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Abbreviations:

OBE	Outcome Based Education	**BTL**	Bloom's Taxonomy Level
LOT	Lower Order of Thinking	**HOT**	Higher Order of Thinking
PEO	Program Educational Objectives	**PO**	Program Outcome
CO	Course Outcome	**PSO**	Program Specific Outcome
ESE	End Semester Examination	**POE**	Practical Oral Exam
CE	Course Exit Survey	**HoD**	Head of Department
PC	Program Coordinator	**DAB**	Department Advisory Board
PAC	Program Assessment Committee	**AY**	Academic Year

1. Vision, Mission and Quality Policy of an Institution

VISION: To mould the character, shape the career, perfect the behaviour and excel in educating the younger generations of today for tomorrow"

MISSION: To offer Innovative and socially relevant job-oriented courses with a view to enhance the employment prospects of the learners. In carrying out educational mission, we endeavour to upgrade the knowledge, skill and behaviour of the students, striving hard towards excellence in all spheres of our activities.

QUALITY POLICY: We at Nehru Arts and Science College aim at transforming our students as Knowledgeable Individuals, Skilled Professions and Well-Behaved Human beings to live as Worthy Citizens to work for the well-being of the society and strive towards building a better India with true spirit of culture, patriotism and nationality to create international brotherhood and global harmony through value based and Man-Making Education.

2. OBE Framework of the Institute

Preamble:

Nehru Arts and Science College, an Autonomous Institution, endeavours to proactively participate in the mission of Indian Higher Education System. The objective is to elevate the competency levels of the Graduates to meet the global demands. The meticulous and stringent educational methodology of Outcome Based Education (OBE) is followed to enrich the student learning through performance outcomes. This curriculum model aims to maximize student learning outcomes by developing their skills. The OBE model supports the graduates to attain intellectual knowledge, skills and attitudes in order to ensure the holistic learning environment with clarity, flexibility, comparison and efficient involvement.

Scope:

The OBE framework provides the guidelines to enable teaching and learning process of the institution to attain international recognition and global employment opportunities. It leads to enable the graduates to excel in their profession and career accomplishments.

- The guidelines of this OBE policy are applicable to all the students and faculty members of Nehru Arts and Science College.
- The guidelines laid herein are applicable to all the academic programmes, courses, curricular activities undertaken by the members.

Objectives:

The Objectives of the OBE policy are stated as follows,

- To design Learner Centric and Outcome-Based Curriculum.
- To define Programme Educational Objectives (PEO's) and Graduate Attributes in alignment with the vision and mission of the Institution.
- To define Programme Outcomes (PO's) to achieve the graduate attributes.
- To define Programme Specific Objectives (PSO's) and Course Outcomes (CO's) for all the programmes based on the benchmarked courses.
- To ensure the development of learner centric course content.
- To empower the facilitators to be effective in OBE Implementation.
- To state the outcome-based assessment rubrics to measure the attainment of outcomes at course and programme levels.

OBE Committee:

The OBE process in the institution shall be governed by the OBE Committee. The compositions of the committee are as follows,

Principal	: Chairman
Deans	: Ex-Officio Members
Controller of Examinations	: Ex-Officio Examination Office Member
IQAC Representative	: Ex -Officio IQAC member
Coordinator	: Faculty Nominee
Members	: Faculty Nominee

Roles and Responsibilities:

- The committee designs the policies, structure of OBE Curriculum and Evaluation of outcomes.
- The committee shall provide the training and guidelines to implement attain of OBE.
- The committee should have continues monitoring strategies for OBE and conduct annual review to ensure the effective implementation.
- The committee shall define the Programme Educational Objectives and Graduate Attributes.
- The committee will guide the departments to define Programme Outcomes, Programme Specific Outcomes and Course Outcomes.
- The committee shall review the outcome attainments periodically.
- The committee shall ensure the quality assurance of the curriculum, pedagogical teaching methods of the institutions to attain the outcomes.

Outcome Based Education (OBE) Framework

Definitions:

Programme Educational Objective (PEO):

The Programme Educational Objectives should be determined based on the mission and vision statement of the Institution. There can be 3-5 Programme Educational Objectives for a Programme. The statements are framed, that describes the student's career and professional accomplishments within 5 years after his/her graduation. These are the statements that describe what the students are expected to know or be able to do by the time they complete an academic degree/qualification. The programme educational objectives are different from the students' learning outcomes in the following perspectives, Degree of

specificity, Role of Constituents, Purpose of Assessment and Cycles of data collection. The Programme Educational Objectives should be mapped with the Mission and Vision of the Institution.

Program Learning Outcome:

The programme learning outcomes should be determined based on the graduate attributes or the skills. These Programme Learning Outcomes should be mapped against the Programme Educational Objectives and the Blooms Taxonomy of verbs. The abilities (Cognitive, Psychomotor and Affective) that a student should be able to demonstrate at the time of graduation. The Programme learning outcomes are description of student's knowledge, competencies, and value a student display at the time of completion of graduation.

Graduate Attributes

Graduates Attributes (GAs) are the components indicative of the graduate's potential to acquire competence to practice at the appropriate level. GAs forms a set of individually assessable outcomes of the programme.

S. NO.	GRADUATE ATTRIBUTES
1	Subject Knowledge
2	Problem Analysis
3	Design and Development of the Solution
4	Usage of Technology
5	Application of Knowledge in Society
6	Environment and Sustainability
7	Ethics and Values
8	Individual and Team Work
9	Effective Communication
10	Life Long Learning Ability
11	Culture, Patriotism and International Outlook
12	Positive Attitude and Open Mindedness

Programme Specific Outcome:

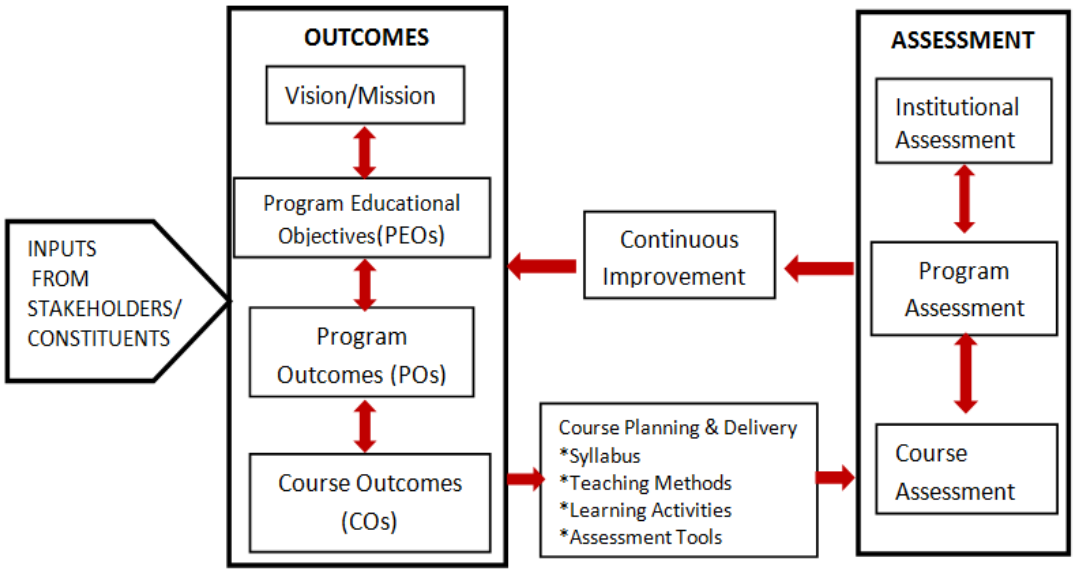
The programme specific outcomes are the statements about what the students should be able to do at the time of graduation. The PSO's are the programme specific. The PSO's are written by the department which is offering the programme.

Course Outcome:

Depending upon the graduate attributes and the mapping of Programme Learning Outcomes, the Course Learning Outcomes will be framed. The Course Learning outcome should follow the Blooms Taxonomy of verbs. Specific statements of what the students are expected to achieve at the end of the course. The course curriculum is measurable,

observable and clearly indicates what a student should know and be able to do as a result of learning. The course learning outcome should satisfy the following conditions:

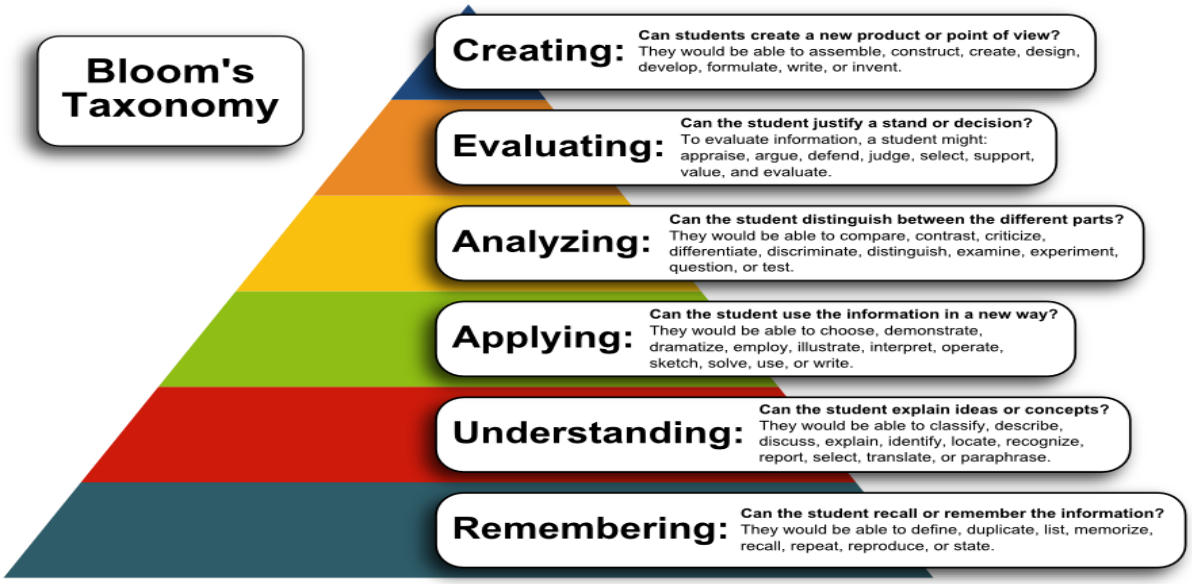
- Each course will address three to four Course Outcome statements
- Should be mapped Learning domains of Blooms or other Taxonomy of verbs
- There should be one to one mapping with the CO and PO statement. i.e. One CO should be mapped with One PO
- Expressed in terms of measurable and achievable
- There should be an action Verb + Standard or Verb + Condition or Verb + Standard + Condition.
- Multiple PO, CO and taxonomy of verbs should not be reflected in a single CO statement.



3. Revised Blooms Taxonomy

The following alphabet is used to denote the Knowledge Level as per the Blooms Verb,

- K1 – Remember
- K2 – Understand
- K3 – Apply
- K4 – Analyse
- K5 – Evaluate
- K6 - Create



4. Action Verbs for Course Outcomes

Sample Action Verbs

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

Illustration (use of action verb with respect to knowledge dimension and order of thinking):

Use of action verbs	Factual	Conceptual	Procedural	Meta cognitive
Remember-K1	**List** properties of soil	**Recognize** characteristic of material	**Explain** working of pump	**Identify** strategies for report writing
Understand-K2	**Summarize** features of a new product.	**Classify** adhesives by toxicity.	**Explain** assembly instructions.	**Predict** the behavior of member
Apply-K3	**Respond** to frequently asked questions.	**Provide** advice to team members	**Carry out** pH tests of water samples.	**Use** modern techniques to get solution
Analyse-K4	**Explain** the selection of tool/activity.	**Differentiate** LOT and HOT	**Integrate** compliance with regulations.	**Assess** The project work
Evaluate-K5	**Select** the appropriate tool	**Determine** relevance of results.	**Judge** efficiency of sampling techniques.	**Reflect** on one's progress.
Create – K6	**Generate** a log of daily activities.	**Assemble** a team of experts.	**Design** efficient project work flow.	**Create** a learning portfolio.

The cognitive process dimensions categories					
Lower Order of Thinking (LOT)			**Higher Order of Thinking (HOT)**		
Remember	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Create**
Recognizing(identifying) Recalling(re trieving)	Interpreting Illustrating Classifying Summarizing Inferring (concluding) Comparing Explaining	Executing Implementing	Differentiating Organizing Attributing	Checking (coordinating, detecting, testing, monitoring) Critiquing (judging)	Planning Generating Producing (constructing)

5. Guidelines for writing Course Outcome Statements

Well-written course outcomes involve the following parts:

Action verb Subject content Level of achievement as Modes of performing task

Illustration: Students are able to

- Design column splices and bases. **Action verb** (underlined)
- Determine the losses in a flow system. **Subject content**
- Use structural analysis software to a competent Level. Level of achievement
- Present seminar on real life problems. Modes of performing **task** with action verb (underlined)

While writing CO's the following questions/points must be addressed properly.

Specific	Is there a description of precise behaviour and the situation it will be performed in? Is it concrete, detailed, focused and defined?
Measurable	Can the performance of the outcome be observed and measured?
Achievable	With a reasonable number of efforts and application can the outcome be achieved? Are you attempting too much?
Relevant	Is the outcome important or worthwhile to the learner or stakeholder? Is it possible to achieve this outcome?
Time-Bound	Is there a time limit, rate, number, percentage or frequency clearly stated? When will this outcome be accomplished?

Note: If Laboratory is given as separate course (with course code) then there should be separate course outcomes for Laboratory.

Number of COs	2 to 4
CO essentials	Action Verb, Subject Content, Level of Achievement, Modes of Performing task (If Applicable)
Based on BTL	Understand, Remember, Apply, Analyse, Evaluate, Create
Number of BTL Considered in one course	Minimum 3
Technical Content/ point of curriculum	All curriculum contents are covered
Curriculum gap	Additional CO for gap identified/filling. Adds more weightage

6. Quality of Course Outcome

Guidelines/Checklist for Cos:

Consider Any Two Minimum Criteria for Co-Po Mapping Justification

A] **Contact Hours: Lecture, Tutorial and Practical**

Level	Contact Hours in Percentage (including Lecture, Tutorial & Practical)
No mapping(-)	<5%
Low(1)	5-15%
Medium(2)	15-25%
High(3)	>25%

Description: Number of Lectures = 3 per week * 12 weeks **=** 36 **Hours**
Tutorial = 1 Hr x 12 Weeks = **12** Hours Practical = 2 Hr x 12 Week = **24** Hours

Total Hrs = 36 + 12 + 24 = **72** Hours

Example: Let, CO1 related points are engaged in 10 lectures + 1 Tutorial and 2 practical Hours Then contact hours = 10+1+2x2 = 15 hours

Therefore, contact hours in percentage = (15/72) x 100 = 20.8 %. Medium mapping (2)

Number of Assessment Tools used:

Level	Assessment tools used to assess the CO
No mapping(-)	0
Low(1)	1 or 2
Medium(2)	3
High(3)	4 or more

Description - CO assessment tools:

Continuous Internal test, End Semester test, Class test, Surprise test, Oral, Internal assessment (Assignment, Lab practical assessment), Course Exit Survey, Oral Exam/Practical oral exam, External feedback, Activities (Survey, Guest lecture, Workshop, Seminar, Case studies, Mini/Minor projects etc.). Every CO must be correlated with each PO and appropriate mapping may be selected.

Key words: Appropriate keyword is sufficient for mapping.

Level	Keywords Used in writing CO's
No mapping(-)	Keywords related with LOT and not related with course or any outcomes
Low(1)	Part of PO is reflected through keywords/action verbs
Medium(2)	Major part of PO is reflected through keywords/action verbs + moderate level performance is expected from student to achieve PO
High(3)	Exact action verb of PO + critical performance expected from student to achieve PO

7. CO-PO Mapping Guidelines / CO Attainment Calculations

The effective implementation of OBE is complete with mapping and attainment level of computation.

- Course Outcomes shall be mapped with Programme Outcomes. One CO may be mapped with more than one PO and vice versa.
- The department shall ensure that all CO's are sufficient to measure the attainment level of PO's.
- The attainment shall be measured at each programme and course level.

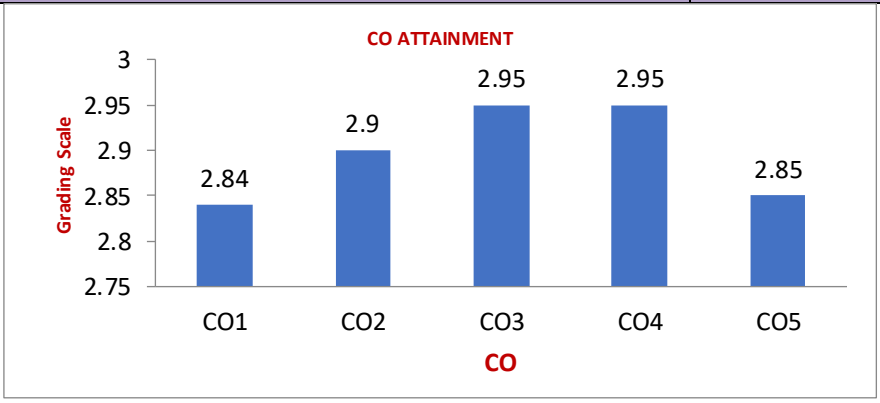
The Following template shall be used to implement the mapping of CO with PO and PSO,

CO PO MAPPING										
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	–	2	–	1	3	2	3	3	3
CO2	1	3	–	1	–	2	3	3	3	3
CO3	–	2	–	3	1	3	3	2	3	3
CO4	–	–	1	–	3	2	2	3	2	3
CO5	–	1	3	2	–	2	2	2	2	2
WT.AVG	2	2	2	2	1.67	2.4	2.4	2.6	2.6	2.8
OVERALL MAPPING OF SUBJECT										2.247

CO	DISTRIBUTION %								
	3(HIGH)			2(MEDIUM)			1(LOW)		
	No. of Students Attained	Total No. of Studs.	%	No. of Studs. Attained	Total No. of Studs.	%	No. of Students Attained	Total No. of Studs.	%
CO1	54	60	90	6	60	10	0	60	0
CO2	54	60	90	6	60	10	0	60	0
CO3	57	60	95	3	60	5	0	60	0
CO4	57	60	95	2	60	3.33	1	60	1.67
CO5	56	60	93.33	2	60	3.33	2	60	3.33

Rubrics		
	3	70 % of Students above 50%
	2	60 % of Students above 50%
	1	50 % of Students above 50%

COURSE CODE	TEST1	TEST2	MODELS	INT	INTERNALS	ESE
CO1	3	0	3	3	3	3
CO2	3	0	2	3	2.67	3
CO3	0	3	3	3	3	3
CO4	0	3	2	3	2.67	3
CO5	0	0	3	3	3	3
INTERNAL/UNIV ATTAINMENTS					2.9	3
			WEIGHTAGE		25%	75%
					0.725	2.25
FINAL CO ATTAINMENT FOR THE SUBJECT					2.975	



PO ATTAINMENT USING CO (DIRECT METHOD)										
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	–	2	–	1	3	2	3	3	3
CO2	1	3	–	1	–	2	3	3	3	3
CO3	–	2	–	3	1	3	3	2	3	3
CO4	–	–	1	–	3	2	2	3	2	3
CO5	–	1	3	2	–	2	2	2	2	2
WT.AVG	2	2	2	2	1.67	2.4	2.4	2.6	2.6	2.8
PO ATTAINMENT USING CO (DIRECT METHOD)	1.98	1.98	1.98	1.98	1.65	2.38	2.38	2.57	2.57	2.77

Indirect Attainment Calculation

The feedback from the following aspects are used as rubrics,

- Current Passing out Students
- Stakeholders
- Alumni
- Survey from Placement Officer

The questions in the survey sheet represented the PO'. All these survey needs to be a quantified one (1, 2, 3) and there must be based on predefined levels like Rubric's defined for direct calculation. Sample rubrics are denoted below.

Rubric's for Attainment Calculation

60% People are giving above 3 – 1 (LOW)
70% People are giving above 3 – 2 (MEDIUM)
80% People are giving above 3 – 3 (HIGH)

Survey	Indirect Attainment									
	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	PSO3	PSO4	PSO5
Current Passing out students	3	2	3	3	3	2	3	2	2	1
Alumni	3	2	3	1	2	3	2	1	3	2
Survey from placement Cell	3	3	2	3	3	1	2	3	2	1
Indirect PO Attainment	3	2.33	2.67	2.33	2.67	2	2.33	2	2.33	1.33

8. Student Competency

Base Score for Student Category

- <50% - Slow Learner
- 50% to 65% - Average Learner
- >65% - Advanced Learner

Strategies for Slow, Average and Advanced Learners

For Slow learners

- Document/record of remedial classes with timetable & attendance
- Specially designed assignment/ task
- Student study group for peer-to-peer learning
- Individual Counseling
- Student help desk

Note: Remedial sessions should be conducted once in a week.

For Average Learners

- Additional assignment/ task
- Encouraging for timely and effective completion of work
- Conduction of quiz, orals etc.
- Solving previous year University question papers and test papers
- Presentation on technical topics/ case studies/mini projects

Note: Activities should be on continuous basis.

For Advanced Learners

- Encouraging to present & publish papers in Journals/Conferences/Competitions
- Guidance for GATE/ competitive Examination
- Encouraging participating in professional activities.
- Specially designed activities to improve the portfolio of students.
- Individual guidance for career building

Note: Activities should be on continuous basis.

9. Rubrics for Assessment

Rubric is a scoring guide with criteria for evaluating students' work in direct relation to one or more of the PO's and a rating scale indicating differing levels of performance. Rubric is,

- Used to examine how well students have met CO or PO rather than how well they perform compared to their peers.
- Typically include measurable descriptors that define expectations at each level of performance for each criterion.

Rubrics for Class Participation

OBE Tool	Evaluation Rubrics			
Class Participation	Open book test	Flip Test	Instant Assignment	Just a Minute Presentation
Seminar	Content	Knowledge	Eye contact	Communication
Assignment	Content	Work shown	Completion	Presentation
Group Discussion	Content	Knowledge	Communication	Problem Analysis and Suggestions
Case Study	Findings	Recommendations	Conclusion	Oral Presentation

Rubrics for Seminar

Criteria	Excellent	Very Good	Good	Average
	5	4	3	2 or 1
Content	Information presented with logical examples, easy to follow	Information presented in sequence, easy to follow	Most of the information presented in sequence	Quit low relevant information, Hard to follow
Knowledge	Demonstrated full knowledge; answered all questions with elaboration	Answered all questions but need to elaborate more	Answered most questions but failed to elaborate	Grasped the information; answered basic questions
Eye contact	Completely encaged with all the audience	Eye contact Majority of the time	Eye contact at a point	occasional eye contact
Communication	Precise pronunciation, Voice is clear and steady all the time	Precise pronunciation, Voice fluctuations from clear to low	Correct pronunciation, Voice is clear with few fluctuations	Incorrectly pronounces some terms, Audible voice

Rubrics for Assignment

Criterion	Excellent	Very Good	Good	Average
	5	4	3	2 or 1
Content	High quality useful information was presented	Correct and most useful information presented	Information presented are mostly correct	Incorrect information presented
Work shown	All work meticulously shown	Most work meticulously shown	Few work meticulously shown	Some steps for problem solving are missing
Completion	Students submitted before due date	Students submitted on date	Students submitted two days late	Students submitted up to a week
Presentation	Precise solution step by step	Easy understanding of solution step by step	Solution is presented in a Logical manner	Solution is difficult to follow

Assessment Pattern

S.No.	For Theory - UG Courses	Distribution of Marks		
01.	CIAI	8	4	4
02.	CIAII (OnlineTest)	8	4	4
03.	CIAIII	10	7	5
04.	OBE Evaluation – Tool 1	8	5	4
05.	OBE Evaluation – Tool 2	8	5	4
06.	OBE Evaluation – Tool 3	8	5	4
	TOTALMARKS	**50**	**30**	**25**

Three CIA's shall be conducted at regular Intervals.CIA I shall be a 2 hours written test for a maximum of 50 marks and CIA II shall be conducted online for 50 marks. CIA III shall be conducted as Model Examination for ESE. Three OBE Assessment parameters are decided for each course to evaluate the achievement of course outcomes which shall be assessed by the concerned course teacher. The marks allotted to this component will be awarded based on the performance of the candidate.

Distribution of marks for the Continuous Internal Assessment in Practical Courses

S.No.	For-UG Practical Courses	Distribution of Marks		
01.	Laboratory Performance-Assessment Tool 1	8	5	4
02.	Laboratory Performance-Assessment Tool 2	8	5	4
03.	Laboratory Performance- Assessment Tool 3	8	5	4
04.	Test1: During Mid semester	10	6	5
05.	Test2: As model test at the end of the semester	10	6	5
06.	Observation Note Book	6	3	3
Total Marks		**50**	**30**	**25**

Observation Notebook & Regularity

The marks allotted for Observation Notebook & Regularity are awarded based on the performance of students in writing procedure, results of the practical done during every practical class, regularity in attending practical class, which will be accounted based on the attendance maintained separately for practical class, and punctuality in the submission of Observation Notebook.

Distribution of marks for the External assessment in UG Practical Courses

S.No.	For -UG Practical Courses	Distribution of Marks		
1.	Experiment-I	15	15	10
2.	Experiment-II	15	15	10
3.	Record	10	10	5
4.	Viva Voce	10	5	-
	TOTALMARKS	**50**	**45**	**25**

Distribution of Marks for Project and Viva Voce examinations / Industrial Training

Total Marks	External		Internal		Overall Passing Minimum for Total Marks(Internal +External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	Passing Minimum for Internal alone	
100	50	20	50	20	40
75	45	18	30	12	30

S.No.	For-UG Project Courses/ Industrial Training	Distribution of Marks	
1.	Review-I	5	10
2.	Review-II	5	10
3.	Review-III	5	10
4.	Document, Preparation and Implementation	15	20
	TOTALMARKS	**30**	**50**
S.No.	**For-UG Project/ Industrial Training Courses**	**Distribution of Marks**	
1.	Record Work and Presentation	35	35
2.	Viva Voce	15	10
	Total Marks	**50**	**45**

For the above –mentioned subjects, the examinations shall be only Continuous Internal Assessment (CIA) as prescribed in the syllabus. The marks shall be furnished to the CoE. The courses which have only End Semester Examinations (ESE) have no Continuous Internal Assessment. A candidate who secures **not less than 40%** in the End Semester Examination and **not less than 40%** marks in the Internal Assessment which earns 40% marks in the External Examination and Continuous Internal Assessment put together in any theory course of Part I, II, III & IV shall be declared to have passed the examination in the subject (theory only).

Practical/ Project /Viva-voce/Industrial Training (Subjects other than theory)

A candidate who secures not less than 40% in the End Semester Examination and not less than 40% marks in the Internal Assessment which earns 40% marks in the External Examination and Continuous Internal Assessment put together in any Practical /Project course of Part I, II, III& IV shall be declared to have passed the examination in the subject. A candidate who passes the examination in all the courses of Part I, II, III, and IV & V shall be declared to have passed, the whole examination. Thus, to obtain UG degree a student should pass in all the courses prescribed in the concerned programme and also, he / she shouldearn144 credits.

Improvement of marks in Continuous Internal Assessment:

There shall be a provision for reappearance for improving the marks in the internal assessment within the duration of the Semester in case of non-attainment of minimum Internal marks. The Course Teacher should monitor the progression of the Students and

Department wise Academic Council meeting shall be conducted at the end of CIA II to discuss about the support needed to the student who has not attained the minimum passing level.

Distribution of marks for External and Internal for theory papers of PG Courses

Total Marks	External		Internal		Overall Passing Minimum for Total Marks (Internal + External)
	Max Marks	Passing Minimum for External alone	Max Marks	Passing Minimum for Internal alone (50%)	
100	50	25	50	25	50
75	45	23	30	15	38
50	25	13	25	12	25

Distribution of Internal marks for theory papers of PG Courses

S.No.	For Theory – PG Courses	Distribution of Marks		
01.	CIAI	8	4	3
02.	CIA II (Online Test)	8	4	3
03.	CIA III	10	7	7
04.	OBE Evaluation –Tool 01	8	5	4
05.	OBE Evaluation –Tool 02	8	5	4
06.	OBE Evaluation –Tool 03	8	5	4
	TOTALMARKS	**50**	**30**	**25**

Distribution of marks for External and Internal for Practical papers of PG Courses

Total Marks	External		Internal		Overall passing Minimum for Total Marks (Internal + External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	Passing Minimum for Internal alone	
200	100	50	100	50	100
100	50	25	50	25	50
75	45	23	30	15	38
50	25	13	25	12	25

Distribution of Internal marks for PG Practical Papers

S.No.	For – PG Practical Courses	Distribution of Marks			
1.	Laboratory Performance- OBE Tool 1	16	8	6	5
2.	Laboratory Performance- OBE Tool 2	16	8	6	5
3.	Laboratory Performance- OBE Tool 3	16	8	6	5
4.	Test1: During Mid semester	20	10	4	4
5.	Test2 :As model test at the end of the semester	20	10	4	4
6.	Observation Note Book	12	6	4	2
	Total Marks	**100**	**50**	**30**	**25**

Distribution of External Marks for PG Practical Papers

S.No.	For-PG Practical Courses	Distribution of Marks			
1.	Experiment-I	35	15	15	10
2.	Experiment-II	35	15	15	10
3.	Record	15	10	10	5
4.	Viva Voce	15	10	5	-
	Total Marks	**100**	**50**	**45**	**25**

Distribution of Marks for Project and Viva Voce Examinations and Continuous Internal Assessments and passing minimum marks for the Project / Industrial Training courses of PG Programmes.

Total Marks	External		Internal		Overall Passing MinimumFor total marks (Internal +External)
	Max. Marks	Passing Minimum for External alone	Max. Marks	Passing Minimum for Internal alone	
50	-	-	50	25	25
100	50	25	50	25	50
150	75	38	75	37	75
200	100	50	100	50	100
250	125	63	125	62	125

Distribution of Internal marks for the Continuous Internal assessment in PG Project / Industrial Training Courses

S.No.	For-PG Project Courses	Distribution of Marks			
1.	Review-I	10	15	20	25
2.	Review-II	10	15	20	25
3.	Review-III	10	15	20	25
4.	Document, Preparation and Implementation	10	15	20	25
5.	Paper Publication in Journals	10	15	20	25
	TOTAL MARKS	**50**	**75**	**100**	**125**

Distribution of marks for the External Examination in PG Project / Industrial Training

S.No.	For –PG Project Courses	Distribution of Marks			
1.	Record Work and Presentation	30	45	60	75
2.	Viva Voce	20	30	40	50
	TOTALMARKS	**50**	**75**	**100**	**125**

10. List of Assessment Tools

All (Direct + Indirect) CO Assessment Tools = PO Direct Assessment Tools

Direct Tools: (Measurable in terms of marks and w.r.t. CO) Assessment done by faculty at Institute level

- CIA Test
- Quiz
- Other OBE tools
- Skill Based Task
- Model Exam
- Assignment
- Industrial Visit
- Skill Based Activity
- End Semester Exam
- Practical/ Lab work
- Workshop
- Course Exit Survey

Indirect Tools: (Non measurable in terms of marks and w.r.t. CO) Assessment done at Institution Level)

- Program Exit Survey
- Alumni Survey
- Employer Survey of Alumni
- Parent Feedback

11. Sample List of Activities with BTL

Activities	Possible BTL	PO Mapping
Tutorial-Write-ups	Understand, Apply	Any relevant PO from 1to5
Practical-Experiments	Understand, Apply, Analyze, Evaluate, Create	Any Relevant PO
Test/Quiz	Understand, Apply, Analyze	Any relevant PO from 1to5
Student's Seminar	Understand, Apply, Analyze	Any PO from 1,2, 8
Case Study	Understand, Apply, Analyze	Any Relevant PO
Presentation/Oral	Understand	
Guest Lecture	Understand	
Visits	Understand	
Survey & Analysis	Apply & analyze	
Workshop/Hands-on Training	Apply, Analyze, Evaluate	
Task	Evaluate, Create	
Minor Project	Create	

12. Continuous Improvement

A) Contribution of CO in PO attainment and Continuous Improvement (Faculty Level)

Outcome	Action to be taken by faculty
High attainment of all CO-PO (>2.5 out of 3)	Frame higher targets or attainment levels for next Academic Year (A.Y.).
Moderate attainment of all CO-PO(1.8 to 2.49 outof3)	Record observations, Continue action plan of last A.Y. with plan for improvements.
Low attainment of all CO-PO(0.9to1.79 out of 3)	Record observations, assess the target set, revise/improve action plan of last A.Y. to achieve the attainment with plan for improvements.
CO-PO not attained, poor performance(<0.9outof3)	Record observations, Critical assessment of target with Program Assessment Committee (PAC), Revise action plan of last A.Y. at faculty/department level.

B) . PO attainment and Continuous Improvement (PC and HoD Level)

Category	Outcome	Action by PC and HoD
Course related	PO attained highly	Include activities with HOT.
	PO not attained highly	Identify concerned courses, plan for immediate improvements, guide, support and monitor its execution.
Activity related	Activities Conducted	Critical assessment, impact analysis to be done and revise as per the need for improvements.

All PO's can be adequately addressed through the selection of core courses and their CO's. If assessment is in alignment with CO's, then the performance of the students indicates the CO attainment. These measurements provide the basis for continuous improvement in the quality of learning. The attainment at Course Level, Programme Level and Institutional Level ensures the quality assurance for the stake holders. All the attainment analysis is made to provide continuous improvement through either in course delivery, assessment and Curriculum.

13. Review of OBE System

The OBE committee of the Institution shall review the implemented system based on stakeholders' feedback and analysis of corporate demands. Due attention shall be given to incorporate the needs of the students and developmental concerns of nation. The OBE policy shall be updated to incorporate changes in the government policies, new initiatives in higher education and demanding innovations by the Institution.

Approved By