



# **NED University of Engineering and Technology**

**Department of Electrical Engineering**

**Bachelor of Engineering (Electrical)**

**DEPARTMENTAL OUTCOME BASED EDUCATION (OBE)  
FRAMEWORK**

**Batch 2025 and Onwards**

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## 1. Vision Statement

### a. University Vision

Be a leader in enabling Pakistan's social and economic transformation.

### b. Department Vision

Be an innovator in electrical engineering education and research to spearhead sustainable and environment-friendly socio-economic growth.

## 2. Mission Statement

### a. University Mission

Acquire education and research excellence in engineering and allied disciplines to produce leadership and enabling application of knowledge and skills for the benefit of the society with integrity and wisdom.

### b. Programme Mission

To inculcate students with essential knowledge, skills and values required for sustainable design, development and innovation in the field of electrical engineering for socio-economic growth and enabling them for lifelong learning to contribute towards interdisciplinary engineering solutions.

## 3. Program Educational Objectives (PEOs)

**PEO-1:** Demonstrate clear understanding and a vision of the core domains of electrical engineering as well as contemporary interdisciplinary research areas.

**PEO-2:** Identify prevalent engineering problems in work/social environments, investigate their causes and propose sustainable solutions with complete cognizance of environmental impacts.

**PEO-3:** Spearhead goal-oriented execution of engineering and/or research projects by applying relevant knowledge and skillset innovatively while demonstrating professionalism and adhering to contemporary project management practices.

**PEO-4:** Pursue lifelong learning goals and continual professional development which contribute to sustainable growth of society based on acceptable ethical principles.

#### 4. Mapping of PEOs to University and Departmental Vision and Mission

Vision and Mission		Program Educational Objectives (PEOs)			
		PEO-1	PEO-2	PEO-3	PEO-4
University Vision	Be a leader <sup>1,3</sup> in enabling Pakistan's social <sup>2</sup> and economic transformation <sup>4</sup> .	✓	✓	✓	✓
University Mission	Acquire education and research excellence <sup>1</sup> in engineering and allied disciplines to produce leadership <sup>3</sup> and enabling application of knowledge and skills <sup>4</sup> for the benefit of the society <sup>2</sup> with integrity and wisdom.	✓	✓	✓	✓
Department's Vision	Be an innovator <sup>2</sup> in electrical engineering education <sup>1</sup> and research to spearhead <sup>3</sup> sustainable and environment-friendly socio-economic growth <sup>4</sup> .	✓	✓	✓	✓
Programme's Mission	To inculcate students with essential knowledge <sup>1</sup> , skills <sup>3</sup> and values required for sustainable design <sup>2</sup> , development and innovation in the field of electrical engineering for socio-economic growth and enabling them for lifelong learning to contribute towards interdisciplinary engineering solutions <sup>4</sup> .	✓	✓	✓	✓

## 5. Knowledge and Attitude (WKs) Profiles

To foster cognitive, psychomotor, and affective development in mathematical, computational, design, and creative thinking, the curriculum incorporates nine knowledge and attitude profiles (WKs) that define the expected learning volume and graduate performance standards.

- **WK1:** A systematic, theory-based understanding of the natural sciences applicable to the discipline and awareness of relevant social sciences.
- **WK2:** Conceptually-based mathematics, numerical analysis, data analysis, statistics and formal aspects of computer and information science to support detailed analysis and modelling; applicable to the discipline.
- **WK3:** A systematic, theory-based formulation of engineering fundamentals required in the relevant engineering discipline.
- **WK4:** Engineering specialist knowledge that provides theoretical frameworks and bodies of knowledge for the accepted practice areas in the engineering discipline; much is at the forefront of the discipline.
- **WK5:** Knowledge, including efficient resource use, environmental impacts, whole-life cost, re-use of resources, net zero carbon, and similar concepts, that supports engineering design and operations in a practice area.
- **WK6:** Knowledge of engineering practice (technology) in the practice areas in the engineering discipline.
- **WK7:** Knowledge of the role of engineering in society and identified issues in engineering practice in the discipline, such as the professional responsibility of an engineer to public safety and sustainable development (Represented by the 17 UN Sustainable Development Goals (UN-SDG))
- **WK8:** Engagement with selected knowledge in the current research literature of the discipline, awareness of the power of critical thinking and creative approaches to evaluate emerging issues.
- **WK9:** Ethics, inclusive behavior and conduct; Knowledge of professional ethics, responsibilities, and norms of engineering practice. Awareness of the need for diversity by reason of ethnicity, gender, age, physical ability, etc. with mutual understanding and respect, and of inclusive attitudes.

## 6. Program Learning Outcomes (PLOs)

Programme Learning Outcomes (PLOs) form a set of individually assessable outcomes that are the components indicative of the graduate's potential to acquire competence to practice at the appropriate level.

- **PLO-1 Engineering Knowledge:** Apply knowledge of mathematics, natural science, engineering fundamentals and Engineering specialization to the solution of complex engineering problems (WK1-WK4).
- **PLO-2 Problem Analysis:** Identify, formulate, conduct research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences and engineering sciences (WK1-WK4).
- **PLO-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 (WK-5).
- **PLO-4 Investigation:** Conduct investigation of complex Engineering problems using research-based knowledge and research methods, including design of experiments, analysis and interpretation of data, and synthesis of information to provide valid conclusions (WK-8).
- **PLO-5 Tool Usage:** Create, select and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modeling, to complex Engineering problems, with an understanding of the limitations (WK-2 and WK-6).
- **PLO-6 The Engineer and the World:** Analyze and evaluate sustainable development impacts to society, the economy, sustainability, health and safety, legal frameworks, and the environment while solving complex engineering problems (WK-1, WK-5, and WK-7).
- **PLO-7 Ethics:** Apply ethical principles and commit to professional ethics and norms of engineering practice and adhere to relevant national and international laws. Demonstrate an understanding of the need for diversity and inclusion (WK-9).
- **PLO-8 Individual and Collaborative Team Work:** Function effectively as an individual, and as a member or leader in diverse and inclusive teams and in multi-disciplinary, face-to-face, remote and distributed settings (WK-9).
- **PLO-9 Communication:** Communicate effectively and inclusively 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, and make effective presentations, taking into account cultural, language, and learning differences (WK-1 and WK-9).
- **PLO-10 Project Management and Finance:** Demonstrate knowledge and understanding of engineering management principles and economic decision making and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments (WK-2 and WK-5).
- **PLO-11 Lifelong Learning:** Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change (WK-8 and WK-9).

## 7. Professional Competence (ECs) Profiles

Engineering Competencies (ECs) are expected to be demonstrated by graduates during their practical experiences, which have been mapped with PLOs to reflect integration in the designed curriculum.

- **EC1 Comprehend and Apply Universal Knowledge:** Comprehend and apply advanced Engineering knowledge of the widely-applied principles underpinning good practices.
- **EC2 Comprehend and Apply Local Knowledge:** Comprehend and apply advanced Engineering knowledge of the widely-applied principles underpinning good practice specific to the jurisdiction of practices.
- **EC3 Problem Analysis:** Define, investigate and analyze complex Engineering problems using data and information technologies where applicable.
- **EC4 Design and Development of Solutions:** Design or develop solutions to complex Engineering problems considering a variety of perspectives and taking account of stakeholder views.
- **EC5 Evaluation:** Evaluate the outcomes and impacts of complex Engineering activities.
- **EC6 Protection of Society:** Recognize the foreseeable economic, social, and environmental effects of complex Engineering activities and seek to achieve sustainable outcomes.
- **EC7 Legal, Regulatory, and Cultural:** Meet all legal, regulatory, and cultural requirements and protect public health and safety in the course of all Engineering activities.
- **EC8 Ethics:** Conduct Engineering activities ethically.
- **EC9 Manage Engineering Activities:** Manage part or all of one or more complex Engineering activities.
- **EC10 Communication and Collaboration:** Communicate and collaborate using multiple media clearly and inclusively with a broad range of stakeholders in the course of all Engineering activities.
- **EC11 Continuing Professional Development (CPD) and Lifelong Learning:** Undertake CPD activities to maintain and extend competences and enhance the ability to adapt to emerging technologies and the ever-changing nature of work.
- **EC12 Judgment:** Recognize complexity and assess alternatives in light of competing requirements and incomplete knowledge. Exercise sound judgement in the course of all complex Engineering activities.
- **EC13 Responsibility for Decisions:** Be responsible for making decisions on part or all of complex Engineering activities.

## 8. Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs) are a set of 17 interlinked global goals established by the United Nations in 2015 as part of the 2030 Agenda for Sustainable Development. They are designed to be a blueprint to achieve a better and more sustainable future for all by addressing various global challenges, including poverty, inequality, climate change, environmental degradation, peace, and justice.



- **SDG 1 No Poverty:** End poverty in all its forms everywhere.
- **SDG 2 Zero Hunger:** End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.
- **SDG 3 Good Health and Well-being:** Ensure healthy lives and promote well-being for all at all ages.
- **SDG 4 Quality Education:** Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- **SDG 5 Gender Equality:** Achieve gender equality and empower all women and girls.
- **SDG 6 Clean Water and Sanitation:** Ensure availability and sustainable management of water and sanitation for all.
- **SDG 7 Affordable and Clean Energy:** Ensure access to affordable, reliable, sustainable, and modern energy for all.
- **SDG 8 Decent Work and Economic Growth:** Promote sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all.
- **SDG 9 Industry, Innovation, and Infrastructure:** Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.
- **SDG 10 Reduced Inequalities:** Reduce inequality within and among countries.
- **SDG 11 Sustainable Cities and Communities:** Make cities and human settlements inclusive, safe, resilient, and sustainable.
- **SDG 12 Responsible Consumption and Production:** Ensure sustainable consumption and production patterns.
- **SDG 13 Climate Action:** Take urgent action to combat climate change and its impacts.
- **SDG 14 Life below Water:** Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.
- **SDG 15 Life on Land:** Protect, restore, and promote sustainable use of terrestrial ecosystems, manage forests sustainably, combat desertification, halt and reverse land degradation, and halt biodiversity loss.
- **SDG 16 Peace, Justice, and Strong Institutions:** Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels.
- **SDG 17 Partnerships for the Goals:** Strengthen the means of implementation and revitalize the global partnership for sustainable development.

## 9. Mapping of Bachelors of Engineering Program with UN SDGs

Description	UN SDGs																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
University vision and mission	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Bachelor of Engineering Curriculum (Engg. and Non-Engg. Courses)			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓		
Final Year Design Project (FYDP)			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓		
Other pre-requisite activities (Internship, Community service, Survey camp, etc.)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Co- and Extra-Curricular Activities	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

## 10. Correlation Matrix PLOs-ECs-WKs-SDGs

A correlation matrix has been established to link Program Learning Outcomes (PLOs) with the corresponding engineering competencies (ECs), knowledge and attitude profiles (WKs), as well as the targeted UN Sustainable Development Goals (SDGs) by 2030.

PLOs	ECs	WKs	SDGs
PLO-1 Engineering Knowledge	EC-1 Comprehend and apply universal knowledge  EC-2 Comprehend and apply local knowledge	WK-1 Natural sciences and awareness of relevant social sciences  WK-2 Mathematics & computing  WK-3 Engineering fundamentals  WK-4 Engineering specialist knowledge	SDG-9
PLO-2 Problem Analysis	EC-3 Problem analysis	WK-1 Natural sciences and awareness of relevant social sciences  WK-2 Mathematics & computing  WK-3 Engineering fundamentals  WK-4 Engineering specialist knowledge	Selected SDGs from SDG - 1 to 17 (relevance as per curriculum)
PLO-3 Design/ Development of Solutions	EC-4 Design and development of solutions	WK-5 Engineering design and operations	SDG-1, 2, 3, 6, 9, 10, 11, 12, 13, 14 (relevance as per curriculum)
PLO-4 Investigation	EC-5 Evaluation	WK-8 Research literature	SDG-9
PLO-5 Tool Usage	EC-3 Problem analysis  EC-5 Evaluation	WK-2 Mathematics & computing  WK-6 Engineering practice	SDG-9

PLO-6 The Engineer and the World	EC-6 Protection of society  EC-7 Legal, regulatory, and cultural	WK1 Natural sciences and awareness of relevant social sciences  WK-5 Engineering design and operations  WK7 Engineering in Society	Selected SDGs from SDG - 1 to 17 (relevance as per curriculum)
PLO-7 Ethics	EC-8 Ethics	WK-9 Ethics, inclusive behavior and conduct	SDG-5 SDG-10 SDG-16
PLO-8 Individual and Collaborative Team work	EC-10 Communication and Collaboration	WK-9 Ethics, inclusive behavior and conduct	SDG-5 SDG-10 SDG-16
PLO-9 Communication	EC-10 Communication and Collaboration	WK-1 Natural sciences and awareness of relevant social sciences  WK-9 Ethics, inclusive behavior and conduct.	SDG-5 SDG-10 SDG-16
PLO-10 Project Management and Finance	EC-9 Manage engineering activities	WK-2 Mathematics & computing  WK-5 Engineering design and operations	SDG-9 SDG-10
PLO-11 Lifelong Learning	EC-11 Continuing Professional Development (CPD) and lifelong learning  EC-12 Judgment  EC-13 Responsibility for decisions	WK-8 Research literature	SDG-3 SDG-4 SDG-8 SDG-9 SDG-12 SDG-13

## 11. Mapping of PLOs to PEOs

Program Learning Outcomes (PLOs)	Program Educational Objectives (PEOs)			
	PEO-1	PEO-2	PEO-3	PEO-4
PLO 1: Engineering Knowledge	✓			
PLO 2: Problem Analysis	✓			
PLO 3: Design / Development of solutions		✓		
PLO 4: Investigation		✓		
PLO 5: Tool Usage			✓	
PLO 6: The Engineer and the World		✓		
PLO 7: Ethics				✓
PLO 8: Individual and Collaborative Team Work			✓	
PLO 9: Communication	✓			
PLO 10: Project Management and Finance			✓	
PLO 11: Lifelong Learning				✓

## 12. Scheme of Studies

Electrical Engineering									
First Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
EE-125	Basic Electrical Engineering	3	1	4	EE-127	Circuit Analysis	3	1	4
EA-128	Functional English	3	0	3	MT-221	Linear Algebra & Ordinary Differential Equations	3	0	3
MT-116	Calculus & Analytical Geometry	3	0	3	EE-164	Computer Programming	2	1	3
EF-101	IT Fundamentals & Applications	2	1	3	ES-108	Ideology and Constitution of Pakistan	2	0	2
ES-206 / ES-209	Islamic Studies / Ethical Behavior	2	0	2	PH-129	Applied Physics	3	0	3
ES-105 / ES-127	Pak. Studies/Pak. Studies (For Foreigners)	2	0	2					
CY-100	Essentials of Chemistry (For Computer Science Background Students)	NC		NC					
<b>Total</b>					<b>Total</b>				
		<b>15</b>	<b>2</b>	<b>17</b>			<b>13</b>	<b>2</b>	<b>15</b>
Second Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
EL-240	Electronic Devices and Circuits	3	1	4	EE-282	Electromagnetic Fields	3	0	3
EE-264	Data Structures and Algorithms	2	1	3	EE-233	Signals and Systems	3	0	3
MT-226	Multi Variable Calculus	3	0	3	CS-220	Digital Logic Design	3	1	4
EA-244	Academic Reading and Writing	3	0	3	EF-200	Community Service	-	-	NC
EE-111	Engineering Drawing & Workshop Practice	0	2	2	CE-109	Engineering Surveying-I	2	1	3
EF-201	Civics and Community Engagement	2	0	2	ME-116	Basic Mechanical Engineering	3	0	3
					EE-348	Electrical Machines I	2	0	2
<b>Total</b>					<b>Total</b>				
		<b>13</b>	<b>4</b>	<b>17</b>			<b>16</b>	<b>2</b>	<b>18</b>
Third Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
EE-396	Digital Signal Processing	3	1	4	EE-362	Power System Analysis	3	1	4
MT-442	Numerical Methods	3	0	3	EE-355	Embedded Systems	2	1	3
EE-224	Instrumentation and Measurement	2	1	3	EA/ES-###	Foreign Language-I	-	-	NC
MG-485	Entrepreneurship	2	0	2	EE-314	Power Electronics	3	1	4
MT-331	Probability and Statistics	3	0	3	EE-359	Electrical Power Distribution and Utilization	3	1	4
EE-347	Electrical Machines II	2	1	3	EE-265	Artificial Intelligence	2	1	3
<b>Total</b>					<b>Total</b>				
		<b>15</b>	<b>3</b>	<b>18</b>			<b>13</b>	<b>5</b>	<b>18</b>
Final Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs			Course Code	Course Title	Credit Hrs		
		Th	Pr	Total			Th	Pr	Total
EE-457	Electrical Power System Protection	3	1	4	MG-482	Organizational Behaviour	3	0	3
EE-401	*Electrical Engineering Design Project	0	3	3	CS-439	Computer Communication Networks	2	0	2
EE-352	Electrical Power Transmission	3	0	3	EE-401	Electrical Engineering Design Project	0	3	3
EE-375	Feedback Control Systems	3	1	4	EE-414	Power Generation	3	0	3
EA/ES ###	Foreign Language-II	-	-	NC	EF-305	Engineering Economics and Management	3	0	3
TC-306	Communication Systems	3	0	3	EF-309	Occupational Safety and Health	1	0	1
<b>Total</b>					<b>Total</b>				
		<b>12</b>	<b>5</b>	<b>17</b>			<b>12</b>	<b>3</b>	<b>15</b>

\* Duration one academic year: Requires literature survey and preliminary work during this Semester

### 13. Mapping of Curriculum to PLOs

Electrical Engineering Courses		Program Learning Outcomes (PLOs)												
		PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO-8	PLO-9	PLO-10	PLO-11		
First Year	Fall	EE-125 Basic Electrical Engineering	C3	C4, P3										
		EA-128 Functional English								A3, C2			C6	
		MT-116 Calculus & Analytical Geometry		C3, C3, C3										
		EF-101 IT Fundamentals & Applications	C2				C3, C3							
		ES-206 / ES-209 Islamic Studies / Ethical Behavior							C2, C2					
		ES-105/ ES-127 Pak. Studies/Pak. Studies (For Foreigners)						C2, C2						
	Spring	EE-127 Circuit Analysis	C4	C4			P3							
		MT-221 Linear Algebra & Ordinary Differential Equations	C2	C3										
		EE-164 Computer Programming	C3				C3, P3							
		ES-108 Ideology and Constitution of Pakistan						C2, C2						
		PH-129 Applied Physics	C2	C3, C3										
Second Year	Fall	EL-240 Electronic Devices and Circuits	C3	C4		P3								
		EE-264 Data Structures and Algorithms			C4, P3		C4							
		MT-226 Multi Variable Calculus	C2	C3										
		EA-244 Academic Reading and Writing								C2, C3			C6	
		EE-111 Engineering Drawing & Workshop Practice			P3		P3							
		EF-201 Civics and Community Engagement						C2					A3	
	Spring	EE-282 Electromagnetic Fields	C4, C4											
		EE-233 Signals and Systems	C4	C4										
		CS-220 Digital Logic Design	C2	C3	P3					A3				
		EF-200 Community Service						A3					A2	
		CE-109 Engineering Surveying – I	C2	C3			P3							
		ME-116 Basic Mechanical Engineering	C2	C4										
		EE-348 Electrical Machines – I		C3, C4										

Electrical Engineering Courses		Program Learning Outcomes (PLOs)											
		PLO-1	PLO-2	PLO-3	PLO-4	PLO-5	PLO-6	PLO-7	PLO-8	PLO-9	PLO-10	PLO-11	
Third Year	Fall	EE-396 Digital Signal Processing		C4, C4			P3					A4	
		MT-442 Numerical Methods	C2	C3, C3									
		EE-224 Instrumentation and Measurement	C3		C5		P3						
		MG-485 Entrepreneurship							C3				C2
		MT-331 Probability and Statistics	C2	C4									
		EE-347 Electrical Machines II		C3	P3								
	Spring	EE-362 Power System Analysis		C4	C5	P3					A4		
		EE-355 Embedded Systems	C3		C5		P3					A4	
		EE-314 Power Electronics			C5, P3	C6					A4		
		EE-359 Electrical Power Distribution and Utilization			C6	C5, P3			A3				
		EE-265 Artificial Intelligence			C5		C3, P3		A3				
		EA-### Foreign Language - I											
Fourth Year	Fall	EE-401 Electrical Engineering Project		C	C			C	A	A	A	A	
		EE-457 Electrical Power System Protection			C6	C5, P3					A3		
		EE-352 Electrical Power Transmission		C4		C5					A3		
		EE-375 Feedback Control Systems		C4	C5		P3					A3	
		TC-306 Communication Systems	C3	C4									
		EA-### Foreign Language - II											
	Spring	EE-401 Electrical Engineering Project		C	C				A	C, AC, A	A	C	C
		MG-482 Organizational Behavior							C3				C2, A3
		CS-439 Computer Communication Networks	C2	C3									
		EE-414 Power Generation	C4	C6						A3			
		EF-305 Engineering Economics and Management						C3	C6			C4	
		EF-309 Occupational Safety and Health						C2					A3
		Internship	C	C				A	A	A	A		

## 14. Key Performance Indicators (KPIs)

		<b>Evaluation Tool</b>	<b>KPI</b>	<b>Data Collection Frequency</b>	<b>Analysis Frequency</b>
<b>PEO</b>	Programme	<ul style="list-style-type: none"> <li>▪ Employer Feedback Survey</li> <li>▪ Alumni Feedback Survey</li> <li>▪ Employment Statistics</li> </ul>	50% of the Survey Form responses must attain a score of 3 or above on a scale of 1 to 5, and 50% of the graduates must be employed and/or engaged in higher studies.	Every Year	4 years from graduation
<b>PLO</b>	Student	<ul style="list-style-type: none"> <li>▪ CLO scores of the student in the mapped course(s)</li> </ul>	Each PLO must be attained in at least 50% of the respective mapped course(s), with an average score of at least 60%.	Every Semester	Every Semester
	Course	<ul style="list-style-type: none"> <li>▪ PLO scores of all the students in the mapped course</li> </ul>	At least 60% of the students must attain that PLO	Every Semester	Every Semester
	Programme	<ul style="list-style-type: none"> <li>▪ Final PLO attainment statistics of all the courses including FYDP</li> <li>▪ Internship Feedback Form</li> <li>▪ Exit Survey</li> </ul>	At least 60% of the mapped courses must attain the PLO and at least 55% of the students/ responses must attain a score of 3 or above on a scale of 1 to 5.	At graduation	At graduation
<b>CLO</b>	Student	<ul style="list-style-type: none"> <li>▪ Course work</li> </ul>	The student must obtain at least 55% average percentage score from all attempts.	Every Semester	Every Semester
	Course	<ul style="list-style-type: none"> <li>▪ CLO scores of all students in the course</li> </ul>	At least 60% of the students must attain that CLO	Every Semester	Every Semester

## 15. Continuous Quality Improvement (CQI)

The following table shows the post KPI evaluation actions, severity-wise, as outlined in the Manual of Uniform OBE Framework.

	PEO CQI	PLO CQI			CLO CQI	
	Program KPI	Student KPI	Course KPI	Programme KPI	Student KPI	Course KPI
<b>KPIs Achieved</b>	▪ No Action	▪ No Action	▪ No Action	▪ No Action	▪ No Action	▪ No Action
<b>KPIs Not Achieved</b>	1. Review of curriculum strategies. 2. Review of assessment methods. 3. Review of the relevant KPIs. 4. Review of PEOs. 5. Revisions implemented.	1. Warning through the progressive attainment sheet. 2. Student counselling.	1. Review of teaching and learning process. 2. Review of CLOs assessment methods. 3. Review of CLO-PLO mapping and the relevant KPIs. 4. Review of curriculum design. 5. Revisions implemented.	1. Review of teaching and learning process. 2. Review of PLOs assessment methods. 3. Review of Course-PLO mapping and the relevant KPIs. 4. Review of curriculum design. 5. Revisions implemented.	1. Student provided further chances through direct assessment tools. 2. Student counselling.	1. Review of CLO assessment methods. 2. Review of CLOs and taxonomy levels. 3. Review of students' course feedback. 4. Review of CLO KPIs. 5. Faculty advice by Departmental OBE Cell. 6. Faculty training.

The following figure shows the overall OBE framework for an Engineering Programme as outlined in the Manual of Uniform OBE Framework.

