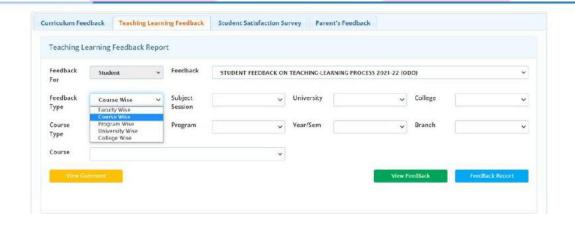
Click on **view comment** button to view the comments.



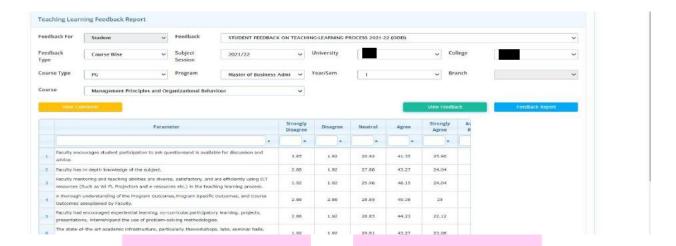
Click on **Feedback Report** to generate faculty wise feedback report on teaching learning process.



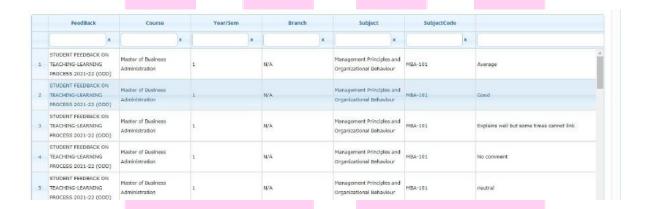
Type2 – If the user selects Feedback Type as CourseWise



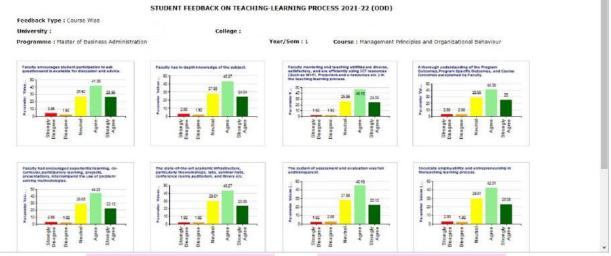
Then the user has to complete the selection (like subject session, University, College, course type, program name, year/semester, branch (if any) and course name) and click on view Feedback button to view course wise feedback as shown in figure below:-



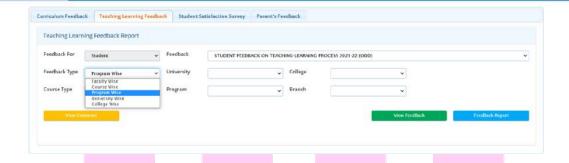
Click on **view comment** button to view the comments.



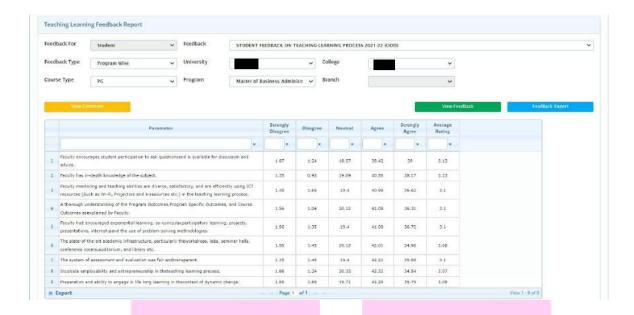
Click on **Feedback Report** to generate Course wise feedback report on teaching learning process.



Type3 – If the user selects Feedback Type as Program Wise



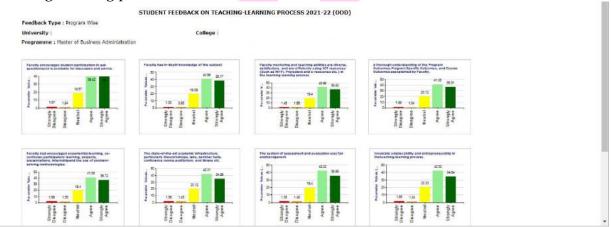
Then the user has to complete the selection (like University, College, course type, program name, branch) and click on view Feedback button to view Program wise feedback as shown in figure below:-



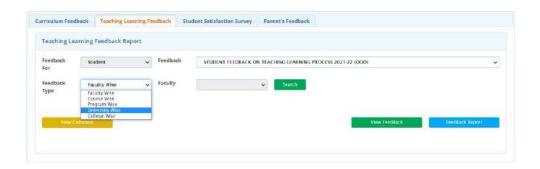
Click on **view comment** button to view the comments.



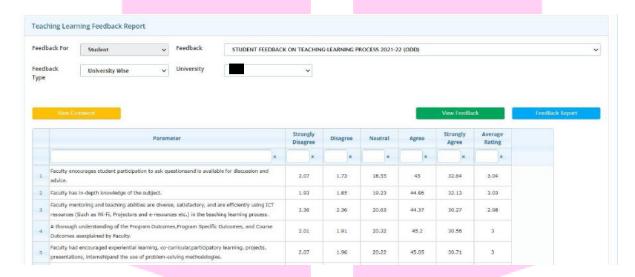
Click on **Feedback Report** to generate Program wise feedback report on teaching learning process.



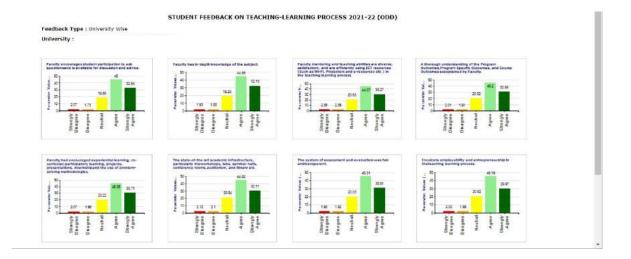
Type4 – If the user selects Feedback Type as University Wise



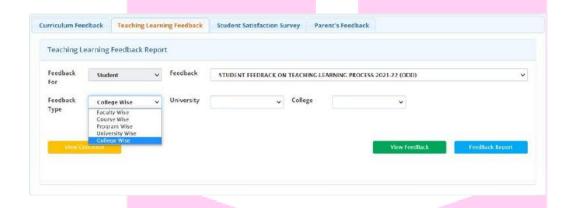
Select the university and click on view feedback button.



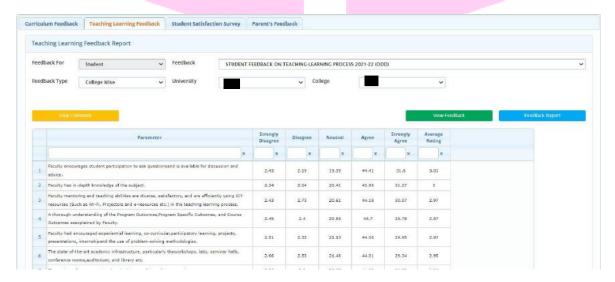
Click on **Feedback Report** to generate University wise feedback report on teaching learning process.



Type5 – If the user selects Feedback Type as College Wise



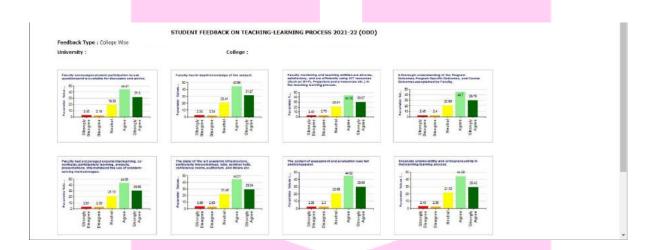
Select university and college and click on view feedback button to view the data.



Click on **view comment** button to view the comments.

	FeedBack	Course	Year/Sem	Branch	Subject	SubjectCode	Commo
	×		*	×	×	×	
1	STUDENT PEEDBACK ON TEACHING-LEARNING PROCESS 2021-22 (ODD)	Bachelor of Science (Information Technology)	3	N/A	Database Management System	8SIT-C301	ĸ
2	STUDENT FEEDBACK ON TEACHING-LEARNING PROCESS 2021-22 (ODD)	Bachelor of Science (Enformation Technology)	3	R/A	Web Technologies and PHP Lab	BSJT-C352	ck
3	STUDENT FEEDBACK ON TEACHING-LEARNING PROCESS 2021-22 (ODD)	Master of Business Administration	3	N/A	Counseling Skills and Performance Management	M5A-303-H5	Roldon
4	STUDENT PEEDBACK ON TEACHING-LEARNING PROCESS 2021-22 (ODD)	Bachelor of Business Administration	3	N/A	Information Technology for Business	86A-305 (SE-1)	Fair
	STUDENT FEEDBACK ON	2000					

Click on **Feedback Report** to generate College wise feedback report on teaching learning process.

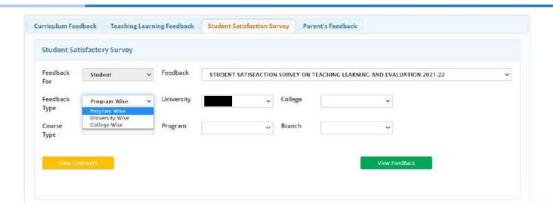


7.3c Student Satisfactory Survey

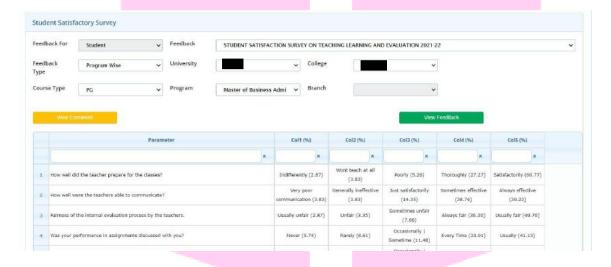
The student satisfaction survey **collects in-depth data of a student's satisfaction with an educational institution**. This survey template consist multiple question types that collect feedback about multiple aspects of the school that can help the management to streamline services.

Feedback Type can be Course wise, program Wise or University wise.

Type1 – If the user selects Feedback Type as **Program Wise**



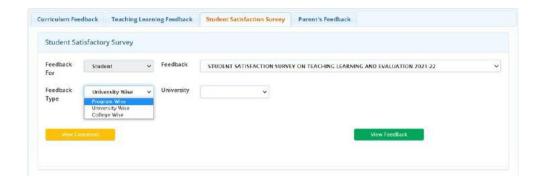
Then the user has to complete the selection (like University, College, course type, program name, branch) and click on **view Feedback button** to view Program wise feedback of Student **satisfaction Survey on teaching learning and evaluation** as shown in figure below:-



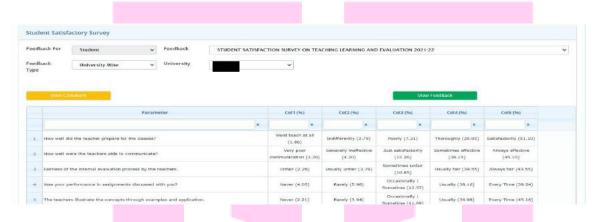
Click on **view comment** button to view the comments.



Type2 - If the user selects Feedback Type as University Wise



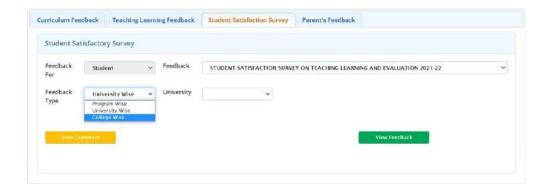
Select the university and click on view feedback button.



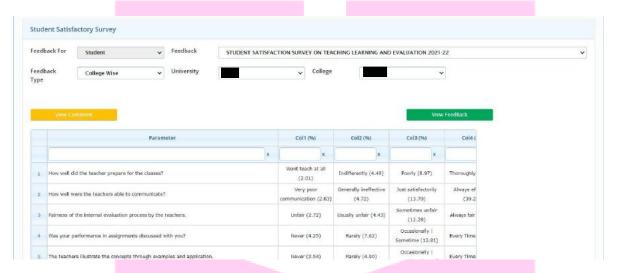
Click on **view comment** button to view the comments.



Type3 – If the user selects Feedback Type as College Wise



Select university and college and click on **view feedback** button to view the data.



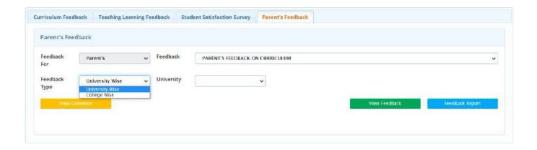
Click on **view comment** button to view the comments.



7.3d Parent's Feedback

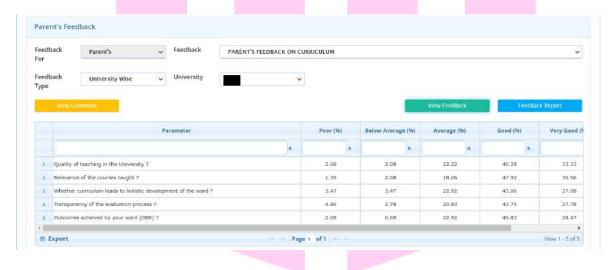
Parents are partners in the education of their children. Parent's Feedback helps in achieving learning goals. Through this interface parents' feedback can be viewed as

per the parameters set on parent feedback on curriculum or infrastructure & other facilities.

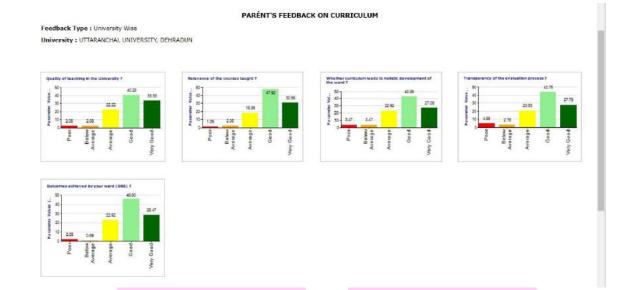


Step1 – Select Feedback type as University or college wise.

Step2 – Select the combination as per feedback type and click on view button to view the feedback.



Click on **Feedback Report** to generate Parent's feedback either university wise or college wise.



7.4 Feedback Answer Report

This interface is used to get feedback given answers by faculty/student/alumni.

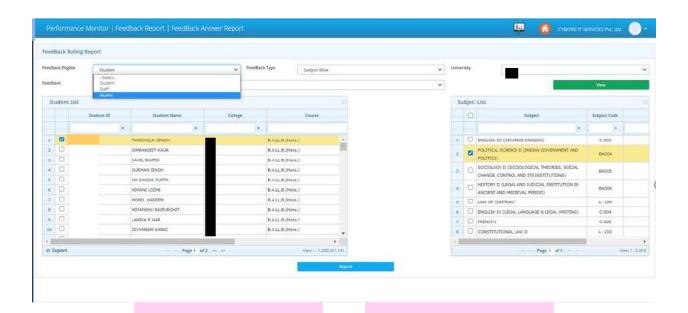
Step1 – Select the feedback eligible type. It can be student/staff/Alumni.

Step2 – Select Feedback type, University and feedback.

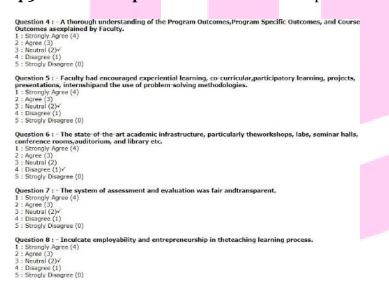
Step3 – Click on view button.

As you click on view button student list and subject list will appear.

 $\bf Step_4$ – Select the students from student list and subject from the subject list.



Step5 – Click on **Report** button to view the report.



7.5 Course-Curriculum Feedback

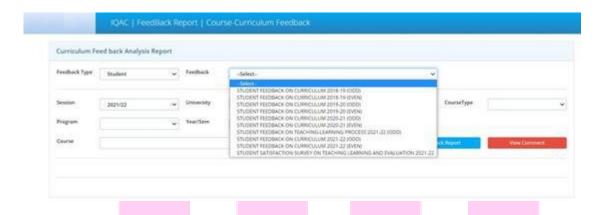
This interface is used to generate Course - Curriculum Feedback Analysis Report.

The **Curriculum** inculcates soft skills, life skills competencies, Satisfaction Survey, Evaluation, **course** out comes and program outcomes. **Defined** and clear to teachers and students.

Feedback Type - Student Feedback

Step1 – Select Feedback type as Student

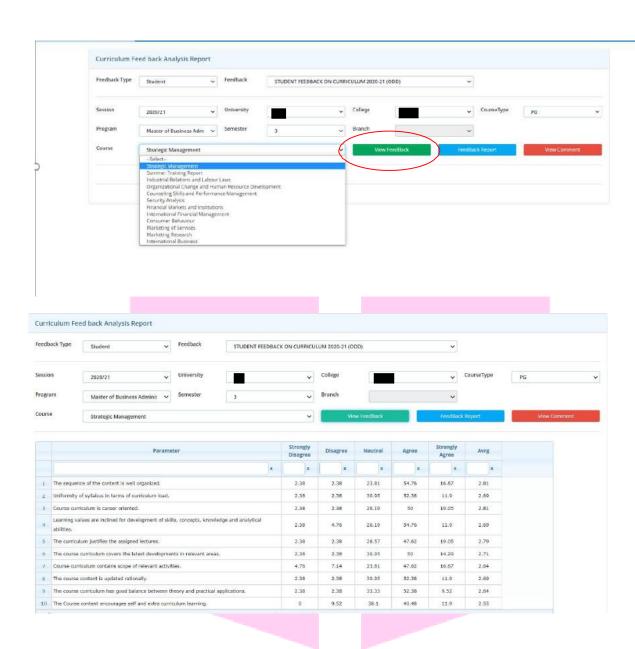
Step2 – Select feedback based on student curriculum Session wise.



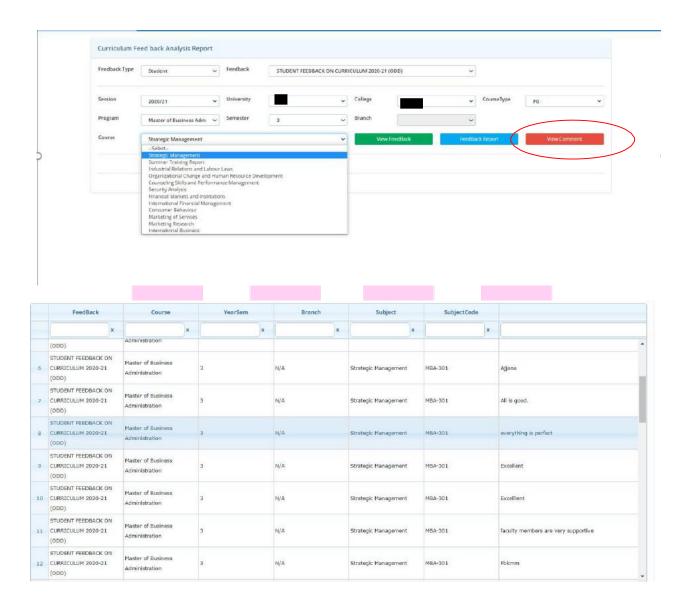
Step3 – Select Session, University, College, Course type, program and semester, branch (if any)

Step₄ – Select Course name for which the user wants to view and generate the feedback report.

Step5 – Click on **View Feedback** to view the feedback.



Step6 – Click on **View comment** to view the comments given by the students on the feedback.



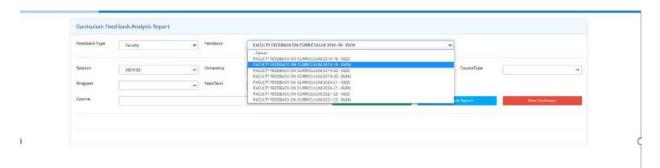
Step7 – Click on **Feedback report** to generate the report.





Feedback Type – Faculty Feedback

From this type **faculty wise** feedback is visible of the course curriculum.



Step1 - Select Feedback type as Faculty

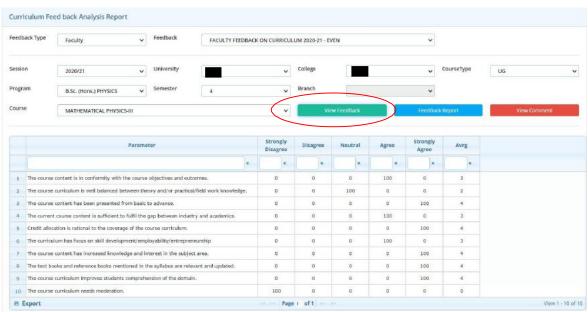
Step2 – Select feedback based on Faculty feedback on curriculum – Session wise.

Step3 - Select Session, University,

Step3 – Select Session, University, and College, Course type, program and semester, branch (if any)

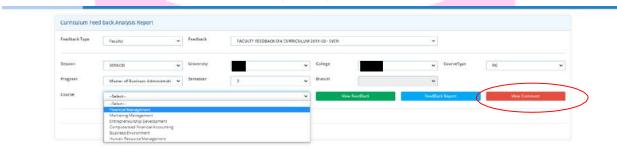
Step4 – Select Course name for which the user wants to view and generate the feedback report.





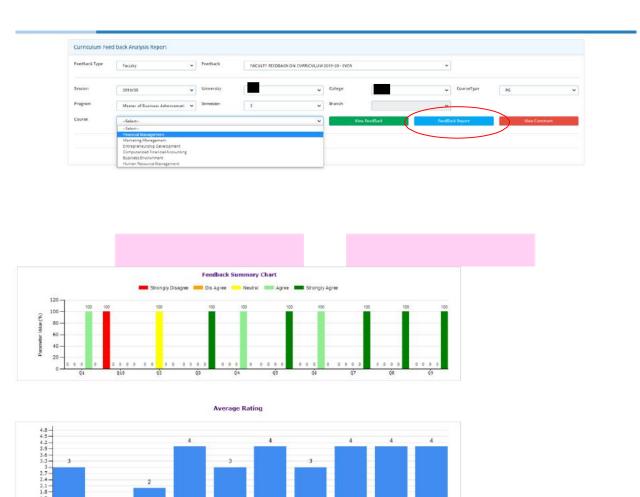
Step5 – Click on **View Feedback** to view the feedback.

Step6 – Click on **View Comment** to view the Comment.



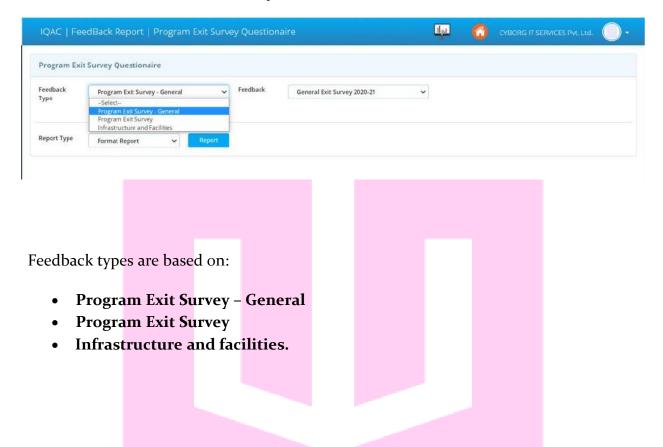


Step7 – Click on **Feedback Report** to view the Report.

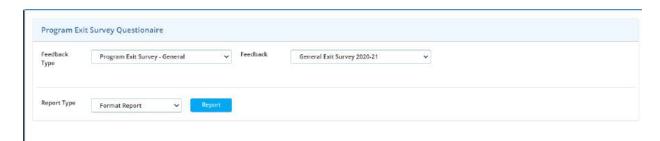


7.6 Program Exit Survey Questionnaire

In this interface pre-set questionnaire is used in the exit process of an ongoing student either in the form of survey or online feedback.



- Step1 If the user selects feedback type as Program Exit Survey–General
- Step2 Select Feedback as General Exit Survey 2020-21 and then select the report type.
- **Step3** Select report type as **Format Report** and click on report button to generate the report.



The report is shown below:-

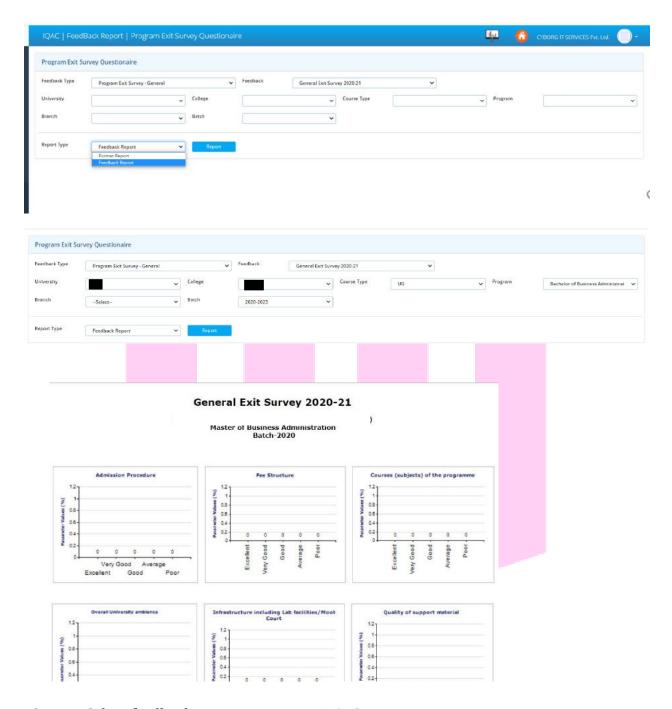
A – Format Report



B – If the report type is selected as **Feedback report** then

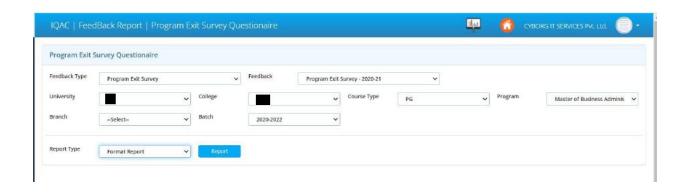
Step1 – Select the university, College, Course Type, Program, Brach, Batch.

Step2 – Click on **Report** Button to generate the report as per the selected combination.

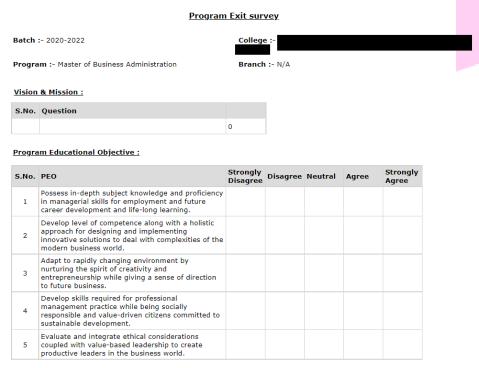


Step1 – Select feedback type as **Program Exit Survey**.

Step2 – Select the university, College, Course Type, Program, Branch, Batch.

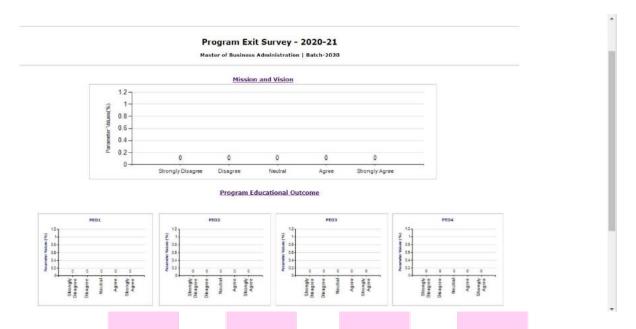


Step3 – Select Format Report and click on **report** button to generate the report.



If the report type is selected as Feedback Report of program exit survey then select the outcome value

Also like (PO, PEO, PSO) and click on report button.



Step1 – Select feedback type as **Infrastructure and facilities**.

Step2 – Select Report type as **Format report**.



Step3 – Click on **Report** button to generate the report.

Infrastructure and Facilities Survey 2020-21

In this section you are asked to rate questions on a 0 to 4 numerical scale. Please take a $\,$ few minutes to acquaint yourself with this

S.No.	Question	Excellent	Very Good	Good	Average	Poor
1	Infrastructure including Lab facilities/Moot Court					
2	Quality of support material					
3	Hostel facilities					
4	Library facilities					
5	Hospital/Healthcare/Ambulance facilities					
6	Sports facilities					
7	Alumni Network					
8	Placement support					
9	Online data base					
10	Support of Faculty member					
11	Support of Administrative Staff					
12	Overall rating of the University					

Step4 – Select Report type as **Feedback report** and select the college name for which the report has to be generated.

Step5 – Click on **Report** Button to generate the report.

