OBE FRAMEWORK

DEPARTMENT OF ELCTRICAL ENGINEERING

THE UNIVERSITY OF AZAD JAMMU AND KASHMIR, MUZAFFARABAD

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1. GENERAL INTRODUCTION

The decision taken by the PEC to make Pakistan a member of the Washington Accord provided the basic motivation and thrust to transform the electrical engineering program at the University of Azad Jammu and Kashmir, Muzaffarabad in line with the Outcome Based Education (OBE) system. The work in regard to adoption of OBE system at department of electrical engineering (DEE), UAJK started in summer 2018.

The first task was to study the model of OBE and the guidelines provided by the PEC in its accreditation manual for devising a comprehensive strategy to initiate a gradual shift towards the OBE system. Successive faculty trainings were held to develop understanding of various ingredients of the OBE system such as Program Educational Objectives (PEOs), Program Learning Outcomes (PLOs), Course Learning Outcomes (CLOs), and the assessment methods. Once the faculty developed the basic understanding of the OBE system, successive faculty meetings were held to design a framework to implement OBE system in the department. Consequently, the department has adopted the OBE system from Fall-2019 semester. In 2019, the PEC visitation team highlighted some major issues in the implemented OBE model. The PEC fruitful guidelines help to revise the OBE model. As a result, the implemented OBE model was comprehensively reviewed and framework to implement the OBE system was redesigned. In 2021, the redesigned framework was presented to various OBE experts and the PEC visitation team. Consequently, the OBE model was further refined by incorporating their comments.

This document helps its readers/stakeholders to understand the details of the OBE model implemented at department of electrical engineering, UAJK.

2. GENERAL OVERVIEW OF OBE FRAMEWORK OF THE DEE

OBE is a student-centered teaching and learning methodology to education that focuses on what a student should be able to do in the real world upon completion of their course or program. It focuses on measuring student performance/student outcome at different levels. The main goal of OBE is to bridge education and employability. The first step to design an OBE framework is to identify the outcomes of the degree program. Then, the curriculum is designed based on the identified outcomes. Different teaching/learning strategies and assessment tools and key performance indicators (KPIs) are developed to achieve and assess these outcomes. Finally, the

Figure 1: OBE Framework of Electrical Engineering Department, UAJK.

relationship between curriculum design, teaching/learning strategies and respective outcomes is evaluated and corrective actions are taken in case of any shortcoming.

The OBE framework of UAJK is given in Figure 1. The model has three CQI cycles for the assessment of PEOs, PLOs, and CLOs. The Key Performance Indicators (KPIs) are set for each assessment method and data is analyzed from direct and indirect assessment methods.

A. MISSION OF DEPARTMENT OF ELECTRICAL ENGINEERING

The mission of the Department of Electrical Engineering is

"To provide requisite knowledge and skills that are state of the art and conducive to produce competent electrical engineers who can contribute towards the betterment of society by efficiently fulfilling their professional responsibilities in industrial, academic and research organizations."

B. PROGRAM EDUCATIONAL OBJECTIVES

Program Educational Objectives (PEOs) are the attributes and abilities that the graduates are expected to demonstrate after 4 years of their graduation. The PEOs are direct translation of program mission as they are aligned with the mission of university and program. The PEOs stipulate the high-level program objectives and provide a broad framework to design program learning outcomes, curriculum and its provision.

The PEOs of B.Sc. Electrical Engineering (EE) program were initially proposed by the departmental faculty. Afterward, the PEOs were reviewed and refined by the stakeholders and industrial advisory board in their meetings which were held in the department. The proposed PEOs were then presented in statutory bodies meetings for approval. The approved PEOs are as follows:

PEO-1: *Serve competently* in national and international *industry or academia* by showing excellent *skills and knowledge* in the field of Electrical Engineering.

PEO-2: Exhibit the *quest for learning* and initiative through *elevation in education* or *growth in professional status*.

PEO-3: Demonstrate commitment to *ethical practices*, *community service* and *societal contribution*.

The keywords of the PEOs are highlighted and will be used in subsequent sections for reference.

The mission of the department of the electrical engineering is well aligned with the vision and mission of the university. Similarly, the PEOs are aligned with the mission of the department which is already linked and mapped with vision and mission of the university. The mapping can be seen in Table 1 to Table 4.

Table 1: Mapping of PEOs on Departmental Mission.

	Departmental Mission	PEOs		
		1	2	3
Mission	To provide requisite knowledge and skills that are state of the art and conducive to produce competent electrical engineers who can contribute towards the betterment of society by efficiently fulfilling their professional responsibilities in industrial, academic and research organizations.	✓	✓	✓

Table 2: Mapping of PEOs on University's Vision/Mission.

	University Mission and Vision	PEOs		
		1	2	3
Vision	Transformation to excellence, through holistic education.	✓	✓	✓
Mission	The University is committed to quality education, research and values-driven mentorship through innovations to serve the society and the changing world	✓	✓	✓

Table 3: Mapping of Departmental Mission with University Mission.

S. No.	University Mission	Program Mission		
		requisite knowledge and skills	betterment of society	research organizations
1.	quality education, research	✓		✓
3.	serve the society		✓	

Table 4: Mapping of PEOs to University and Department Vision/Mission (Mapping by keywords).

Program Educational Objectives	Keywords
PEO-1: **Serve competently in national and international industry or academia by showing requisite knowledge and skills in the field of Electrical Engineering.**	**University Vision:** holistic education **University Mission:** quality education, research, innovation **Department Mission:** Requisite knowledge, skills, efficiently fulfilling professional responsibilities, industrial, academic.
PEO-2: **Exhibit the quest for learning and initiative through elevation in education or growth in professional status.**	**University Vision:** Transformation to excellence **University Mission:** quality education **Department Mission:** competent electrical engineers
PEO-3: **Demonstrate commitment to ethical practices, community service and societal contribution**	**University Vision:** Transformation to excellence **University Mission:** to serve the society **Department Mission:** contribute towards the betterment of society

I. Processes to Evaluate the Attainment of PEOs

The PEOs for department of electrical engineering are developed in a manner to instill the ability of accomplishments that the graduates are expected to demonstrate within 4-5 years after graduation. The process to measure the attainment of the PEOs is shown in Figure 2.
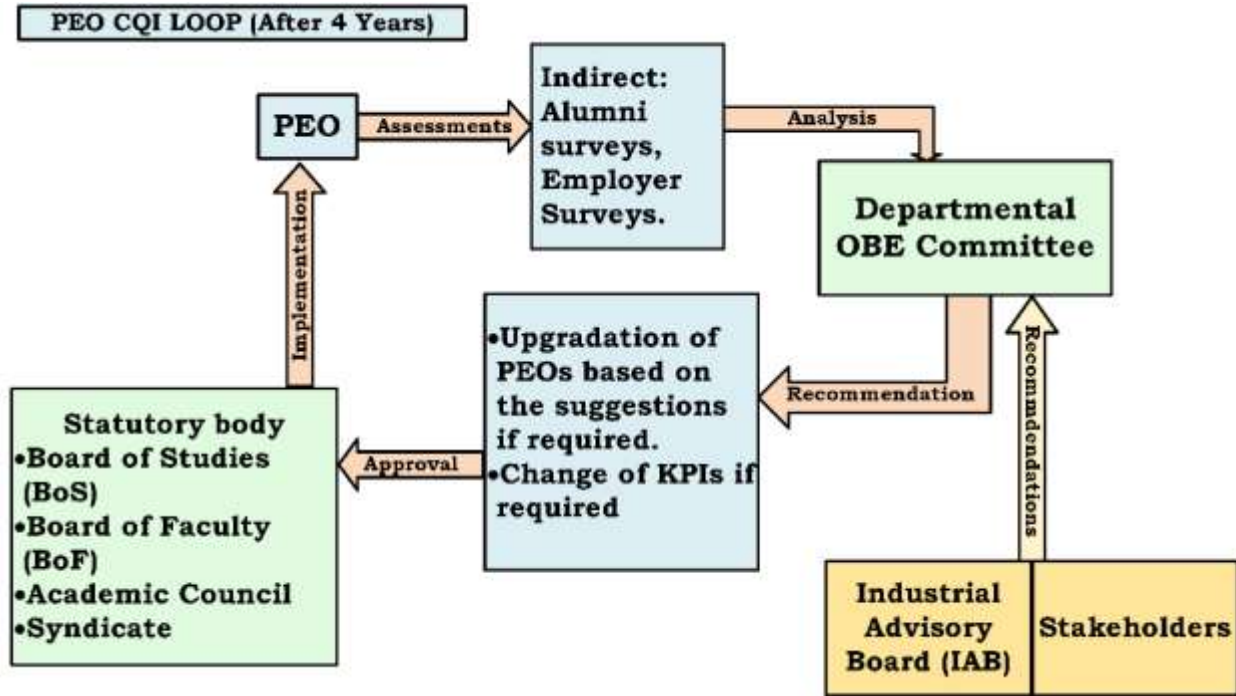

Figure 2: CQI Process for the Attainment of the PEOs.

The attainment evaluation process begins with the collection of alumni and employer surveys. The alumni and employer survey forms are given in Annexure A. The data from employer and alumni surveys is collected every year. The collected data is analyzed and compared with the KPIs. Summary report of PEO achievement are generated by the data collected which are then reviewed by the QEC program team and departmental OBE committee. If the KPIs are not met, the meetings with stakeholders and IAB is conducted to perform corrective measure which may include revision of KPIs or revision of PEOs. The collected data is evaluated as per KPIs and subsequently reviewed. These corrective actions are further taken to statuary bodies for their approvals.

The KPIs are tailored while considering the diversification in choices of graduates in selecting their employment after graduation. Certain minimum requirements are kept as Key Performance Indicators (KPIs), so that success of the program can be established with each review cycle. The

targets are also identified that describe various measures of success which would be used over next 4 years to evaluate the achievements and progress of the program. Measurement of the Attainment of the PEOs. The KPIs for the PEOs are given in Table 5.

Table 5: PEOs measurement tools, KPIs and time of collection of data

Program Educational Objectives	Measurement Tool	Key Performance Indicators	Collection Period
PEO 1	Alumni Survey	More than 60% of graduates are employed after graduation, i.e., including jobs, higher studies and entrepreneurship.	Annually
	Employer Survey	At least 60% of the respondents give an average score of 3 or above on a scale of 1-5 regarding competence, knowledge and skills of employed graduates.	Annually
	Alumni Survey	At least 60% of the respondent graduates give an average score of 3 or above on a scale of 1-5 regarding knowledge and skills imparted to them.	Annually
PEO 2	Employer Survey	At least 60% of respondent employers give an average score 3 or above on a scale of 1-5 regarding interpersonal skills of graduates.	Annually
	Alumni Survey	At least 20% of the total graduates are pursuing higher education.	Annually
	Employer Survey	At least 70% of respondents give an average score of 3 or above on a scale of 1-5 for the graduates' involvement in professional development activities.	Annually
	Alumni Survey	At least 60% of the respondent graduates give an average score of 3 or above on a scale of 1-5 regarding developing of solution to engineering problems and interpersonal skills.	Annually
PEO 3	Employer Survey	At least 70% of the respondents give an average score of 3 or above on a scale of 1-5 for the graduates' role in betterment of the society.	Annually
	Employer Survey	At least 70% of the respondents give an average score of 3 or above on a scale of 1–5	Annually

		with adherence to ethical values of the graduates.	
	Alumni Survey	At least 60% of the respondent graduates give an average score of 3 or above on a scale of 1–5 regarding their ethical values and their impact for the betterment of society.	Annually

II. Strategic Plan to Achieve PEOs

In order to be successful in achieving the defined PEOs, the department of electrical engineering has defined several strategies for achieving each PEO.

PEO-1: Serve competently in national and international industry or academia by showing excellent skills and knowledge in the field of Electrical Engineering.

Strategies:

1. Develop linkages with the industry.
2. Maintain a strong faculty to student ratio, ideally under the range of 1:25.
3. The curriculum should be revised periodically under the recommendations of postgraduate faculty members and experts from the industry.
4. The DEE to organize seminars, workshops and training sessions for continuing professional development.
5. Invite professors from different reputable academic institutions to give seminars and hold workshops on important technical subjects with state of art practices.
6. Invite various companies to give seminars on important industrial developments.
7. Industrial Skill development workshops.

PEO-2: Exhibit the quest for learning and initiative through elevation in education or growth in professional status.

Strategies:

1. Develop linkages with the industry.

2. The Department of Electrical Engineering to organize seminars, workshops and training sessions for continuing professional development.

3. Create liaison with international universities to grab opportunities for students to avail scholarships for higher studies.

4. Undergo extensive review of the curriculum as recommended by the HEC (NCRC).

5. Attract and retain highly qualified and motivated faculty in all core areas of the program.

PEO-3: Demonstrate commitment to ethical practices, community service and societal contribution.

Strategies:

1. Invite industry professionals and organize seminars on leadership and ethical practices related to the workplace environment.

2. Addition of zero-credit community service course in the curriculum.

3. Revision of the curriculum at regular intervals using the suggestions and recommendations of senior faculty members regarding modern-day tools.

4. Impart ethical values, professionalism, and morality in students.

C. PROGRAM LEARNING OUTCOMES (PLOs)

The twelve graduate attributes provided by the PEC as per Manual of Accreditation 2019 have been adopted by the Department of Electrical Engineering UAJK, Muzaffarabad as the PLOs for its Bachelor in Electrical Engineering Program.

1. Engineering Knowledge: An ability to apply knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.

2. Problem Analysis: An ability to identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences.

3. Design/Development of Solutions: An ability to design solutions for complex engineering problems and design systems, components or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.

4. Investigation: An ability to investigate complex engineering problems in a methodical way including literature survey, design and conduct of experiments, analysis and interpretation of experimental data, and synthesis of information to derive valid conclusions.

5. Modern Tool Usage: An ability to 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.

6. The Engineer and Society: An ability to apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice and solution to complex engineering problems.

7. Environment and Sustainability: An ability to understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate knowledge of and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

9. **Individual and Team Work:** An ability to work effectively, as an individual or in a team, on multifaceted and /or multidisciplinary settings.

10. Communication: An ability to communicate effectively, orally as well as in writing, 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.

11. Project Management: An ability to demonstrate management skills and apply engineering principles to one's own work, as a member and/or leader in a team, to manage projects in a multidisciplinary environment.

12. Lifelong Learning: An ability to recognize importance of, and pursue lifelong learning in the broader context of innovation and technological developments.

The PLOs of DEE are well-aligned with the PEOs as illustrated in the Table 6.

Table 6: Mapping of PLOs to PEOs.

PLOs	PEOs		
	PEO-1	**PEO-2**	**PEO-3**

PLO-1	Engineering Knowledge	✓		
PLO-2	Problem Analysis	✓		
PLO-3	Design/Development of Solutions	✓		
PLO-4	Investigation	✓		
PLO-5	Modern Tool Usage	✓		
PLO-6	The Engineer and Society			✓
PLO-7	Environment and Sustainability			✓
PLO-8	Ethics			✓
PLO-9	Individual and Team Work		✓	
PLO-10	Communication		✓	
PLO-11	Project Management	✓		
PLO-12	Lifelong Learning		✓	

I. Processes to Evaluate the Attainment of PLOs

The PLOs are assessed by both indirect and direct assessment methods. The PLOs are assessed by using the following measurement tools:

❖ **Indirect assessment**
- Exit Survey
- Alumni survey

❖ **Direct assessment**
▪ Course based PLO-assessment
- Quiz, Assignment, Complex Engineering Problems and Exams.
- Labs and Semester Projects.
- Final Year Project.

Data is collected at various stages during academic program, while evaluation and review is carried out at the time of graduation. The DOBE committee reviews and analyzes the attainment
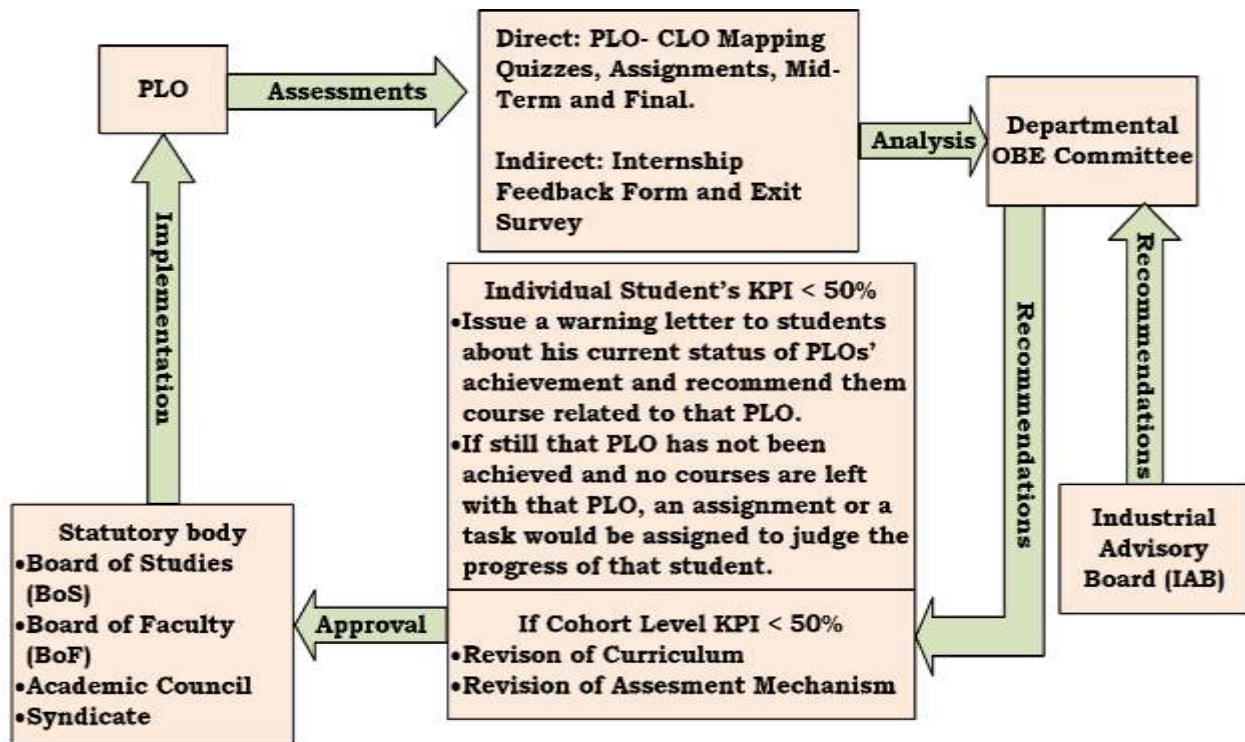
Figure 3: CQI Process for the PLOs.

of PLOs at the end of spring semester. Any corrective action if required are initiated by DOBE committee and may progressively be taken up to various statuary bodies for approval.

The CQI process for PLOs assessment is outlined in Figure 3. The stakeholders involved in initiation of CQI process for PLOs are university faculty, students and the industry. Faculty is involved through teaching and direct assessment of PLOs, students through exit surveys and industry is involved through input in the form of internship feedback. The attainment of PLOs are reviewed once a year at the end of the spring semester. The attainment of twelve PLOs is assessed directly from the attainment of the CLOs and indirectly through internship and exit student survey. CLOs are defined for each subject in the curriculum and are mapped with PLOs of respective domain.

The stepwise process of PLOs assessment at the end of each spring semester is as follows:

1. Direct assessment of PLOs is carried out from the assessment of CLOs pertaining to a particular PLO by the faculty members.

2. CLOs are linked with assessment methods by the faculty and a passing criterion of 50% is kept as KPI.

3. All students who have attained more than 50% marks in the weighted assessment method are said to have attained the respective CLO.

4. The CLOs are linked with the PLOs and if the weighted total of the student is above the KPI of 50%, the student has attained the respective PLO in that course.

5. The PLOs are also assessed by indirect assessment methods i.e., exit survey and internship survey against the set KPI.

6. Students who have not achieved their PLOs are highlighted by the DOBE committee.

7. If a particular student does not achieve a PLO, he/she is highlighted by the DOBE committee and a warning letter is issued to that student regarding the upcoming courses related to that particular PLO.

8. The DOBE committee also analyzes the PLO attainment at cohort level against the set KPI and made a comprehensive report. The curriculum may be revised and updated or assessment methods may be revised based on comprehensive report.

The assessment of PLOs is carried out by both direct and indirect assessment methods. The KPIs for PLOs are shown in Table 7. At the time of graduation, all PLOs must be attained as per the set KPI from both direct and indirect assessment methods. These assessment methods for course outcomes are evaluated and corrective actions are initiated by DOBE committee.

Table 7: KPIs for the Attainment of PLOs.

	Assessment Method	Assessment Level (s)	KPI
PLOS (1 to 12)	**Indirect**	Exit Survey	Minimum 50% of students attain score 3 and above on the scale of 1-5 for each PLOs.
		Internship Survey	Minimum 50% of students attain score 6 and above on the scale of 1-10 in internship feedback form for mapped PLOs.

		Student Level Assessment via CLOs, FYP	Each student should attain minimum 50% in all PLOs.
Direct		Cohort Level Assessment via CLOs, FYP	At least 50% of the students should attain a minimum 50% for a PLO.
A PLO is considered to be achieved if a student attains 50% or more in a PLO. A student must pass all the PLOs by the end of the program.			

D. COURSE LEARNING OUTCOMES (CLOs)

CLOs are statements that describe the knowledge or skills the students should acquire by the end of a course/subject, and help students understand why that knowledge and those skills will be useful to them. These are elements of technical or soft skills that each student must acquire after the completion of a specific course. CLOs are designed to support and be measureable against PLOs. CLOs are very specific to each individual course.

In DEE, CLOs have been defined as part of the course curriculum. The level of learning for each CLO is defined on the basis of Blooms Taxonomy of Learning. The Bloom's taxonomy comprises of three distinct domains: Cognitive (C), Psychomotor (P) and Affective (A). The frequency of Taxonomy levels for each domain in the department of electrical engineering is shown in Table 8. The overall distribution of CLOs on Bloom's taxonomy level and the distribution of CLOs at sublevels of these domains have been given in Figure 4.

Table 8: Learning Levels and Taxonomy Domains.

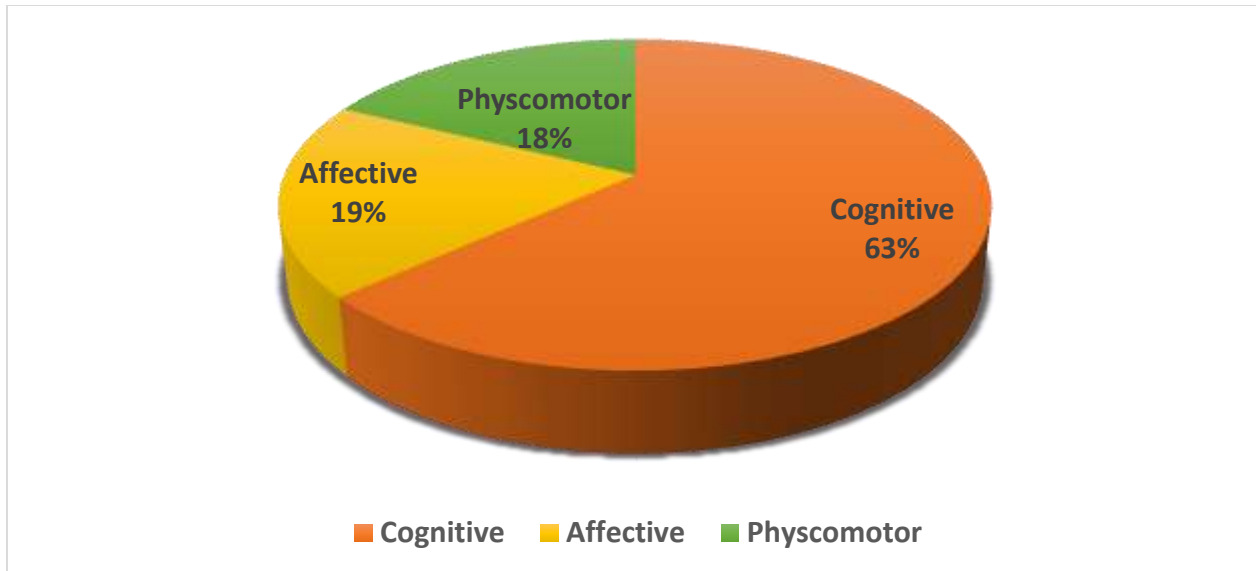| **BLOOM'S TAXONOMY**								
Cognitive	**C1**	**C2**	**C3**	**C4**	**C5**	**C6**		**Total**
	16	22	59	31	15	0		**143**
Affective	**A1**	**A2**	**A3**	**A4**	**A5**			
	4	17	21	1	0			**43**
Psychomotor	**P1**	**P2**	**P3**	**P4**	**P5**	**P6**	**P7**	
	10	17	13	0	0	0	0	**40**

Figure 4: Learning Domains Distribution.

I. Review Process of CLOs

The review process for the CLOs is being carried out through DOBE committee. This committee is responsible for revision and improvement of CLOs and for taking any other corrective actions to meet the desired criterion. The review process of CLOs is shown in Figure 5. At the end of each semester, the DOBE committee assesses and analyses the CLOs achievement against the KPIs and identifies the CLOs in each course which did not meet the KPIs. The DOBE committee formulates a corrective action plan along with the timeline for all those CLOs which were not achieved according to the following guidelines:

1. If more than 50% of the students in a class fail to achieve a CLO, there may be some problems with the CLO's pre-requisite, course outline, method of instruction etc. In this case DOBE committee, in consultation with the HoD, will formulate corrective actions based on the feedback from teacher and students.

2. If the KPI is achieved by 50-70% of the class then DOBE committee, in consultation with the HoD, will suggest the corrective actions based on the feedback from teacher and students for the rest of the students who were not able to achieve the CLO relating to specific PLO.

3. If KPI is met above 70% no action will be taken.
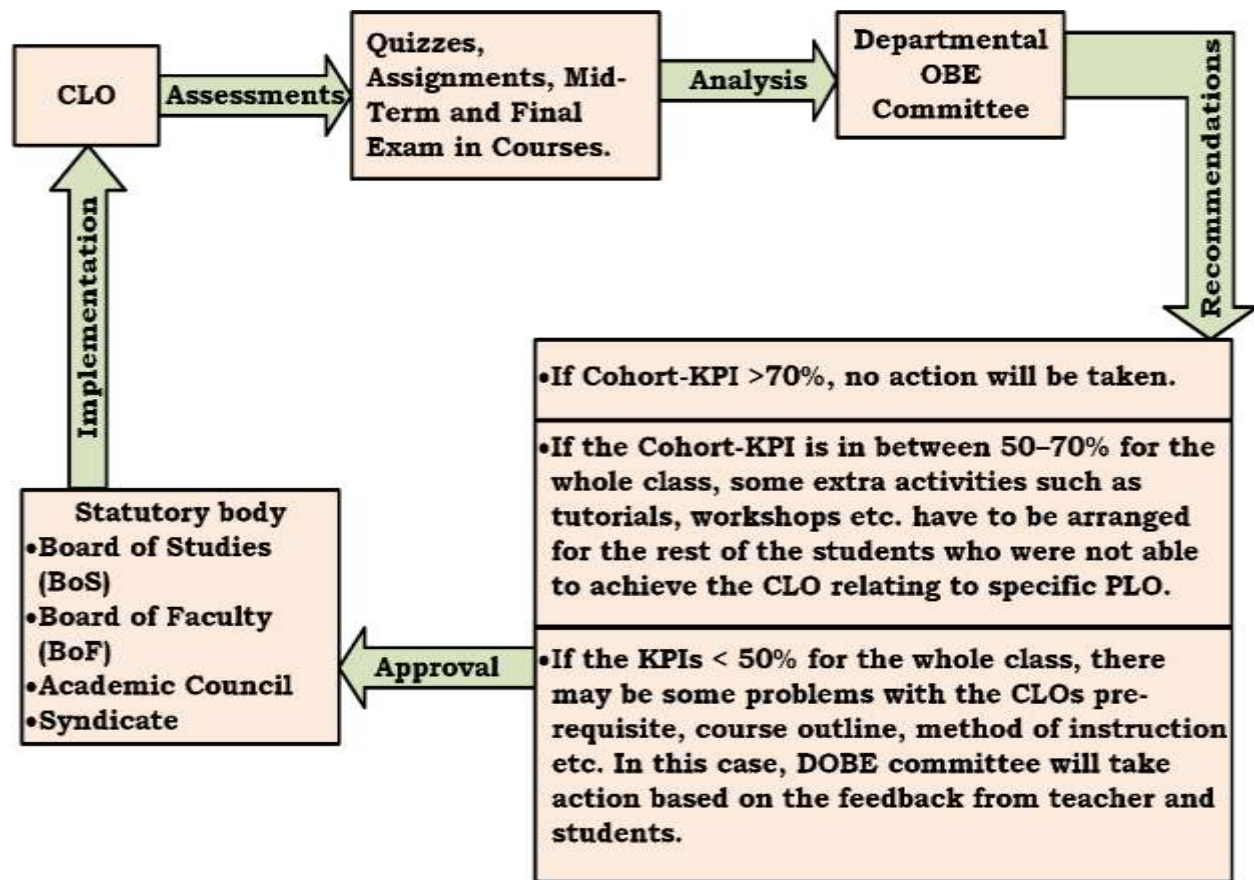
Figure 5: CQI Process for the Attainment of CLOs.

3. CQI POLICY

The OBE practice requires that the implementation of continuous quality improvement (CQI) process to continuously improve the quality of teaching and learning of an education program. Continuous quality improvement is part and parcel of the overall objective evaluation process. The realization of the inadequacies of current systems or implementations and the desire for improvement is the fundamental of CQI process. The CQI process consists of three concentric loops. These loops are CLOs Assessment Loop, PLOs Achievement Loop, and PEOs Attainment Review Loop. These loops are pictorially shown in the Figure 6.

The CQI loop for CLOs is implemented after every semester whereas CQI loop for PLO achievement is executed after every year. The CQI loop for PEO attainment will be implemented after 4 years of graduation.
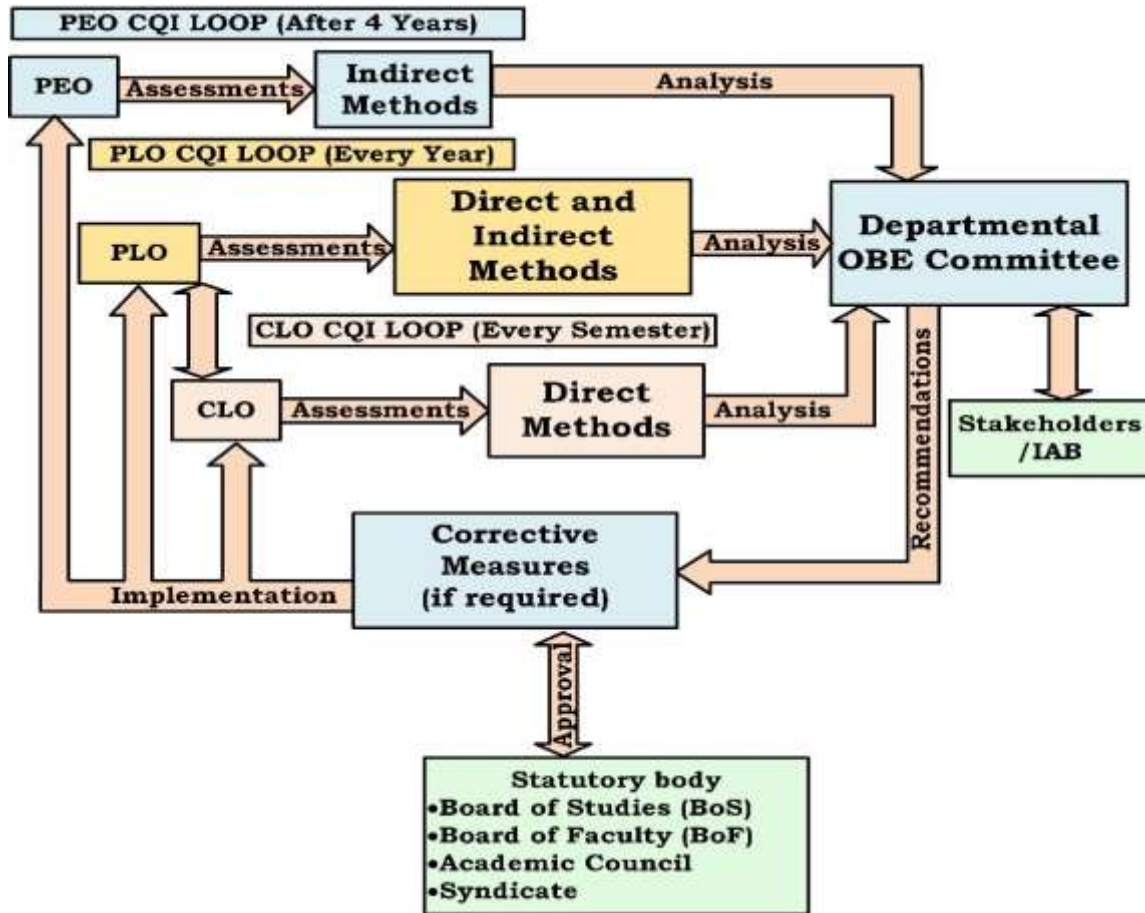
Figure 6: Complete CQI Process.

The DOBE committee is responsible for implementing the CQI process at the department. The DOBE committee collects the following documents to initiate the CQI process:

- Course files.
- Grading sheets with CLO and PLO evaluation.
- Internship survey data.
- Exit survey data.
- Students' feedback summary
- Course report by teacher
- Final year project assessment data

After receiving the documents, the DOBE committee initiates the CQI process for CLOs, and PLOs.

I. CQI POLICY FOR CLOs

CLOs are the fundamental building block of every course in each semester. CLOs are defined for each course as per guidelines of Blooms Taxonomy and are unique and course specific. These CLOs are evaluated via direct assessment i.e. assignments, quizzes, mid-term exam, final term exam, project, lab performance, viva etc. The complete record of CLO attainment is maintained through Quality OBE (Q-OBE) software. The CQI loop for CLOs (inner most loop of Figure 6) is initiated at the end of each semester. The DOBE committee reviews and evaluates each course folder and the CLOs achievement data compiled by the course teacher. The DOBE committee assesses and analyses the CLOs achievement against the KPIs and identifies the CLOs in each course which did not meet the KPIs. The DOBE committee formulates a corrective action plan along with the timeline for all those CLOs which were not achieved according to the following guidelines (see Figure 7):

1. If more than 50% of the students in a class fail to achieve a CLO, there may be some problems with the CLO's pre-requisite, course outline, method of instruction etc. In this
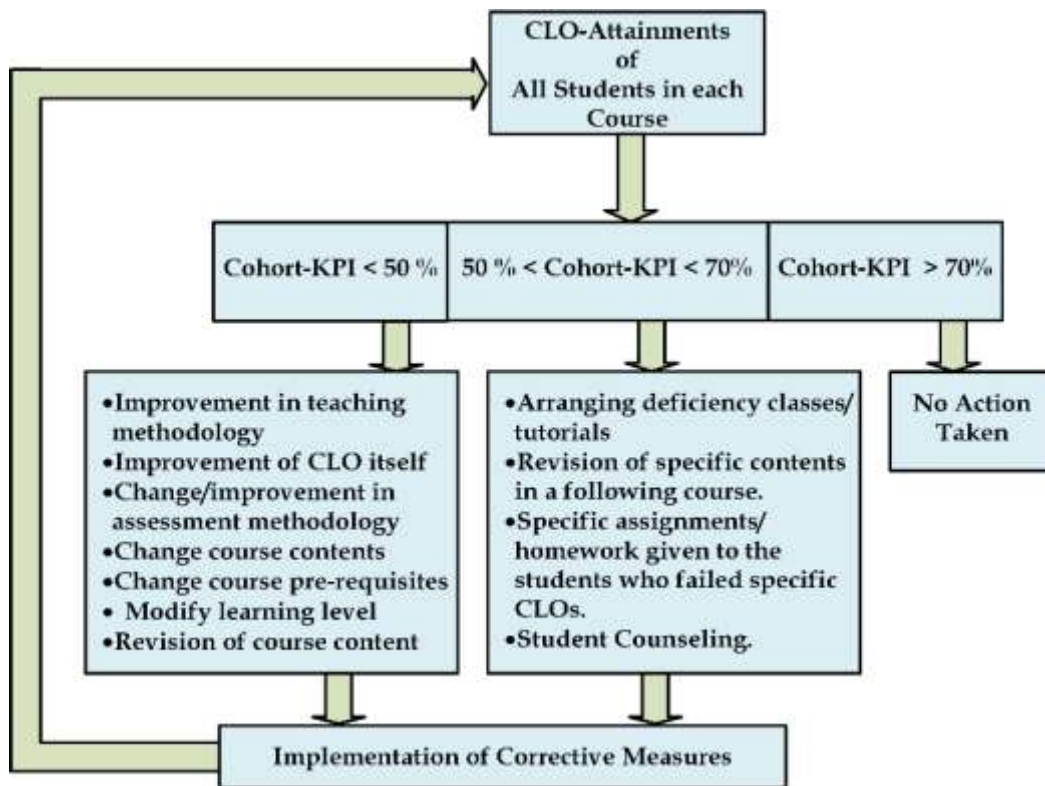
Figure 7: Guidelines for CLOs Corrective Action Plan.

case DOBE committee, in consultation with the HoD, will formulate corrective actions based on the feedback from teacher and students. Some of the corrective action for this scenario are:

    a)   Improvement in teaching methodology

    b)   Improvement of CLO itself

    c)   Change/improvement in assessment methodology

    d)   Change course contents

    e)   Change course pre-requisites

    f)   Modify learning level

    g)   Revision and/or directed reading of specific contents in a following course.

2. If the KPI is achieved by 50–70% of the class then DOBE committee, in consultation with the HoD, will suggest the corrective actions based on the feedback from teacher and students for the rest of the students who were not able to achieve the CLO relating to specific PLO. The corrective actions for this case are:

    a)   Arranging deficiency classes/tutorials.

    b)   Revision and/or directed reading of specific contents in a following course.

    c)   Specific assignments/homework given to the students who fail specific CLOs.

    d)   Student Counseling.

    e)   If KPI is met above 70% no action will be taken.

II. CQI POLICY FOR PLOs

The middle loop in the Figure 6 is the CQI loop for PLOs. The CQI loop for PLOs is initiated after one year at the end of each spring semester. The complete record of PLOs attainment is maintained through Q-OBE software. The DOBE committee analyzes the PLOs attainment report for individual student as well as for whole session at the end of each spring semester. For individual students, if PLOs are attained, the DOBE committee will not take any corrective action. However, if an individual is not unable to attain the KPI for a PLO then different plans are used for improvement. In case, the failed PLOs are repeated in upcoming semesters, the DOBE committee will issue a warning letter to the concern student and batch advisor will guide the student properly

to achieve the PLO in upcoming semesters. In case any student fails to achieve a PLO in last year and he has no chance to improve it in coming semester then DOBE committee, in consultation with HoD, will arrange/offer tutorials, and/or coursework containing such PLOs to recover the failed PLOs. For cohort level, if more than 50 % of the class has attained the KPI for PLOs no corrective action will be taken required. However, if PLOs attainment is less than 50 percent, the DOBE committee, in consultation with the HoD, formulate one or more corrective actions. The corrective actions for cohort level PLO attainment are: revision of KPIs for PLOs, reassessment of courses related to PLOs, CLO-PLO remapping, curriculum revision, redefining/improvement of PLOs, review of teaching & learning processes, review of PLOs assessment methods. The PLO attainment model is shown in Figure 8.
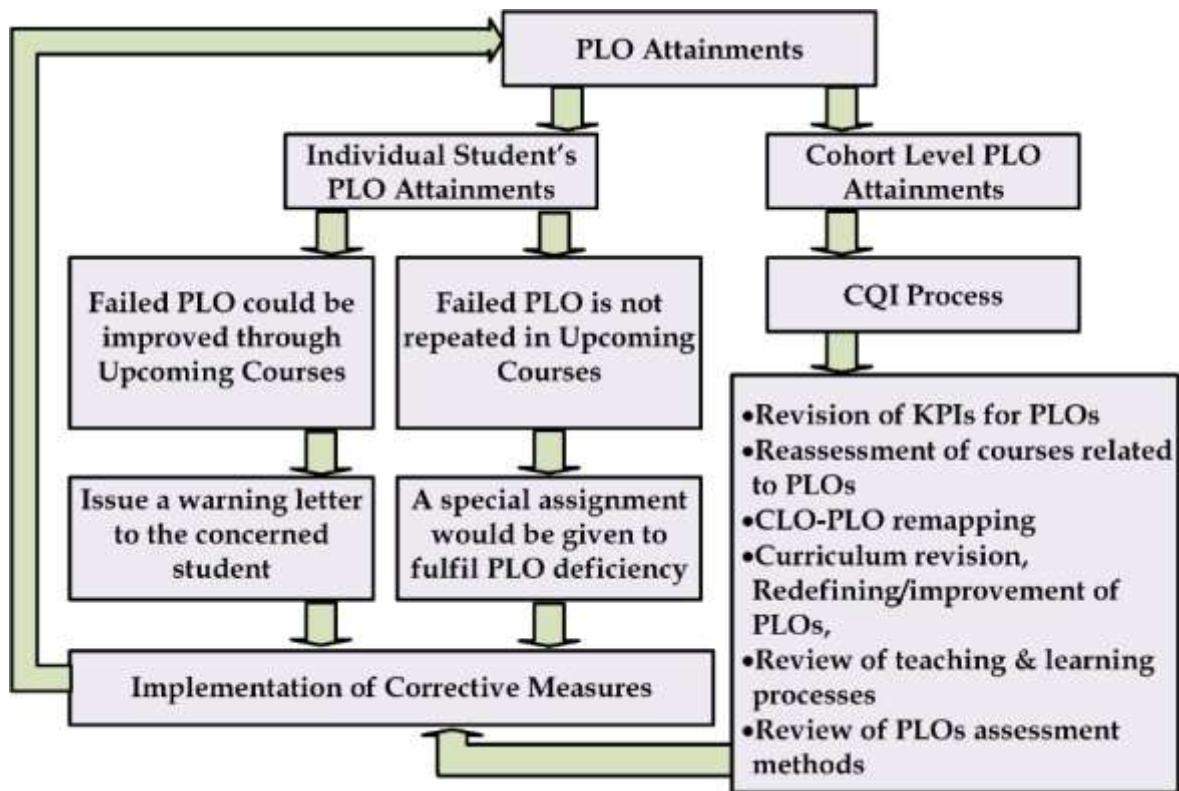
Figure 8: PLO Attainment Model.

III. CQI POLICY FOR PEOs

PEOs are the attributes that we want our students to possess after 4 years of graduation. PEOs are discussed at institutional level in Industrial Advisory Board (IAB) so that feedback from the industry can be taken and PEOs can be reevaluated on the basis of current industrial needs. This feedback is then incorporated in the curriculum and requisite changes are incorporated accordingly. The PEOs are analyzed and passed through the CQI cycle in regular intervals. The outer loop in the Figure 6 is the CQI loop for PEOs. The CQI loop for PEOs will be initiated after 4 years of graduation of first OBE based batch. The department has designed alumni survey form and employer survey form for getting the responses from alumni and employers. The DOBE committee and QEC will analyze these feedback responses to determine whether a particular PEO has been successfully met or not. In case the score is lower than average, QEC initiates a process to find the reason. Some of the corrective measure which could be taken are: redefining /improvement of PEOs, revision of KPIs for PEOs, curriculum revision, review of teaching & learning processes and review of PEOs assessment methods. The review and corrective action plans for PEOs are shown in Figure 9.
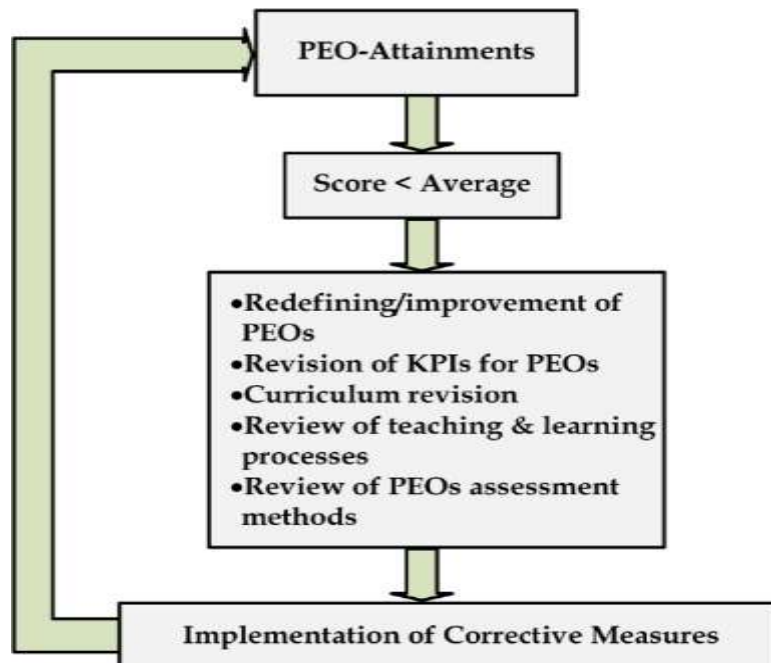

Figure 9: Review and Corrective Action Plans of PEOs.

Annexure A.   Survey Forms

ALUMNI FEEDBACK FORM

Name: _____

Name of organization: _____

Position in organization: _____

Year of graduation: _____

Please select the most appropriate score based on your agreement with the given statement.

S. No	Question	PEO Mapped	Excellent	Very Good	Good	Fair	Poor
			5	**4**	**3**	**2**	**1**
1	To what extent you gained knowledge at UAJK and apply it in your profession?	1	☐	☐	☐	☐	☐
2	Based on the knowledge learned during your graduate program, have you decided to go for higher education?	2	☐	☐	☐	☐	☐
3	Have you been involved in a project related to the solution of an engineering or related problem?	1	☐	☐	☐	☐	☐
4	Have you been involved in a research and innovation related activity?	1	☐	☐	☐	☐	☐

5	An engineer has to deal with his/her superior / colleagues / subordinates etc. Do you conduct yourself in a dignified manner?	3	☐	☐	☐	☐	☐
6	Did you get a chance to lead and manage a team of engineers in developing a solution to engineering problems?	2	☐	☐	☐	☐	☐
7	Did you ever get the experience of working in a multidisciplinary team to develop a Solution?	2	☐	☐	☐	☐	☐
8	Did u think the knowledge you obtained impact for the betterment of society.	3	☐	☐	☐	☐	☐

Suggestions (for the improvement of the program)

_____

_____

_____

_____

_____

EMPLOYER FEEDBACK FORM

Name of Organization:	
Address:	
Contact No.	
Web Address:	

Name and the position of UAJK graduate you are evaluating:

Questions	PEO Mapped	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		1	2	3	4	5
Is he/she able to demonstrate the application of professional knowledge **concerning his / her area of specialization?**	1	☐	☐	☐	☐	☐
Is he/she able to investigate and analyze **solutions to given problems?**	1	☐	☐	☐	☐	☐
Is he/she able to design **engineering problems?**	2	☐	☐	☐	☐	☐
Does he/she take into account the environmental and societal concerns **in his / her professional practice?**	3	☐	☐	☐	☐	☐

Is he/she able to work in a team and cooperate **with others?**	**2**	☐	☐	☐	☐	☐
Did he/she capable of addressing societal and technical / business challenges for the betterment of society?	**3**	☐	☐	☐	☐	☐

To make your feedback more comprehensive, we welcome your valued Suggestion. (If any)

_____

_____

_____

_____

_____

_____

_____

Name   (optional):_____

Company   Name: _____

Email   (optional):_____

Position   of   the   respondent: Middle   Management,   /Senior   Management,

Company's   Nature   of   job: Design/Development/Operation & Maintenance / Other:

_____

No   of   Electrical   Engineers   (all)   employed   (approx.):   _____

No of Electrical Engineers (of UAJK, Muzaffarabad) employed (approx.): _____

(EXIT SURVEY FORM)

Name: _____   **Regd. No:** _____

Department: _____   **Session:** _____

Congratulations for completing Bachelor Degree in Electrical Engineering. UAJK University wishes to ascertain your level of satisfaction about the teaching/learning processes. We value your input to further improve the quality of education.

Please select the most appropriate score based on your agreement with the given statement.

S. No	Statement	PLO Mapped	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
			1	2	3	4	5
1.	I have gained **in-depth applied knowledge** during my studies in the program.	**PLO-1**	☐	☐	☐	☐	☐
2.	The program was effective in developing **analytical and problem solving skills.**	**PLO-2**	☐	☐	☐	☐	☐
3.	The program was effective in enhancing **design skills** including **understanding and implementing engineering design cycle**.	**PLO-3**	☐	☐	☐	☐	☐
4.	The program was effective in developing **ability to evaluate engineering data critically** for performance improvement of solutions.	**PLO-4**	☐	☐	☐	☐	☐
5.	The program has helped me in developing working knowledge of **modern engineering tools**.	**PLO-5**	☐	☐	☐	☐	☐
6.	The program has helped me to understand the **societal impact** of engineering solutions.	**PLO-6**	☐	☐	☐	☐	☐

No.	Statement	PLO					
7.	The program has helped me to adopt **environment friendly sustainable engineering solutions**.	PLO-7	☐	☐	☐	☐	☐
8.	During my studies the overall environment has helped me understand moral and **ethical values**, and my **responsibilities towards society**.	PLO-8	☐	☐	☐	☐	☐
9.	The program was effective in enhancing my abilities to **work in a team.**	PLO-9	☐	☐	☐	☐	☐
10.	The program was effective in developing **written and oral communication skills**.	PLO-10	☐	☐	☐	☐	☐
11.	The program has helped me to understand **management principals** related to planning, executing and managing engineering projects.	PLO-11	☐	☐	☐	☐	☐
12.	The program helped me to develop **self-learning capabilities.**	PLO-12	☐	☐	☐	☐	☐

Enlist the main strengths of your degree program:

Any suggestions for the improvement of the degree program:

Internship Evaluation Form

To the respondent: This form should be returned to the intern. It may also be mailed directly to UAJ&K by the respondent. In either case, the respondent should sign over the sealed envelope flap.

❑ **Student's Name & Registration Number:** _____-
_____

❑ **Department of Student:** _____

❑ **Organization/Company of Internship:** _____

❑ **Duration of Internship in weeks & Working days per week:** _____

Please evaluate the student's performance and conduct during internship by encircling the appropriate number on the scale of 0 to 10, (10 being outstanding). Your cooperation is appreciated.

1. Professional knowledge & skill (PLO 1)

0	1	2	3	4	5	6	7	8	9	10

2. Ability to apply his/her knowledge to design/develop a solution. (PLO 3)

0	1	2	3	4	5	6	7	8	9	10

3. Analytical approach towards solving a problem. (PLO 2)

0	1	2	3	4	5	6	7	8	9	10

4. Ability to use required engineering tools for the assigned task. (PLO 5)

0	1	2	3	4	5	6	7	8	9	10

5. Initiative and drive. (PLO 11)

0	1	2	3	4	5	6	7	8	9	10

6. Practices ethical behavior, punctuality and discipline. (PLO 8)

0	1	2	3	4	5	6	7	8	9	10

7. Ability to evaluate the data/information critically for improvements in solutions. (PLO 4)

0	1	2	3	4	5	6	7	8	9	10

8. Ability to cooperate with associates. (PLO 9)

0	1	2	3	4	5	6	7	8	9	10

9. Considers the societal impact of engineering problems and their solutions. (PLO 6)

0	1	2	3	4	5	6	7	8	9	10

10. Interpersonal skills. (PLO 10)

0	1	2	3	4	5	6	7	8	9	10

11. Self-learning capabilities. (PLO 12)

0	1	2	3	4	5	6	7	8	9	10

12. Endorses or proposes environment friendly and sustainable engineering solutions. (PLO 7)

0	1	2	3	4	5	6	7	8	9	10

Project(s) Assigned: _____

_____

_____

Percentage of assigned project(s) completed: _____

Below 50%	50%	80%	90%	100%

Remarks   (Use   an   additional   sheet   if   needed):
_____

_____

_____

Contact Person in HR: _____ **Designation:**

_____

Telephone: _____

Email: _____

Supervisor's Name: _____ **Designation:**

_____

Telephone: _____

Email: _____

Signature: _____

Official Stamp