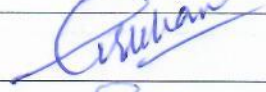




NED University of Engineering and Technology

MANUAL **of** **Uniform OBE Framework** **for all Engineering Disciplines**

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Preamble

Effective implementation of OBE system not only plays a key role in maintaining and improving quality of engineering education in any higher education institute, but has also become crucial for accreditation of the institutes by corresponding engineering regulatory bodies. For effective implementation, monitoring and improvement of the system, same standardized practices must be followed across all engineering disciplines of the University.

In June 2021 and July 2021, Pakistan Engineering Council (PEC) Teams visited University for Level-II Accreditation and Re-accreditation of eighteen (18) Engineering Programmes offered by the University. As a result, all the Engineering Programmes in the University are now accredited on Level-II.

While reviewing the comments of the Conveners and Programme Evaluators (PEVs) during the visits and evaluation reports after the visits, it was observed that although all the Engineering Programs are accredited on Level-II but implementation of OBE system needed to be considered as it should be consistent throughout the University. A sub-committee, comprising of following faculty members, was constituted through letter no. DR (Estab)/(409)/7114, dated 31-08-2021:

1. **Prof. Dr. Asad-ur-Rehman Khan** - Dean (CPL), Convener
2. **Prof. Dr. Abdul Jabbar Sangi** - Professor, CED, Co-Convener
3. **Dr. Muhammad Sohail** - Professor, MMD, Member
4. **Dr. Farrukh Arif** - Associate Professor, CED, Member
5. **Dr. Shenela Naqvi** - Associate Professor, TXD, Member
6. **Dr. Maria Waqas** - Assistant Professor, CSD, Member

In response, the constituted sub-committee collected the required Outcome Based Education (OBE) system data from all related departments, analyzed the practices being followed and after thorough deliberation, finalized the recommendations for university-wide standardization of OBE framework. This manual proposes guidelines for implementation of uniform OBE system practices for all engineering disciplines offered at NED University of Engineering and Technology.

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1 Vision and Mission Statements, Programme Educational Objectives (PEOs) and Programme Learning Outcomes (PLOs)

- a. Vision statement of a department shall be defined for the department in line with the Vision of the University.
- b. Mission statement of a department shall be defined for the programme(s) offered by the department and not the department itself.
- c. The PEOs shall encompass all the key attributes of the PLOs.
- d. Number of PEOs shall range from 3 to 5.
- e. Each PLO must be mapped to at least six (6) different courses.

2 Key Performance Indicators (KPIs)

- a. The KPI statement shall clearly specify the complete evaluation criteria.
- b. A minimum criterion for KPI evaluation and attainment, at individual as well as cohort levels, shall be made uniform for all engineering disciplines.

2.1 PEO KPIs

- a. PEO KPIs shall be evaluated for each PEO separately.
- b. PEO KPI statements shall be defined at programme level.

Programme Level

- c. PEO KPIs shall be evaluated for a batch on the following data:
 - i. Data collected from employer feedback surveys.
 - ii. Data collected from alumni feedback surveys.
 - iii. Data collected from employers about employment statistics of the graduates.
- d. In survey forms, the PEO KPI statements shall specify the criteria in the form of scales from 1 to 5.
- e. The data collection shall be done annually and KPI evaluation for a batch shall be carried out after 4 years from graduation.
- f. To attain a PEO, 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.

2.2 PLO KPIs

- a. PLO KPIs shall be evaluated for each PLO separately.
- b. PLO KPI statements shall be defined at three levels: student, course and programme.

Student Level

- c. At student level, the PLO KPIs shall be evaluated on CLO scores of the students in the respective mapped course and FYDP.
- d. If a PLO is mapped to more than one CLOs in a single course then the scores of the linked CLOs shall be averaged to give one score for that PLO.
- e. The data shall be collected and analyzed at the end of each semester.
- f. To attain a PLO in a course at student level, the student shall be required to obtain at least 50% average score in the CLOs mapped to the PLO in that particular course.
- g. For final PLO attainment at the time of graduation, each PLO must be attained in at least 50% of the respective mapped courses, with an average score of least 50%. This score shall be reflected in PLO attainment sheet (see section 3).

Course Level

- h. At the course level, the PLO KPIs shall be evaluated on PLO scores of all students in the respective mapped course(s).
- i. The data shall be collected and analyzed at the end of each semester.
- j. To attain a PLO at course level, at least 50% of the students must attain that particular PLO.

Programme Level

- k. At programme level the PLO KPI shall be evaluated based upon the following data:
 - i. Final PLO attainment statistics of all the courses including FYDP at the time of graduation.
 - ii. Data collected from internship feedback forms.
 - iii. Data collected from Exit surveys.
- l. In survey forms, the PLO KPI statement shall specify the criteria in the form of scales from 1 to 5.
- m. The data for a particular batch shall be collected and analyzed at the time of graduation.
- n. To attain a PLO at programme level, at least 50% of the mapped courses must attain the respective PLO and at least 50% of the students/responses must

attain a score of 3 or above on a scale of 1 to 5.

2.3 CLO KPIs

- a. CLO KPIs shall be evaluated for each CLO separately.
- b. CLO KPI statements shall be defined at two levels: student and course.

Student Level

- c. A CLO at student level shall be evaluated on multiple attempts during the course work.
- d. All attempts made available in a course for a particular CLO shall comply with the corresponding taxonomy level.
- e. Number of attempts for each CLO shall be at least three (3) for Cognitive and Psychomotor domains and two (2) for Affective domain. A CLO pertaining to cognitive domain shall include the compulsory final examination attempt.
- f. For CLO attainment at student level, the student must obtain at least 50% average percentage score from all attempts. The same score shall be counted for the corresponding PLO score evaluation.

Course Level

- g. At course level, the CLO KPI shall be evaluated on CLO scores of all students in the particular course.
- h. The data shall be collected and analyzed at the end of each semester.
- i. To attain a CLO at course level, at least 50% of the students must attain that respective CLO.

All KPIs along with related information have been summarized in Table-1.

3 PLO Attainment Sheet

- a. A PLO attainment sheet shall only be issued to the student upon graduation by the University.
- b. However, at the end of each semester, a progressive PLO attainment sheet may also be made available for the students.
- c. The percentage score of PLO in each course shall be reflected in the PLO attainment sheet. Final weighted average score in that PLO shall be displayed at the end of each PLO column. This final average score will reflect the attainment level of that PLO by any student.
- d. **Appendix A PLO Attainment Sheet** contains the template for the proposed format of the PLO attainment sheet.

Table 1: PEO, PLO, CLO KPIs evaluation and attainment criteria summary.

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

4 Student Internships

- Supervised internship shall be made part of the regular curriculum as a zero-credit course.
- Every department shall nominate an Internship Coordinator to monitor the related activity in coordination with Directorate of Industrial Liaison (DIL).
- Duration of internship shall be indicated on the Survey Form.
- A student shall carryout at least 8 weeks of supervised internship, with single internship of not less than four (4) weeks duration.
- In case of more than one eligible internships by a student, the best internship feedback score shall be counted.

5 Forms Pertaining to Internship Feedback, Exit Survey, Employer Survey and Alumni Survey

- a. The designed survey forms shall be simple and easy to understand and should not take too much time of the person filling the form.
- b. PEO / PLO mapping of a question should be clearly indicated.
- c. One criteria / question should map to only one PEO / PLO.
- d. Evaluation scales for each criterion should be consistent in all survey forms.
- e. Comments section should be added to get any additional feedback.
- f. The survey form can be made available online through Google Forms.

5.1 Internship Feedback Form

- a. The Internship Feedback Form should be made uniform for all the departments.
- b. **Appendix B.1 Internship Feedback Form** contains the Internship Survey Form as proposed by the Committee.

5.2 Exit Survey Form

- a. The Exit Survey Form should be uniform for all the departments.
- b. **Appendix B.2 Exit Survey Form** contains the exit survey form as proposed by the Committee.

5.3 Alumni Survey Form

- a. The Alumni Survey Form should be uniform for all the departments, however, PEO mappings of questions should be program specific.
- b. **Appendix B.3 Alumni Survey Form** contains the alumni survey form as proposed by the Committee.

5.4 Employer Survey Form

- a. The Employer Survey form should be made uniform for all the departments, however, PEO mappings of questions should be program specific.
- b. **Appendix B.4 Employer Survey Form** contains the employer survey form as proposed by the Committee.

6 Final Year Design Project (FYDP) Management and Assessment System

6.1 FYDP Management System

- a. The Standard Operating Procedures (SOP) as proposed by Quality Enhancement Cell (QEC) should be adopted with minor revisions as indicated in:
Appendix C.1 FYDP SOP Document,
Appendix C.2 FYDP Proposal Form and
Appendix C.3 - Activity Plan for FYDP.
- b. Rubrics for FYDP assessment are proposed in the following sub-section, which shall replace the rubric template proposed by QEC.
- c. Remaining FYDP SOP documents as proposed by QEC shall be adopted without any change. These are contained in the following appendices:
Appendix C.4 - FYDP List
Appendix C.5 - Application for Change of FYDP Title
Appendix C.6 - Attendance of FYDP Group
Appendix C.7 - FYDP Report Guidelines

6.2 FYDP Assessment

- a. FYDP assessment shall only be conducted through pre-defined rubrics, and not by any other means.
- b. FYDP shall span over last two semesters of the undergraduate studies, carrying a total of 200 marks.
- c. The assessment process proposed in this section maps OBE assessment of the FYDP to the GPA marking system, rationally distributing it over the two semesters.
- d. Preliminary information about FYDP credit hours and marks distribution shall be as follows:

Credit hours:	3+3 (for two semesters)
Marks:	200
Semester 1:	(3 Credit Hours) 80 Marks
Semester 2:	(3 Credit Hours) 120 Marks
Mapped PLOs:	i. PLO-2 Problem Analysis ii. PLO-3 Design / Development of Solutions iii. PLO-7 Environment and Sustainability iv. PLO-8 Ethics v. PLO-9 Individual and Teamwork vi. PLO-10 Communication vii. PLO-11 Project Management viii. PLO-12 Lifelong Learning

6.3 Semester-1 (7th/Fall Semester) Assessment

- a. Semester-1 (7th/Fall Semester) assessment of FYDPs shall be done as per the following guidelines:

Mapped PLOs: PLO-2, PLO-3, PLO-7, PLO-8, PLO-9, PLO-10, PLO-11

Total marks: 80 (Sessional 32, Final 48)

Outcomes / i. Active participation

Criteria: ii. Proposal: Title, problem statement, objectives

iii. Literature Review and References

iv. Methodology

v. Timeline

vi. Progress report and Presentation

Evaluation:	Item	Weightage	Responsible Person
	i. Project Proposal	6% (12 Marks)	FYDP Steering Committee
	ii. Semester Progress	10% (20 Marks)	Supervisor
	iii. Semester-1 Evaluation (Progress Report and Presentation)	24% (48 Marks)	Supervisor and Examiner

- b. The following appendices contain the related proposed evaluation rubrics:

Appendix D.1 - Rubric for Project Proposal

Appendix D.2 - Rubric for Semester 1 Progress

Appendix D.3 - Rubric for Semester 1 Evaluation

6.4 Semester-2 (8th/Spring Semester) Assessment

- a. Semester-2 (8th/Spring Semester) assessment of FYDPs shall be done as per the following guidelines:

Mapped PLOs:	PLO-2, PLO-3, PLO-8, PLO-9, PLO-10, PLO-11, PLO-12		
Total marks:	120 (Sessional 48, Final 72))		
Outcomes /	i. Active participation		
Criteria:	ii. Conduct experiments/ modelling/ study		
	iii. Results, analysis and Discussion		
	iv. Conclusions and Recommendations		
	v. Final Report and Presentation		
Evaluation:	Item	Weightage	Responsible Person
	i. Semester Progress	24% (48 Marks)	Supervisor and FYDP Coordinator
	ii. Final Report	16% (32 Marks)	Supervisor and Examiner
	iii. Semester 2 Evaluation (Progress Demonstration and Presentation)	20% (40 Marks)	Supervisor, Examiner and Chairperson

- b. The following appendices contain the related proposed evaluation rubrics:

Appendix D.4 - Rubric for Semester 2 Progress

Appendix D.5 - Rubric for Final Report

Appendix D.6 - Rubric for Semester 2 Final Evaluation

- c. **Appendix D.7 FYDP Consolidated Grading Sheet** contains the final consolidated grading sheet for the FYDP.

7 Psychomotor Domain Evaluation and Assessment

- a. Psychomotor domain CLO assessment shall only be conducted through pre-defined rubrics, and not by any other means.
- b. A single rubric shall be defined per one level of taxonomy, which shall be applicable to all practical credits in different courses as per mapped level of taxonomy throughout the programmes scheme of study.
- c. The blooms taxonomy levels used for psychomotor domain will be as per Table-2.

Table 2: Psychomotor domain categories, definitions and alternate verbs.

Psychomotor Domain (doing, skills)					Organization
Perception	Set	Guided Response	Mechanism	Complete Overt Response	Adaption
	Definition: Is mentally, emotionally, and physically ready to act.	Definition: Imitates and practices skills, often in discrete steps.	Definition: Perform acts with increasing efficiency, confidence, and proficiency.	Definition: Performs automatically.	Definition: Adapts skill sets to meet problem situation.
	Sample Verbs: <ul style="list-style-type: none">• detect• hear• listen• observe• perceive• recognize• see• sense• smell• taste• view• watch	Sample Verbs: <ul style="list-style-type: none">• achieve a posture• assume a body stance• establish a body position• place hands, arms, etc.• position the body• sit• stand• station	Sample Verbs: <ul style="list-style-type: none">• copy• duplicate• imitate• manipulate with guidance• operate under supervision• practice• repeat• try	Sample Verbs: <ul style="list-style-type: none">• act habitually• advance with assurance• control• direct• excel• guide• maintain efficiency• manage• master• organize• perfect• perform automatically• proceed	Sample Verbs: <ul style="list-style-type: none">• adapts• recognizes• alters• revises• changes
	Definition: Senses cues that guide motor activity.	Definition: Imitates and practices skills, often in discrete steps.	Definition: Perform acts with increasing efficiency, confidence, and proficiency.	Definition: Performs automatically.	Definition: Adapts skill sets to meet problem situation.
</					

- d. Maximum taxonomy level for Psychomotor rubric in any engineering programme shall be limited to level 3 (P3) as per Blooms Taxonomy level.
- e. A separate rubric shall be designed for each of the three levels, and a higher-level rubric shall be inclusive of all prior levels skill sets.
- f. The following appendices contain the related proposed evaluation rubrics:
 - Appendix E.1 Rubric for Psychomotor Level 1**
 - Appendix E.2 Rubric for Psychomotor Level 2**
 - Appendix E.3 Rubric for Psychomotor Level 3**
- g. Psychomotor assessment shall be performed by the lab teacher during the performance of the practical. Ideally all, but at least half of the exercises/practical, related to taxonomy level, shall be assessed during the semester. All students must be assessed for same practical sessions to provide multiple attempts to the student.
- h. For courses involving use of software, a separate Software Use Rubric shall be defined. This rubric shall also be common to the needs of a particular engineering curriculum; however, same rubric shall be used for all software related courses in order to ensure uniformity of assessment in an engineering programme. The rubrics shall be defined by the Departmental OBE Cell, in consultation with

subject experts (wherever needed), and approved by the respective BoS. A sample rubric for software-based lab work is given in Table-3.

Table 3: Sample software use rubric.

Software Use Rubric					
Criterion	Level of Attainment				
	Below Average (1)	Average (2)	Good (3)	Very Good (4)	Excellent (5)
Effective use of input devices for software interface/application	Not able to use mouse and keyboard effectively.	Rarely uses mouse and keyboard effectively.	Occasionally uses mouse and keyboard effectively.	Often uses mouse and keyboard effectively.	Handles mouse and keyboard effectively.
Identification and usage of correct of software menus	Cannot use software menus correctly.	Rarely uses software menus correctly.	Occasionally uses software menus correctly.	Often uses software menus correctly.	Uses software menus correctly and effectively.
Skills to use basic and advanced commands	Not able to use any commands.	Uses basic command from graphical interface icons.	Uses advanced commands with help.	Uses advanced commands without help.	Exhibits full use of all commands.
Adherence to safety procedures	Does not adhere to equipment safety procedure.	Slightly adheres to equipment safety procedure.	Somewhat adheres to equipment safety procedure.	Moderately adheres to equipment safety procedure.	Fully adheres to equipment safety procedure.
Equipment handling and safety	Does not handle equipment with required care and safety.	Rarely handle equipment with required care and safety.	Occasionally handle equipment with required care and safety.	Often handle equipment with required care and safety.	Handles equipment with required care and safety.

- i. The OBE assessment process shall be mapped to 50 marks as shown in Table-4.

Table 4: Mapping of OBE psychomotor assessment.

Assessment	Mode of Assessment	Marks	Total Marks
Sessional	Performance-based rubric evaluation	25	30
	Miscellaneous (attendance, workbook, etc.)	05	
Final	Performance-based rubric evaluation	10	20
	Open ended lab	10	

8 Affective Domain Evaluation and Assessment

- Affective domain CLO assessment shall only be conducted through pre-defined rubrics, and not by any other means.
- For Affective domain, one rubric shall be defined per one level of taxonomy. The rubric will be applicable to different assessments in different courses as per mapped level of taxonomy throughout the programmes scheme of study.
- Taxonomy levels for Affective rubric in any engineering programme shall be limited to A3 and A4 only as per Blooms Taxonomy level. This is because, A-5 level can be evaluated only during professional practice during the industry, while A-3 is typical level attained in course based/classroom-based learning during undergraduate education and A-4 is the level that can be attained with a combination of classroom learning and mentored projects/activities.
- A-3 will include A-1 and A-2 attributes, while, A-4 level is inclusive of A-1, A-2, A-3 attributes.
- The blooms taxonomy levels used for affective domain will be as per Table-5.

Table 5: Affective domain categories, definitions and alternate verbs.

Affective Domain (feelings, attitudes)				
		Valuing	Organization	Internalizing
Receiving	Responding	Definition: Attached value or worth to something.	Definition: Conceptualizes the value and resolves conflict between it and other values.	Definition: Integrates the value into a value system that controls behavior.
Definition: Selectively attends to stimuli. Sample Verbs: <ul style="list-style-type: none"> accept acknowledge be aware listen notice pay attention tolerate 	Definition: Responds to stimuli. Sample Verbs: <ul style="list-style-type: none"> agree to answer freely assist care for communicate comply conform consent contribute cooperate follow obey participate willingly read voluntarily respond visit volunteer 	Sample Verbs: <ul style="list-style-type: none"> adopt assume responsibility behave according to choose commit desire exhibit loyalty express initiate prefer seek show concern show continual desire to use resources to 	Sample Verbs: <ul style="list-style-type: none"> adapt adjust arrange balance classify conceptualize formulate group organize rank theorize 	Sample Verbs: <ul style="list-style-type: none"> act upon advocate defend exemplify influence justify behavior maintain serve support

- Following six PLOs have been identified where affective assessment is applicable:
 - PLO-6 The Engineer and Society

- ii. PLO-7 Environment and Sustainability
 - iii. PLO-8 Ethics
 - iv. PLO-9 Individual and Teamwork
 - v. PLO-10 Communication
 - vi. PLO-12 Lifelong Learning
- g. A separate rubric has been proposed for each of the two levels per identified PLO. The following appendices contain the related proposed evaluation rubrics:
- Appendix F.1 Rubric for Affective Level A3, PLO-6 The Engineer and Society**
 - Appendix F.2 Rubric for Affective Level A4, PLO-6 The Engineer and Society**
 - Appendix F.3 Rubric for Affective Level A3, PLO-7 Environment and Sustainability**
 - Appendix F.4 Rubric for Affective Level A4, PLO-7 Environment and Sustainability**
 - Appendix F.5 Rubric for Affective Level A3, PLO-8 Ethics**
 - Appendix F.6 Rubric for Affective Level A4, PLO-8 Ethics**
 - Appendix F.7 Rubric for Affective Level A3, PLO-9 Individual and Team Work**
 - Appendix F.8 Rubric for Affective Level A4, PLO-9 Individual and Team Work**
 - Appendix F.9 Rubric for Affective Level A3, PLO-10 Communication**
 - Appendix F.10 Rubric for Affective Level A4, PLO-10 Communication**
 - Appendix F.11 Rubric for Affective Level A3, PLO-12 Lifelong Learning**
 - Appendix F.12 Rubric for Affective Level A4, PLO-12 Lifelong Learning**
- h. Affective domain assessment shall only be performed by the course teacher. At least two assessments shall be conducted during the semester in order to provide multiple chances. Each student shall be evaluated separately.
- i. As a guideline, Table-6 provides the meanings for taxonomy verbs for different type of affective domain assessment tools.

Table 6: Guidelines for affective domain assessment tools and evaluation.

Taxonomy Verbs	Affective Domain Assessment Tools					
	Presentation	Group or Individual Discussion	Interview	Field visit	In-Class Case Study/ Scenario	Self-Reporting
Acknowledge	Listening to questions	Listening to others opinion	Listening to questions	Listening to demonstration	Identifying the objectives of case	Identifying a self-matter/ issue
Practice	Willingly responding to questions	Willingly responding in context of discussion	Willingly responding to questions	Willingly asking/ responding to questions	Stating the case with context	Willingly state details related to the matter/ issue
Value	Expressive Quality of reasoning, arguments, and thoughts	Expressive quality of reasoning, arguments, and thoughts	Expressive Quality of reasoning, arguments, and thoughts	Seriousness during the visit.	Expressive Quality of reasoning, arguments, and thoughts	Expression of strength/ weakness or positive/ negatives of the issue
Display	Body language and behavior	Respectful behavior to others' opinion	Body language and behavior	Body language and behavior	Respectful behavior to others' opinion	Behavior and willingness towards resolving the issue

9 Evaluation of Complex Engineering Problems and Activities

- Students shall be provided adequate exposure to Complex Engineering Problems (CEPs) and Complex Engineering Activities (CEAs) throughout the duration of the programme.
- CEPs and CEAs shall cover the desired attributes as listed in Table-7 and Table-8 (as per PEC Manual of Accreditation 2019).
- Preferably, all the core engineering courses shall include CEPs.
- CEAs comprising mainly Open Ended Labs (OELs) and Problem Based Learning (PBL) shall be included in all the courses having practical.

Table 7: Range of Complex Problem Solving.

Attribute	Complex Problem
Preamble	Engineering problems which cannot be resolved without in-depth engineering knowledge, and have some or all of the characteristics listed below:
Range of conflicting requirements	Involve wide-ranging or conflicting technical, engineering or other issues.
Depth of analysis required	Have no obvious solution and require abstract/critical thinking, originality in analysis to formulate suitable models.
Depth of knowledge required	Requires research-based knowledge much of which is at, or informed by, the forefront of the professional discipline and which allows a fundamental-based, first principles analytical approach.
Familiarity of issues	Involve infrequently encountered issues.
Extent of applicable codes	Are outside problems encompassed by standards and codes of practice for professional engineering.
Extent of stakeholder involvement and level of conflicting requirements	Involve diverse group of stakeholders with widely varying needs.
Consequences	Have significant consequences in a range of context.
Interdependence	Are high level problems including many component parts or sub-problems.

Table 8: Range of Complex Engineering Activities.

Attribute	Complex Problem
Preamble	Complex activities mean (engineering) activities or projects that have some or all of the following characteristics listed below:
Range of resources	Involve the use of diverse resources (for this purpose, resources include people, money, equipment, materials, information and technologies).
Level of interaction	Require resolution of significant problems arising from interactions between wide ranging or conflicting technical, engineering or other issues.
Innovation	Involve creative use of engineering principles and research-based knowledge in novel ways.
Consequences to society and the environment	Have significant consequences in a range of contexts, characterized by difficulty of prediction and mitigation.
Familiarity	Can extend beyond previous experiences by applying principles-based approaches.

- e. CEPs/ CEAs shall be properly defined. Description may include at-least the following:
 - i. Problem description
 - ii. Constraints/ Assumptions
 - iii. Identification of areas where use of computational/ modern tool is required.
 - iv. Expected outcomes

- f. CEPs/ CEAs shall be evaluated through pre-defined rubrics, and not by any other means. The criteria defined in the rubric shall cover the attributes selected for the activity from Table-7 and Table-8. Explicit mapping shall be provided.
- g. The rubric shall be communicated to the students at the time of assignment of the complex engineering activity.
- h. The rubric shall have well defined criteria and levels of attainments/scales. **Appendix G.1 Rubric for Complex Engineering Activity** contains template for evaluation rubric for complex engineering activity. A sample rubric for the course CE-320 Reinforced Concrete Design-I is given in Table-9.
- i. Evidence of exposure to complex engineering problems/ activities shall be provided in the respective Course File, including statement of CEP/CEA and rubric based evaluation.

Table 9: Sample evaluation rubric for complex engineering activity.

Rubric for Complex Engineering Activity					
CE-320 Reinforced Concrete Design-I					
Criterion	Level of Attainment				
	Below Average (1)	Average (2)	Good (3)	Very Good (4)	Excellent (5)
Architectural Drawings	Architectural drawings are of poor quality. No use of AutoCad.	Architectural drawings cover basic details. Inadequate use of AutoCad.	Architectural drawings cover the required details with adequate use of AutoCad.	Architectural drawings provide full details with sections and elevations using AutoCad.	Architectural drawings are prepared fulfilling the requirements of a professional drawing.
Structural Analysis	No structural analysis/ very limited analysis performed.	Basic structural analysis performed. No use of software as per requirement.	Structural analysis with reasonable details using analysis software/ tools.	Detailed structural analysis using software.	Advanced structural analysis with complete details using software.
Structural Design	No design calculations provided.	Basic design calculations provided.	Design calculations provided as per requirement.	Detailed design calculations provided as per requirement.	Detailed design calculations as per requirement for all structural members.
Structural Drawings/ Detailing	Structural detailing drawings are of poor quality. No use of Autocad.	Structural Detailing cover basic details. Inadequate use of Autocad.	Structural Detailing cover the required details with adequate use of Autocad.	Structural Detailing full details with sections and elevations using Autocad.	Structural Detailing are prepared as per professional requirement.
Timely Submission	No	---	---	---	Yes
Quality of Report	Covers no detail.	Covers limited details.	Cover required details.	Covers full details.	Presented in professional style.

10 Course Files

- a. A course file shall be maintained for every course by the respective course teacher during the semester. The course folder shall be created for every course at the start of the semester and placed in the departmental OBE Cell (DOBEC). The course teacher shall keep updating the course file as the semester progresses.
- b. At the end of the semester, the course file shall be submitted to the Departmental OBE Cell.
- c. **Appendix H.1 Checklist for Course File** contains the list of documents to be attached in the course file. The same shall be used as the cover page of the course file.
- d. For common courses offered by non-engineering departments and interdisciplinary courses offered by engineering departments, the Chairperson of the respective departments are required to ensure that the course files of the offered courses, from their respective departments are maintained as defined in 10 (a) and submitted at the end of semester (especially for visiting faculty).

11 Continuous Quality Improvement (CQI)

- a. A Central OBE Cell (COBEC) shall be established to look after the matters of university-wide OBE implementation.
- b. A Departmental OBE Cell (DOBEC) shall be established in all engineering departments. DOBEC shall be housed in a permanent exhibit room in each department and will serve as DOBEC Secretariat.
- c. DOBEC shall comprise of a four (4) members committee, including the Chairperson as the committee head, an OBE Coordinator and two faculty members. The information shall be communicated to the COBEC through a memo. Any change in members of the committee shall also be reported to the COBEC. The OBE Coordinator shall be responsible for coordinating all OBE related activities with the COBEC.
- d. Other faculty members shall be assigned responsibilities by the DOBEC as per requirements.
- e. All non-engineering departments shall nominate a faculty member as an OBE Coordinator to look after OBE related activities for the being courses offered by their respective department in engineering disciplines. The information shall be communicated to the COBEC through a memo. Any change shall also be reported to the COBEC.
- f. Vision and Mission statements, and Programme Educational Objectives (PEOs) shall be formulated by the respective Industrial Advisory Board (IAB) and the DOBEC, and shall be approved by the respective Board of Studies (BoS).

- g. Graduate attributes as defined by PEC, shall be adopted as Program Learning Outcomes (PLOs) by the DOBEC and the respective BoS.
- h. Any additional PLO shall be formulated by the DOBEC and approved by the respective BoS. PEOs shall be adjusted accordingly to reflect the new PLO.
- i. CLOs shall be formulated by the DOBEC in coordination with the program faculty and shall be approved by the respective BoS.
- j. CLOs for non-engineering courses shall be adopted as provided by the respective administering department. The course profiles for common non-engineering courses shall remain uniform in all engineering disciplines.
- k. The department shall get the framework approved by the Academic Council through respective Board of Faculty (BoF).
- l. Once approved, Academic Council may delegate the authority for any subsequent amendments in Vision statement, Mission statement, PEOs, PLOs and CLOs as follows:
 - i. Vision statement, Mission statement and PEOs to the respective BoF, and
 - ii. PLOs and CLOs to the respective BoS.
- m. Every department shall maintain a control document of the framework including Vision and Mission statements, PEOs, PLOs, and CLO Course profiles, the copy of which shall reside with the COBEC. **Appendix I.1 Course Profile** contains the format for CLO course profile.
- n. The DOBEC shall collect PEO, PLO, and CLO data and analyze the respective KPIs as indicated in section 2 of this document.
- o. In case of failure of any KPI, corrective action shall be initiated by the DOBEC and approved by the respective BoS.
- p. For PEO, PLO and CLO CQI, the actions to be taken are listed in Table-10, in ascending order severity-wise.
- q. Any corrective action taken, whether to improve the framework or as a consequence of failing any KPI, shall be initiated through the DOBEC. It shall be documented and approved by the respective responsible bodies as given in item 9.k. and 9.n. **Appendix I.2 Corrective Action Request Form** contains the template for Corrective Action Request (CAR) form.
- r. A CQI report shall be prepared by the DOBEC and submitted to the COBEC after approval from the respective BoS at the end of every semester. **Appendix I.3 CQI Summary Report** contains the template for preparing summary report of the CQI run at the end of each semester. The COBEC shall obtain and verify completion of closed loop CQI process involving plan-do-check-act cycle, to ensure proper implementation of OBE system in all engineering disciplines.
- s. The COBEC shall conduct annual audit to monitor the administration and implementation of the framework in all engineering departments.

- t. The COBEC shall also arrange refresher trainings for the relevant faculty members on regular intervals.
- u. Figure-1 summarizes the complete CQI process for any engineering programme as outlined in this section.

Table 10: Post KPI evaluation actions, severity-wise.

	PEO CQI	PLO CQI			CLO CQI	
	Program KPI	Student KPI	Course KPI	Programme KPI	Student KPI	Course KPI
KPIs Achieved	▪ No Action	▪ No Action	▪ No Action	▪ No Action	▪ No Action	▪ No Action
KPIs Not Achieved	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.

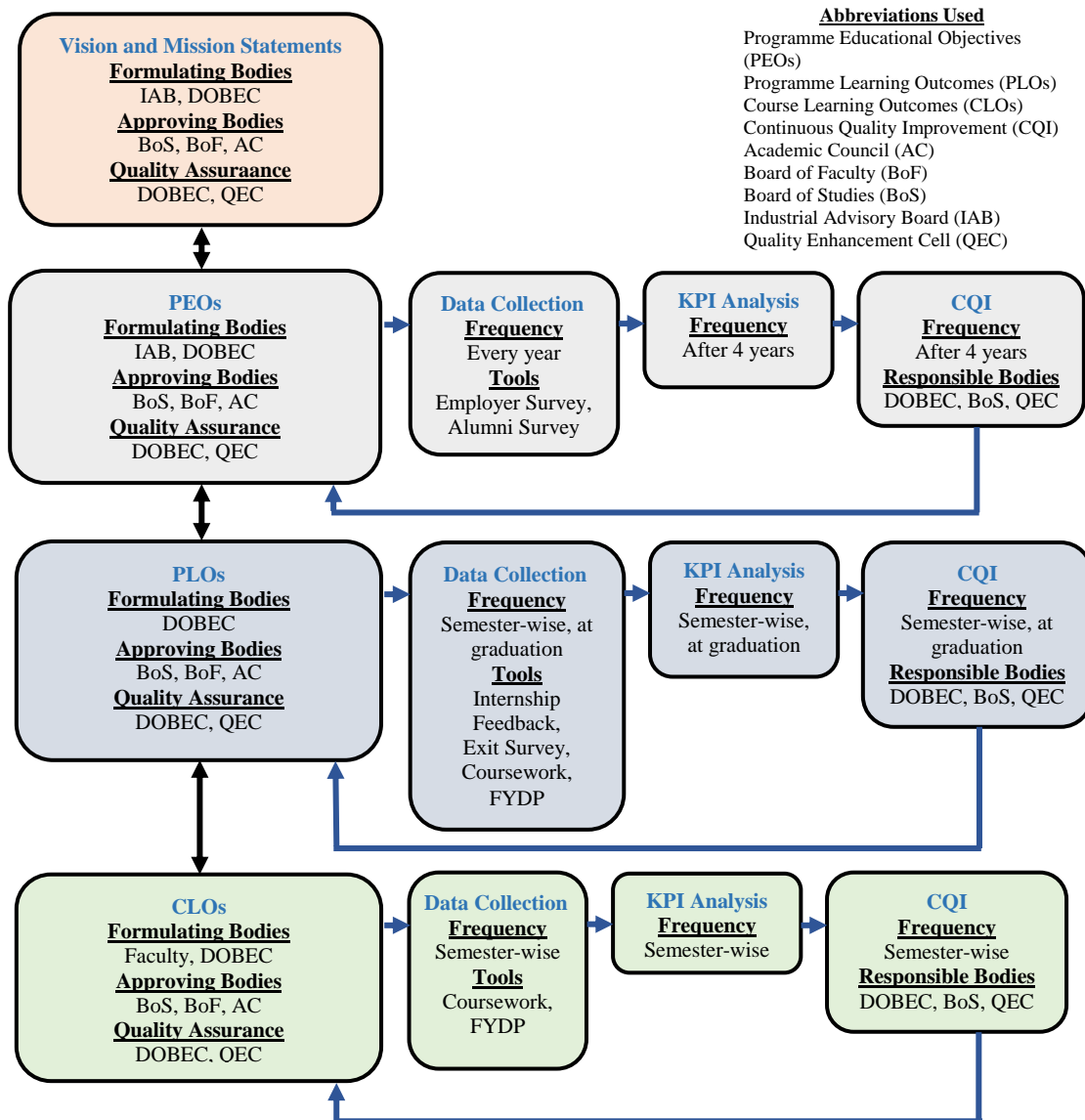


Figure 1: Post KPI evaluation actions, severity-wise.

12 Appendices

A PLO Attainment Sheet

NED University of Engineering and Technology
Bachelors of Engineering (_____)

Outcome Based Education Attainment Sheet

Name: _____
 Father's Name: _____
 Seat No.: _____
 Batch: _____
 Enrollment No.: _____
 Date of Birth: _____
 CNIC No./Passport No.: _____

Admitted in: _____
 Result Declaration: _____
 Mode of Study: _____
 Previous Degree: _____
 Degree Status: _____
 Course Exempted / Transferred
 from University: _____

Semester	Course Code	Course Title	Program Learning Outcomes (PLOs)											
			01	02	03	04	05	06	07	08	09	10	11	12
1														
2														
3														
4														
5														
6														
7														
8														
Aggregate PLO Score:														
PLO Attainment Status (Pass / Fail):														

Prepared by: _____

Controller of Examination

Issuing Officer: _____

B Survey Forms

B.1 Internship Feedback Form



BACHELORS IN _____
Internship Feedback Form
Employer Feedback for Internee Students

The Department of _____ Engineering requests your opinion on questions that are relevant to our internee students in an effort to continually improve our program in _____ Engineering. You may also visit the departmental website at _____ for more details.

Student Name: _____
Seat No: _____ Batch: _____
Organization/ Industry: _____
Department: _____
Focal Person Name: _____ Designation: _____
Cell#: _____ Email: _____
Internship dates: from _____ to _____
Internship hours per week: _____

The questions below are tied to the Program Learning Outcomes of Bachelor in _____ Engineering. **Response to these questions is mandatory.** Evaluate the internee, by placing a tick in the box that confirms most to your views.

You may also visit the departmental website at _____ for more details.

Questions	Very Weak	Weak	Moderate	Good	Excellent
	1	2	3	4	5
Relevant technical knowledge relevant essential to do his/her assignments. (PLO-1 Engineering Knowledge)					
Ability to identify, analyze and research literature for assigned problems. (PLO-2 Problem Analysis)					
Ability to exhibit awareness of societal, health, safety, legal and cultural responsibilities relevant to the field. (PLO-6 The Engineer and Society)					
Ability to exhibit ethical growth and professionalism. (PLO-8 Ethics)					
Ability to complete assignments, meet deadlines, understand instructions and work with others. (PLO-9 Individual and Teamwork)					
Oral and written communications skills of the internee. (PLO-10 Communication)					



Response to the following questions is optional.

Please provide detailed job description for the internee:

Please provide a pen picture of your experience with the internee:

Any other comments:

Signature and Stamp of the Employer: _____

Department of _____ Engineering, NED University of Engineering & Technology Karachi, would like to thank you for your willingness in spending time to complete this questionnaire. All these input and suggestion will be used to perform the process of "Continuous Quality Improvement" (CQI) for our undergraduate programs to ensure the programs meet the current market needs.

Please email the completed form to _____ or post it to the following address:

**The Chairperson
Department of _____ Engineering
NED University of Engineering and Technology
Main Campus, University Road
Karachi – 75270
Pakistan**

B.2 Exit Survey Form



BACHELORS IN _____ ENGINEERING
Exit Survey Form
A Survey for the Graduating Class of Batch _____

Name: _____
Seat No: _____
Enrollment No: _____
Date: _____

The Department of _____ Engineering requests if you could perform an evaluation on the statements and/or achievements of the Program Learning Outcomes as listed below. The Program Outcomes are statements describing knowledge, skills, behaviors and abilities which should be acquired by graduates at the end of four years program. This evaluation is relevant to our accreditation in an effort to continually improve our program in _____ Engineering.

How well the program you just completed help in with these twelve objectives? Please respond on a scale of 1-5.
Response to all the questions is mandatory.

Program Learning Outcome (PLO)	Questions	Very Weak	Weak	Moderate	Good	Excellent
		1	2	3	4	5
PLO-1 Engineering Knowledge	Ability to acquire knowledge of basic sciences and engineering fundamentals.					
	Ability to apply basic sciences and engineering fundamentals.					
PLO-2 Problem Analysis	Ability to identify problem.					
	Ability to formulate and analyze problem.					
PLO-3 Design / Development of Solutions	Ability to use a systems approach to design.					
	Ability to use a systems approach to evaluate operational performance.					
	Ability to obtain appropriate solution.					
	Ability to implement the solution to the problem.					
	Ability to monitor the degree of success of the implemented solution.					
PLO-4 Investigation	Ability to investigate complex engineering problems in a methodical way.					
	Ability to conduct experiment.					
	Ability to design experiment.					
	Ability to analyze experimental data.					
	Ability to interpret experimental data.					



Program Learning Outcome (PLO)	Questions	Very Weak	Weak	Moderate	Good	Excellent
		1	2	3	4	5
PLO-5 Modern Tool Usage	Ability to utilize information and communication technology (ICT).					
	Ability to apply the required techniques and skills.					
	Ability to use specific engineering tools.					
PLO-6 The Engineer and Society	Behave professionally.					
	Appreciate social, cultural and humanity responsibilities.					
PLO-7 Environment and Sustainability	Appreciate global and environmental responsibilities, as well as the need for sustainable development.					
PLO-8 Ethics	Practice good ethics.					
PLO-9 Individual and Teamwork	Ability to function effectively as an individual.					
	Ability to function effectively as a member in a working group.					
	Ability to function as a leader/manager in a working group.					
PLO-10 Communication	Ability to communicate well with fellow engineers.					
	Ability to communicate effectively within the community at large.					
PLO-11 Project Management	Ability to cooperate effectively in the team as an individual or team leader.					
	Manage mega projects in multidisciplinary environment.					
	Ability to demonstrate management skills and apply engineering principles.					
PLO-12 Lifelong Learning	Recognize the needs of self-improvement.					
	Recognize the needs to lifelong learning.					
	Ability to extract information from various sources.					
	Possess capability to undertake self-study.					



Any other comments:

Department of _____ Engineering, NED University of Engineering & Technology Karachi, would like to thank you for your willingness in spending time to complete this questionnaire. All these input and suggestion will be used to perform the process of Continuous Quality Improvement (CQI) for our undergraduate programs to ensure the programs meet the current market needs.

Signature: _____

B.3 Alumni Survey Form



BACHELORS IN _____ ENGINEERING
Alumni Feedback Form

Our dearest alumnus/alumna, welcome back! The Department of _____ Engineering at NED University of Engineering and Technology reopens its arms to you, and looks forward to growing better with your help and support. While we tried to make our time together most fruitful, we would like to know your opinion, now that you have moved on. Your input will be of great use to improve the quality of our undergraduate program and enhance the credibility of our department.

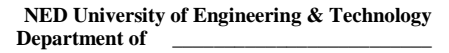
You may also visit the departmental website at _____ for more details.

Name: _____
Class Roll#: _____
Batch: _____ Year of completion: _____
Postal Address: _____

Current Employer: _____
Office Address: _____

Telephone (Cell): _____ (Off): _____
Email: _____

Perform an evaluation on the statements and/or achievements of the Program Educational Objectives as listed below. The Program Educational Objectives are statements describing features which should be achieved by graduates after _____ years of completion of study from the _____ (Faculty/Program) and eventually work as engineers. **Response to these questions is mandatory.**



If you wish to comment please use the space provided below:

[illegible]

Signature: _____

B.4 Employer Survey Form



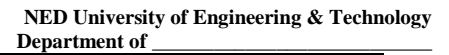
BACHELORS IN COMPUTER SYSTEMS ENGINEERING Employer Feedback Form

The Department of _____ Engineering requests your opinion on questions that are relevant to our alumni in an effort to continually improve our program in _____ Engineering. You may also visit the departmental website at _____ for more details.


Employee/Graduate Name: _____
Father's Name _____ Batch: _____
Employer: _____
Department: _____
Feedback Respondent: _____ Designation: _____
Cell#: _____ Email: _____
Employment dates: from _____ to _____

Perform an evaluation on the statements and/or achievements of the Program Educational Objectives as listed below. The Program Educational Objectives are statements describing features which should be achieved by graduates after _____ years of completion of study from the _____ (Faculty/Program) and eventually work as engineers. **Response to these questions is mandatory.**

Questions	Very Weak	Weak	Moderate	Good	Excellent
	1	2	3	4	5
Ability to design and implement cost effective cutting-edge technologies using concepts relevant to _____ Engineering. (PEO-__)					
Graduate ability to work with the others. (PEO-__)					
Graduate participation in group discussions/ meetings. (PEO-__)					
Graduate exhibits managerial skills during assignments. (PEO-__)					
Graduate oral and written communications skills. (PEO-__)					
Graduate ability to disseminate ideas to the team members, customers in the field of _____ engineering and interdisciplinary personals. (PEO-__)					
Graduate awareness/understanding of societal, health, safety, legal and cultural responsibilities relevant to _____ engineering. (PEO-__)					
Graduate fulfilling/adherence to his/her responsibilities towards the sustainable development of the environment and society. (PEO-__)					
Graduate exhibiting ethical growth and professionalism. (PEO-__)					



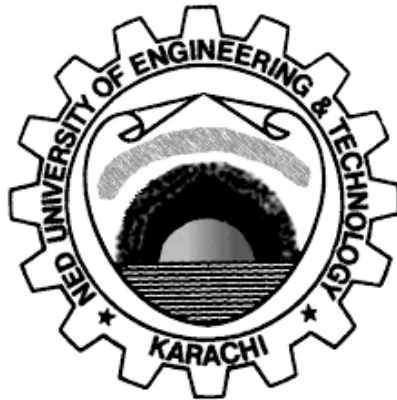
If you wish to comment please use the space provided below:



Signature: _____

C FYDP Management System Documents

C.1 FYDP SOP Document



NED University of Engineering and Technology

STANDARD OPERATING PROCEDURE

**Final Year (Design) Project
(FY(D)P)**

Assessment and Management

1. SUBJECT

Standard Operating Procedure (SOP) for the management and assessment of Final Year Design Projects (FYDP).

2. PURPOSE AND OBJECTIVE

The purpose of this SOP is to standardize the process of allocation, assessment and evaluation of FYDP. It is designed to manage and to define the roles and responsibilities of the Chairperson, FYDP Steering Committee, FYDP Coordinator, FYDP Supervisor/Co- Supervisor/Industrial Advisor, Examiners and Students. This SOP also defines the necessary monitoring and controls of the FYDP processes and the effective and efficient communication with the stakeholders, involved in the process.

3. DEFINITION OF FINAL YEAR DESIGN PROJECT (FYDP)

A final year design project (FYDP) is the most important activity which requires the students to apply their theoretical and practical knowledge towards the end of an engineering program. FYDP is a compulsory requirement and involves a range of activities including literature review, problem analysis, design, modelling and simulation using various methods and means including hardware and software tools to demonstrate a functional concept including rapid prototyping, where applicable.

Design projects will encompass complex engineering problems and design of systems, components or processes integrating core areas with appropriate consideration for public health and safety. FYDP will include cultural, societal, and environmental considerations encompassing SDGs. FYDP should lead to an integration of the knowledge and practical skills as required in the Program Learning Outcomes (PLOs).

FYDP will span over two consecutive semesters, i.e. 7th/Fall and 8th/Spring Semesters, totaling 6-credit hours. The assessment of a FYDP will be carried out through well-defined mechanism of rubrics and standard operating procedures (SOPs).

4. RESPONSIBILITIES

4.1. Chairperson

Apart from statutory and delegated responsibilities, Chairpersons of the departments are responsible for

- i. constituting the FYDP Steering Committee comprising of three (03) faculty members with intimation to the concerned Dean
- ii. appointing the FYDP Coordinator
- iii. approval of the Activity Plan for the FYDP prepared by the FYDP Coordinator
- iv. assigning FYDP Examiners for the Evaluation at the end of 7th/Fall Semester and Evaluation at the end of 8th/Spring Semester
- v. resolving the discrepancy (if any) in the awards of Supervisors and Examiner.
- vi. proposing changes for improvements in FYDP SOP or related documents, as needed

4.2. Director Quality Enhancement Cell

Director Quality Enhancement Cell is responsible for

- i. monitoring and controlling the FYDP Process through the internal audits
- ii. evaluating and incorporating any proposed change in the FYDP SOP or related documents

4.3. FYDP Steering Committee

FYDP steering committee is responsible for

- i. reviewing and endorsing FYDP proposals as defined in relevant Rubrics
- ii. proposing improvements in the FYDP SOP

4.4. FYDP Coordinator

FYDP Coordinator is responsible for

- i. acting as secretary to FYDP Steering Committee
- ii. conducting and managing an orientation session for the FYDP students at end of 6th Semester
- iii. preparing the Activity Plan for the FYDP
- iv. implementing, monitoring and control of Activity Plan
- v. communicating with the Directorate of Industrial Liaison (DIL) for the collection of industrial project to be assigned as the FYDP
- vi. collecting the project titles along with synopsis from the Prospective Supervisors (Faculty Members)
- vii. displaying FYDP List on the noticeboard and the departmental webpage after approval of the Chairperson
- viii. collecting the project proposals from the FYDP Supervisors and forwarding them to the FYDP Steering Committee for endorsement
- ix. initiating resolution of any issue related to FYDP (such as; change of title, composition of group, etc.)
- x. record keeping of comments / recommendation for improvements (if any) provided in Evaluation Rubrics at the end of 7th/Fall Semester.

4.5. Supervisor/Co-Supervisor

Supervisor/Co-Supervisor is responsible for

- i. providing guidance to the FYDP students related to the FYDP titles before the allocation of the projects
- ii. communicating with the Industry Advisor, if any
- iii. forwarding the proposals to the FYDP Coordinator
- iv. providing continuous supervision to the FYDP groups allocated to them
- v. maintaining weekly attendance of the FYDP groups
- vi. performing the Evaluations at the end of 7th/Fall and 8th/Spring Semesters and any other assessment of the FYDP groups as defined in the SOP
- vii. reviewing and finalizing the FYDP Reports and presentations submitted by the FYDP groups with respect to report formatting, technical contents, plagiarism and English usage.

4.6. Industrial Advisor

Industrial Advisor is responsible for

- i. suggesting problems from the industry and connecting it with the FYDP for solution
- ii. providing guidance to the students to reach to an industry oriented solution, in coordination with the Supervisor/Co-Supervisor
- iii. providing necessary data as per need of the FYDP
- iv. arranging field and/or industry visit(s) of the FYDP group as per the need of FYDP
- v. facilitating the students with respect to industry related concerns, as needed

4.7. FYDP Examiner

FYDP Examiner is responsible for

- i. evaluating the performance of FYDP students/groups as per provided rubrics during the Evaluations at the end of 7th/Fall and 8th/Spring Semesters

- ii. reviewing the FYDP Reports submitted by the FYDP groups with respect to report formatting, technical contents and English usage.

4.8. FYDP Group/Students

FYDP Group/Students is responsible for

- i. attending the FYDP Orientation Session arranged by the FYDP Coordinator
- ii. forming group of up to four (04) students
- iii. timely submitting Project Proposal (to the Supervisor), Report/Presentation at the end of 7th/Fall Semester, Final Report and Presentation at the end of 8th/Spring Semester for Evaluation as prescribed in the Activity Plan
- iv. ensuring compliance of Reports submitted at the end of 7th/Fall and 8th/Spring Semesters with the prescribed format, proper English usage and originality (similarity index less than or equal to 19 percent)
- v. appearing before the Examiners for presenting their work at the Evaluations conducted at the end of 7th/Fall and 8th/Spring Semesters
- vi. incorporating the comments of the Supervisors/Examiners in the Final FYDP Report to be submitted at the Department

5. PROCESS

The overall FYDP management and evaluation process is composed of three stages, namely preparation, Semester 1 (7th/Fall Semester) progress and evaluation, and Semester 2 (8th/Spring Semester) progress and final evaluation. This three-step process is shown in Figure 1.

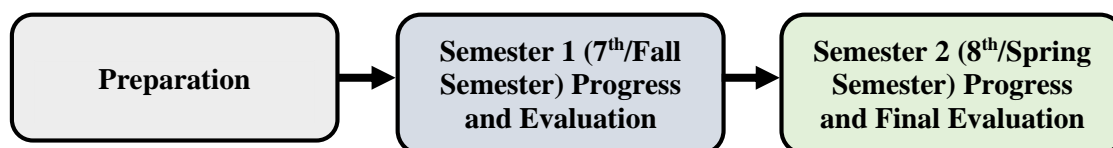


Figure 1: Stages in FYDP management and evaluation process.

5.1. Preparation

The process of FYDP preparation includes following activities:

- i. The FYDP Coordinator shall prepare activity plan for the FYDP processes and activities for the batch by the FYDP coordinator, during the last three weeks of the 6th/Spring Semester. The plan shall be approved by the Chairperson. The format for the activity plan is provided in **Appendix C3 – Activity Plan for FYDP**.
- ii. Orientation session to guide the students about the roles of FYDP Coordinators, Supervisors/Co-Supervisors/Industrial Advisor and Students, and the overall FYDP process and requirements shall be planned and conducted by the FYDP Coordinator/Chairperson, during the last two weeks of the 6th/Spring Semester.
- iii. The FYDP Coordinator shall gather project titles from faculty members and industry, two weeks before the commencement of 7th/Fall Semester.
- iv. The FYDP Coordinator shall display the list of the collected FYDP titles for the students, one week before the commencement of 7th/Fall Semester.

The overall preparation process has been summarized in Figure 2.

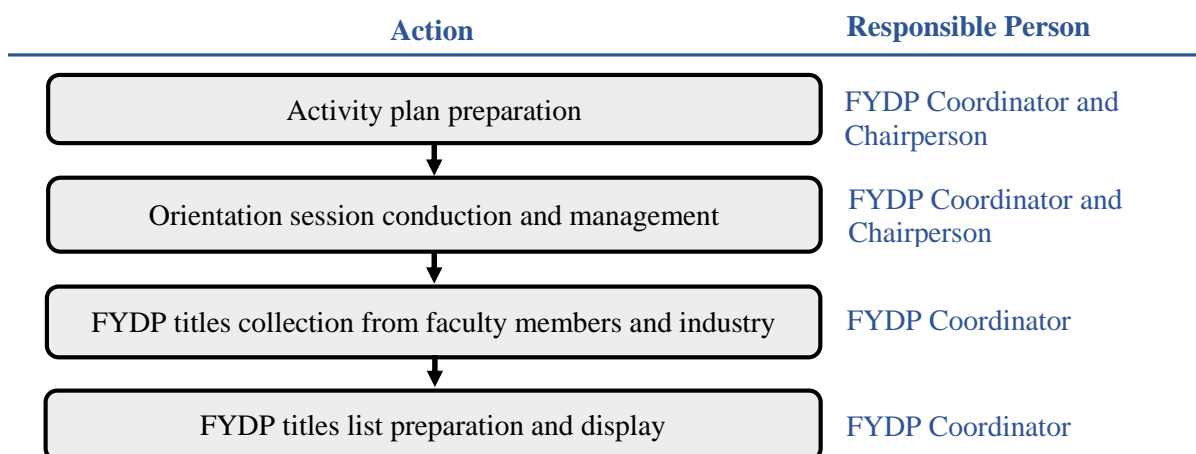


Figure 2: The preparation stage.

5.2. Semester 1 (7th / Fall Semester) Progress and Evaluation

- i. FYDP coordinator shall collect the FYDP proposal forms from the students through the respective Supervisors on the format prescribed in **Appendix C2 – FYDP Proposal Form**, during the first week of the Semester.
- ii. The collected FYDP proposals shall be approved and evaluated by the FYDP Steering Committee, two weeks after the commencement of the Semester. The FYDP proposals shall be graded on the rubric provided in **Appendix D1 – Rubric for FYDP Proposal**.
- iii. The FYDP coordinator shall communicate the final FYDP project list to all concerned, by the end of first two weeks of the Semester, on the template provided in **Appendix C4 - FYDP List**.
- iv. The Supervisor/Co-Supervisor shall monitor and record the presence of the students in FYDP discussion meetings, throughout the Semester, on template provided in **Appendix C6 - Attendance of FYDP Group**.
- v. The Supervisor/Co-Supervisor shall also keep track and incorporation of the modifications recommended by the Steering Committee in the FYDP proposal.
- vi. The supervisor shall grade the progress of the students on rubric provided in **Appendix D2 – Rubric for Semester 1 Progress**, before the Semester 1 (7th/Fall Semester) evaluation.
- vii. The FYDP coordinator shall collect the progress reports and presentations for Semester 1 evaluation from the students, through the respective supervisors during the last week of the Semester.
- viii. The FYDP coordinator shall prepare the schedule for Semester 1 (7th/Fall Semester) evaluation.
- ix. Semester 1 (7th/Fall Semester) evaluation shall be conducted by the Supervisor/Co-Supervisor and Examiner during the last week of the Semester. The grading shall be done on the rubric provided in **Appendix D3 – Rubric for Semester 1 Evaluation**. The Examiners may record their comments and suggestions on the same rubric form.
- x. The FYDP coordinator shall collect and consolidate all the Semester 1 (7th/Fall Semester) evaluations.
- xi. Any change in FYDP title shall be carried out using the form provided in **Appendix C5 - Application for Change of FYDP Title**.

The overall Semester 1 (7th/Fall Semester) progress and evaluation process has been summarized in Figure 3.

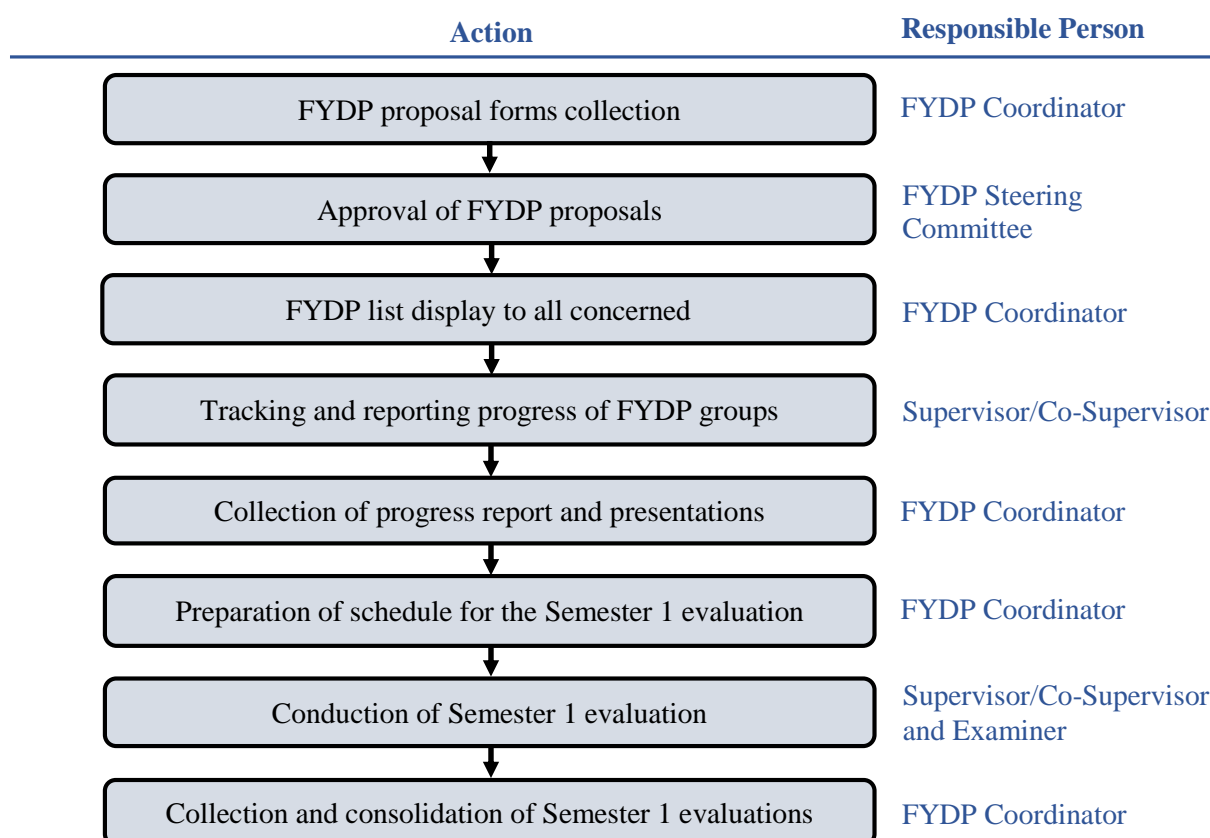


Figure 3: The Semester 1 (7th/Fall Semester) progress and evaluation stage.

5.3. Semester 2 (8th / Spring Semester) Progress and Final Evaluation

- The Supervisor/Co-Supervisor shall monitor and record the presence of the students in FYDP discussion meetings, throughout the Semester, on template provided in **Appendix C6 - Attendance of FYDP Group**.
- The Supervisor/Co-Supervisor shall also keep tracking of incorporation of the improvements as suggested by the examiners during Semester 1 (7th/Fall Semester) evaluation.
- The supervisor shall grade the progress of the students on rubric provided in **Appendix D4 – Rubric for Semester 2 Progress**, before the Semester 2 (8th/Spring Semester) evaluation. The input from FYDP coordinator shall also be considered.
- The Supervisor/Co-Supervisor shall collect and review the FYDP draft report from the students during the last week of the Semester. The students shall prepare the report in compliance with the detailed format provided in **Appendix C7 - FYDP Report Guidelines**. The language of the FYDP report shall be English with accurate and sufficient technical and grammatical usage. The report technical content must be sufficient enough to describe the configuration/ specification of the FYDP deliverables. FYDP Report and its contents must be original and plagiarism free.
- The FYDP coordinator shall collect the draft reports and presentations for Semester 2 (8th/Spring Semester) evaluation from the students, through the respective supervisors during the last week of the Semester.
- The FYDP coordinator shall prepare the schedule for Semester 2 (8th/Spring Semester) final evaluation.
- Semester 2 (8th/Spring Semester) evaluation shall be conducted by the Supervisor/Co-Supervisor, Examiner and the Chairperson after the end of Semester theory examinations. The grading shall be done on the rubric provided in **Appendix D6 – Rubric for Semester 2 Final Evaluation**.

- viii. The Examiners shall also evaluate the draft of the FYDP report on the rubric provided in **Appendix D5 - Rubric for Final Report**.
- ix. The students shall submit the finalized FYDP report after incorporating all changes/corrections recommended by the Examiners, to the Supervisor, one week after the final evaluation.
- x. The FYDP coordinator/Chairperson shall collect and consolidate all the Semester 2 (8th/Spring Semester) evaluations on the template provided in **Appendix D7 - FYDP Consolidated Grading Sheet**.
- xi. The Chairperson shall enter the finalized marks in Examination Portal before the last day of submission of results.

The overall Semester 2 (8th/Spring Semester) progress and evaluation process has been summarized in Figure 4.

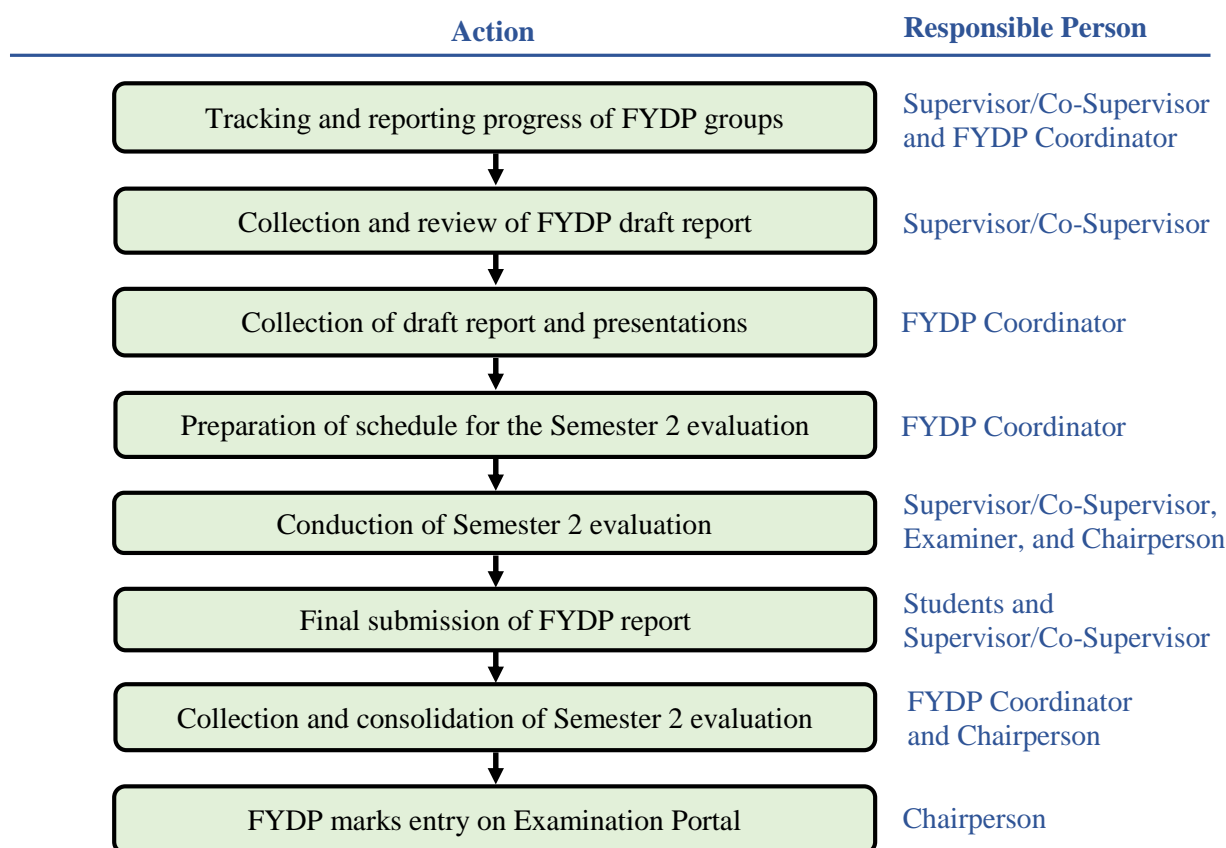


Figure 4: The Semester 2 (8th/Spring Semester) progress and evaluation stage.

6. RELATED DOCUMENTS

6.1. FYDP Management System Documents

1. Appendix C1 – FYDP SOP Document
2. Appendix C2 – FYDP Proposal Form
3. Appendix C3 – Activity Plan for FYDP
4. Appendix C4 – FYDP List
5. Appendix C5 – Application for Change of FYDP Title
6. Appendix C6 – Attendance of FYDP Group
7. Appendix C7 – FYDP Report Guidelines

6.2. FYDP Evaluation Rubrics

8. Appendix D1 – Rubric for FYDP Proposal
9. Appendix D2 – Rubric for Semester 1 Progress
10. Appendix D3 – Rubric for Semester 1 Evaluation
11. Appendix D4 – Rubric for Semester 1 Progress
12. Appendix D5 – Rubric for Final Report
13. Appendix D6 – Rubric for Semester 2 Final Evaluation
14. Appendix D7 – FYDP Consolidated Grading Sheet

C.2 FYDP Proposal Form



Department of _____
 <FYDP Course Code> Final Year Design Project
Proposal for the Final Year Design Project

Title	
--------------	--

Domain	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6

1. Nature of Project [Tick all that applicable]

<input type="checkbox"/> New Project OR <input type="checkbox"/> Extension of Existing Project	<input type="checkbox"/> Industrial Collaboration	<input type="checkbox"/> Funded
<input type="checkbox"/> Other Department Collaboration (If yes) Department Name _____	<input type="checkbox"/> Other Academic Institution Collaboration (If yes) Institution Name _____	

2. Brief Outline (*Problem Identification and Significance*)

3. Objectives

4. Scope

5. Proposed Methodology

6. Resources Involved

7. Description of Industrial Support (If any)

8. SDGs (If Applicable)

<input type="checkbox"/> No Poverty	<input type="checkbox"/> Zero Hunger
<input type="checkbox"/> Good Health and Well-Being	<input type="checkbox"/> Quality Education
<input type="checkbox"/> Gender Equality	<input type="checkbox"/> Clean water and Sanitation
<input type="checkbox"/> Affordable and Clean Energy	<input type="checkbox"/> Decent Work and Economic growth
<input type="checkbox"/> Industry, Innovations and Infrastructure	<input type="checkbox"/> Reduced Inequalities
<input type="checkbox"/> Sustainable Cities and Communities	<input type="checkbox"/> Responsible Consumption and Production
<input type="checkbox"/> Climate action	<input type="checkbox"/> Life Below Water
<input type="checkbox"/> Life on Land	<input type="checkbox"/> Peace, Justice and Strong Institutions
<input type="checkbox"/> Partnerships	

9. Gantt Chart

Year	20____ to 20____											
Months												
Task 1												
Task 2												
:												
Task N												

10. Details of Project Team

i. Students

No.	Name	Seat No.	Signature (s)
1			
2			
3			
4			

ii. Supervisors / Advisors

	Name	Designation & Department	Address & Contact	Signature(s)
Supervisor				
Co-Supervisor (If any)				
Industrial Advisor (If any)				

For Office Use Only

Project Serial No.: _____		
Dated: _____	Signature Convener Steering Committee	Signature FYP Coordinator

<input type="checkbox"/> Proposal Approved	<input type="checkbox"/> Not Approved	<input type="checkbox"/> Returned for Clarification / Modification
Comments: (if any)		

(Signature of Chairperson)

Date: _____

C.3 Activity Plan for FYDP



Activity Plan for Final Year (Design) Project (FY(D)P)

Bachelors of <Engineering/Science> in <Programme Name>

F/SOP/FYDP 01/01/00

S.No.	Activity	Responsible Person	Target Date
PRE-FALL SEMESTER			
1	Orientation session conduction and management	FYDP Coordinator, Chairperson	Last two weeks of Spring Semester Third Year
2	FY(D)P titles collection from faculty members and industry	FYDP Coordinator	Two weeks before the start of Fall Semester
3	FY(D)P titles list preparation and display	FYDP Coordinator	One week before the start of Fall Semester
SEMESTER 1 (7th / FALL SEMESTER)			
1	FYDP proposal forms collection	FYDP Coordinator	One week after the start of Fall Semester
2	Approval of FYDP proposals	FYDP Steering Committee	Two weeks after the start of Fall Semester
3	FYDP list display to all concerned		
4	Tracking and reporting progress of FYDP groups	Supervisor/Co-Supervisor	Throughout the Semester
5	Collection of progress report and presentations	FYDP Coordinator	Last week of the Semester
6	Preparation of schedule for the Semester 1 evaluation	FYDP Coordinator	
7	Conduction of Semester 1 evaluation	Supervisor/Co-Supervisor, Examiner	Last week of the Semester
8	Collection and consolidation of Semester 1 evaluations	FYDP Coordinator	End of Semester Examination
SEMESTER 2 (8th / SPRING SEMESTER)			
1	Tracking and reporting progress of FYDP groups	Supervisor/Co-Supervisor, FYDP Coordinator	Throughout the Semester
2	Collection and review of FY(D)P draft report	Supervisor/Co-Supervisor	Last week of the Semester
3	Collection of draft report and presentations	FYDP Coordinator	
4	Preparation of schedule for the Semester 2 evaluation	FYDP Coordinator	Last week of the Semester
5	Conduction of Semester 2 evaluation	Supervisor/Co-Supervisor, Examiner, Chairperson	After the End of Semester Examinations
6	Final submission of FY(D)P report	Students, Supervisor/Co-Supervisor	One week after the Final Evaluation
7	Collection and consolidation of Semester 2 evaluation	FYDP Coordinator, Chairperson	After the Final Evaluation
8	FY(D)P marks entry on Examination Portal	Chairperson	Last day of submission of results

FYDP Coordinator

Chairperson

C.4 FYDP List

Department of _____
 <FYDP Course Code> Final Year Design Project
Project List



F/SOP FYDP/02/00

Batch _____ Semester _____

S.No.	Project Title	Student Name	Supervisor/Co-Supervisor	Industry
		1. 2. 3. 4.		

FYDP Coordinator _____ FYDP Review Committee Head _____ Chairperson _____

C.5 Application for Change of FYDP Title

Department of _____
 <FYDP Course Code> Final Year Design Project
Application for Change Of Project Title
 (To be submitted within six weeks after the start of Fall semester)



F/SOP FYDP/05/00

Date: _____

Previous Project Title:

New Project Title:

Domain:	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6

Sub Domain (If required): _____

Name (Supervisor): _____

Consent & Reason from Supervisor: _____

Signature Supervisor

For Office Use Only	
Project Serial No.: _____	Signature (FYDP Coordinator): _____
Dated: _____	Signature (Chairperson): _____

C.6 Attendance of FYDP Group

Department of _____
 <FYDP Course Code> Final Year Design Project
Attendance of Final Year Project Group
 (To be maintained by the Supervisor/Co-Supervisor)



F/SOP FYDP/06/00

☐ For Fall Semester

☐ For Spring Semester

Name (Supervisor/Co-Supervisor): _____

Title of Project: _____

Seat No.	Name of Students	Meetings	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Meetings Attended	% Attended
		Date																		

 Signature with Date
 Supervisor

 Signature with Date
 FYDP Coordinator

C.7 FYDP Report Guidelines

This document has not been included here because of its long length. This document is same as previously provided by QEC.

D FYDP Evaluation Rubrics

D.1 Rubric for FYDP Proposal

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project



Grading of FYDP Proposal (7th/Fall Semester) (Weightage - 6%)

Project Title: _____

S. No	Student Name	Roll No.	I Problem Identification and Objectives (3)	II Relevance to SDGs (3)	III Proposed Methodology (3)	IV Work Plan (3)	Weighted Average Score (12)
			PLO-2 (%)	PLO-7 (%)	PLO-3 (%)	PLO-11 (%)	
1							
2							
3							
4							

Use Rubric FYDP-OBE-01 for each student.

Weighted Average Score = $[PLO-2 (\%) * 3 + PLO-7 (\%) * 3 + PLO-3 (\%) * 3 + PLO-11 (\%) * 3] / 100$

Head of FYDP Steering Committee

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project

Rubric for Project Proposal (7th/Fall Semester) (Weightage - 6%)

Student Name: _____

Roll No.: _____

Criterion	Levels of Attainment (%)				
	Unacceptable (0)	Just acceptable (25)	Average (50)	Good (75)	Excellent (100)
I Problem Identification and Objectives	The problem statement is not given and/or objective is not stated at all.	The problem statement and objectives are not suitably described.	The problem statement and objectives are just described.	The problem statement and objectives are clearly described.	The problem statement and objectives are well-structured and clearly described.
II Relevance to SDGs	No relevance to SDGs established.	Some relevance to SDGs without any clear link.	Reasonable consideration of SDGs and their linkage with the proposed work.	Clear relevance between the project work and SDGs established.	Relevance to SDGs is clearly established with appropriate consideration for relevant SDGs.
III Proposed Methodology	Not defined in the proposal.	Proposed methodology is marginally practical and relevant to the project objectives.	Proposed methodology is reasonably practical and relevant to the project objectives.	Proposed methodology is technically practical and relevant to the project objectives.	Proposed methodology is well-structured and highly relevant to the project objectives.
IV Work Plan	Does not have a timeline for different phases of the project.	Has developed a timeline but cannot clearly describe the different activities of the work and corresponding timelines.	Has developed a timeline and can describe the different activities of the work and corresponding timelines with minimal prompting from peers.	Has developed a timeline describing when most parts of the work will be done. Student can describe the different activities of the work and corresponding timelines.	Developed a reasonable, complete timeline describing when different parts of the work will be done. Student can clearly and confidently describe the timeline with milestones.

D.2 Rubric for Semester 1 Progress

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project



Grading of Semester 1 (7th/Fall Semester) Progress (Weightage - 10%)

Project Title: _____

S. No	Student Name	Roll No.	I Intellectual Contribution (5)	II Attendance (5)	III Coherence with group (5)	IV Response to Questions (5)	Weighted Average Score (20)
			PLO-2	PLO-8	PLO-9	PLO-10	
1							
2							
3							
4							

Use Rubric FYDP-OBE-02 for each student.

Weighted Average Score = [PLO-2 (%) * 5 + PLO-8 (%) * 5 + PLO-9 (%) * 5 + PLO-10 (%) * 5] / 100

FYDP Supervisor

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project

Rubric for Semester 1 (7th/Fall Semester) Progress (Weightage - 10%)

Student Name: _____

Roll No.: _____

	Levels of Attainment (%)				
	Unacceptable (0)	Just acceptable (25)	Average (50)	Good (75)	Excellent (100)
I Intellectual Contribution	Doesn't contribute to the project work and does not show understanding of the different project attributes.	Barely participates in the project activities and shows some understanding of the different project attributes.	Contributes in some activities of the project and shows reasonable understanding of the different project attributes.	Contributes effectively in majority of the project activities and has good understanding of the complex project attributes.	Enthusiastic and contributes in all activities of the project and demonstrates very good understanding of the complex project attributes.
II Attendance	To be taken from Attendance Proforma maintained by the Supervisor				
III Coherence with group	Non-cooperative.	Rarely contributes in group discussions and not a good team member.	Sometimes contributes useful ideas in group discussions and a satisfactory group member.	Usually provides useful ideas in group discussions and a good group member who tries hard.	Routinely provides useful ideas in group discussions and a definite leader who contributes a lot of effort.
IV Response to Questions	Neither understands the question, nor could reply.	Adequate understanding of the question and reply.	Seemed to understand the main points of the question and replied to those with ease.	Clearly understood the question and replied with ease.	Understood the question in-depth and replied confidently.

D.3 Rubric for Semester 1 Evaluation

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project



Semester 1 (7th/Fall Semester) Evaluation (Weightage - 24%)

Project Title: _____

S. No	Student Name	Roll No.	I Literature Review (12)	II Methodology (12)	III Adherence to Work Plan (12)	IV Reporting and Presentation (12)	Weighted Average Score (48)
			PLO-2	PLO-3	PLO-11	PLO-10	
1							
2							
3							
4							

Use Rubric FYDP-OBE-03 for each student.

Weighted Average Score = [PLO-2 (%) * 12 + PLO-3 (%) * 12 + PLO-11 (%) * 12 + PLO-10 (%) * 12] / 100

FYDP Supervisor

FYDP Examiner

Chairperson

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project

Rubric for Semester 1 (7th/Fall Semester) Evaluation (Weightage - 24%)

Student Name: _____

Roll No.: _____

	Levels of Attainment (%)				
	Unacceptable (0)	Just acceptable (25)	Basic (50)	Good (75)	Excellent (100)
I Literature Review	No literature review carried out.	Partial literature review conducted, does not identify the problem.	Basic literature review carried out with some detail and relevant papers.	Literature review covers majors areas related to the project with relevant sources identifying the problem.	Extensive literature review conducted in a scientific manner with proper citations and referencing, identifying the problem.
II Methodology	No methodology presented.	Some details available without explanation of the steps.	Methodology with basic steps defined.	Methodology defined with good details on all the phases of the project.	Detailed methodology defined with all the relevant steps in extensive detail.
III Adherence to Work Plan	Failure to manage project work as per plan.	Inadequate management of time and project work.	Partially appropriate management of time and project work.	Good and appropriate management of time and project work.	Exceptional management of time and project work.
IV Reporting and Presentation	Below standard content and delivery.	Marginal organization and delivery.	Reasonable organization and delivery.	Good organization and delivery.	Exceptional organization and delivery.
Comments (if any)					

D.4 Rubric for Semester 2 Progress

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project



Grading of Semester 2 (8th/Spring Semester) Progress (Weightage - 24%)

Project Title: _____

S. No	Student Name	Roll No.	I Intellectual Contribution (16)	II Attendance (8)	III Coherence with group (8)	IV Response to Questions (8)	V Timely Report Submission* (8)	Weighted Average Score (48)
			PLO-2	PLO-8	PLO-9	PLO-10	PLO-11	
1								
2								
3								
4								

Use Rubric FYDP-OBE-04 for each student.

Weighted Average Score = $[PLO-2 (\%) * 16 + PLO-8 (\%) * 8 + PLO-9 (\%) * 8 + PLO-10 (\%) * 8 + PLO-11 (\%) * 8] / 100$

FYDP Supervisor

FYDP Coordinator

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project

Rubric for Semester 2 (8th/Spring Semester) Progress (Weightage - 24%)

Student Name: _____

Roll No.: _____

	Levels of Achievement (%)				
	Unacceptable (0)	Just acceptable (25%)	Basic (50%)	Good (75 %)	Excellent (100 %)
I Intellectual Contribution	Doesn't contribute to the project work and does not show understanding of the different project attributes.	Barely participates in the project activities and shows some understanding of the different project attributes.	Contributes in some activities of the project and shows reasonable understanding of the different project attributes.	Contributes effectively in majority of the project activities and has good understanding of the complex project attributes.	Enthusiastic and contributes in all activities of the project and demonstrates very good understanding of the complex project
II	To be taken from Attendance Proforma maintained by the Supervisor				
III Coherence with group	Non-cooperative.	Rarely contributes in group discussions and not a good team member.	Sometimes contributes useful ideas in group discussions and a satisfactory group member.	Usually provides useful ideas in group discussions and a good group member who tries hard.	Routinely provides useful ideas in group discussions and a definite leader who contributes a lot of effort.
IV Response to Questions	Neither understands the question, nor could reply.	Adequate understanding of the question and reply.	Seemed to understand the main points of the question and replied to those with ease.	Clearly understood the question and replied with ease.	Understood the question in-depth and replied confidently.
V Timely Report Submission	Not Submitted in time.				Timely Submitted.

D.5 Rubric for Final Report

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project



Grading of Final Report (8th/Spring Semester) (Weightage - 16%)

Project Title: _____

S. No	Student Name	Roll No.	I Literature Review (4)	II Methodology (4)	III Results and Discussion (4)	IV Conclusions and Recommendations (4)	V Relevance to SDGs (4)	VI Originality (4)	VII Formatting / Organization (4)	VIII Technical Writing (4)	Weighted Average Score (32)
			PLO-2	PLO-3	PLO-3	PLO-12	PLO-7	PLO-8	PLO-10	PLO-10	
1											
2											
3											
4											

Use Rubric FYDP-OBE-05 for each student.

*Weighted Average Score = [PLO-2 (%) * 4 + PLO-3 (%) * 8 + PLO-12 (%) * 4 + PLO-7 (%) * 4 + PLO-8 (%) * 4 + PLO-10 (%) * 8] / 100*

FYDP Supervisor

FYDP Examiner

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project

FYDP-OBE-05

Rubric for Final Report (8th/Spring Semester) (Weightage - 16%)

	Levels of Attainment (%)				
	Unacceptable (0)	Just acceptable (25)	Basic (50)	Good (75)	Excellent (100)
I Literature Review	No literature review carried out.	Partial literature review conducted, does not identify the problem.	Basic literature review carried out with some detail and relevant papers.	Literature review covers majors areas related to the project with relevant sources identifying the problem.	Extensive literature review conducted in a scientific manner with proper citations and referencing, identifying the problem.
II Methodology	No methodology presented.	Some details available without explanation of the steps.	Methodology with basic steps defined.	Methodology defined with good details on all the phases of the project.	Detailed methodology defined with all the relevant steps in extensive detail.
III Results & Discussion	No results and their discussion presented.	Some results without discussion available.	Results with reasonable level of discussion.	Results with detailed discussion presented.	Detailed results with extensive discussion presented.
IV Conclusions & Recommendations	No conclusions and recommendations.	Some conclusions with no relevance to project objectives.	Conclusions partially addressing objectives and recommendations.	Conclusions reasonably addressing project objectives and relevant recommendations for future work.	Conclusions adequately addressing the objectives with relevant recommendations for future work.
V Relevance to SDGs	No relevance to SDGs established.	Some relevance to SDGs without any clear link.	Reasonable consideration of SDGs and their linkage with the proposed work.	Clear relevance between the project work and SDGs established.	Relevance to SDGs is clearly established with appropriate consideration for relevant SDGs.
VI Originality	Project is plagiarized.	Project is not unique, but modified and improved from the existing sources with minimal changes.	Project is not unique, but modified and improved from the existing sources with adequate	Project is distinctive and based on original ideas.	Project is unique, creative and innovative.
VII Formatting/ Organization	Non-adherence to formatting guidelines and disorganized.	Formatting guidelines barely followed and poorly organized.	Formatting guidelines adequately followed and organized to some	Appropriately Formatted and organized.	Written work is very well formatted and organized.
VIII Technical Writing	Poor technical writing.	Minimal use of technical language.	Reasonable use of technical language.	Appropriate use of technical language.	Commendable use of technical language.

D.6 Rubric for Semester 2 Final Evaluation

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project



Semester 2 (8th/Spring Semester) Final Evaluation (Weightage - 20%)

Project Title: _____

S. No	Student Name	Roll No.	I Relevance / Content (8)	II Organization and Delivery (8)	III Design / Layout (8)	IV Time Management (8)	V Question / Answers (8)	Weighted Average Score (40)
			PLO-10	PLO-10	PLO-10	PLO-10	PLO-10	
1								
2								
3								
4								

Use Rubric FYDP-OBE-06 for each student.

*Weighted Average Score = [PLO-10 (%) * 8 + PLO-10 (%) * 8 + PLO-10 (%) * 8 + PLO-10 (%) * 8 + PLO-10 (%) * 8] / 100*

FYDP Supervisor

FYDP Examiner

Chairperson

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project

Rubric for Semester 2 (8th/Spring Semester) Final Evaluation (Weightage - 20%))

	Levels of Attainment (%)				
	Unacceptable (0)	Just acceptable (25)	Basic (50)	Good (75)	Excellent (100)
I Relevance/ Content	Too limited relevance to program and low degree of difficulty.	Limited relevance to program and limited degree of difficulty.	Partially relevance to program and moderate degree of difficulty.	Relevant to program with adequate degree of difficulty.	Completely relevant to program and high degree of difficulty.
II Organization & Delivery	No participation.	Lacks confidence with weak preparation, organization, and delivery.	Partially confident with reasonable preparation, organization, and delivery.	Comfortable presentation with adequate preparation, organization, and delivery.	Confident and comfortable presentation with exceptional preparation, organization, and delivery.
III Design/ Layout	Inappropriate illustrations and non- pleasing layout.	Poor illustrations and non-aesthetic layout.	Most illustrations are appropriate but layout is cluttered.	Illustrations are appropriate and good space management.	Very well presented illustrations. Layout is pleasing to the eye.
IV Time Management	Noticeably exceed or fall short of the time allotted.	Speakers either rush or ramble excessively to meet the time allotted.	Speakers showed some difficulty in meeting the time limits.	Speakers showed no difficulty in meeting the time limits.	Comfortably use time allotted, without evidence of compensation.
V Questions/ Answers	Neither understands the question, nor could reply.	Adequate understanding of the question and reply.	Seemed to understand the main points of the question and replied to those with ease.	Clearly understood the question and replied with ease.	Understood the question in-depth and replied confidently.

D.7 FYDP Consolidated Grading Sheet

NED University of Engineering & Technology
Department of _____ Engineering
 <FYDP Course Code> Final Year Design Project



Final Grading / Spring Semester (100%)

Project Title: _____

S. No.	Student Name	Roll No.	7 th Semester			8 th Semester			Total (200)
			Project Proposal (12)	Semester Progress (20)	Final Evaluation (48)	Semester Progress (48)	Final Report (32)	Final Evaluation (40)	

 FYDP Coordinator

 FYDP Supervisor

 Chairperson

E Evaluation Rubrics for Psychomotor Domain

E.1 Rubric for Psychomotor Level 1

NED University of Engineering & Technology
Department of _____ Engineering



Course Code and Title: _____

Laboratory Session No. _____

Date: _____

Psychomotor Domain Assessment Rubric-Level P1					
Skill Sets	Extent of Achievement				
	0	1	2	3	4
<u>Equipment Identification</u> Sensory skill to <i>identify</i> equipment and/or its component for a lab work.	Not able to identify the equipment.	--	--	--	Able to identify equipment as well as its components.
<u>Equipment Use</u> Sensory skills to <i>describe</i> the use of the equipment for the lab work.	Never describes the use of equipment.	Rarely able to describe the use of equipment.	Occasionally describe the use of equipment.	Often able to describe the use of equipment.	Frequently able to describe the use of equipment.
<u>Safety Adherence</u> Adherence to <i>safety</i> procedures.	Doesn't adhere to safety procedures.	Slightly adheres to safety procedures.	Somewhat adheres to safety procedures.	Moderately adheres to safety procedures.	Fully adheres to safety procedures.
<u>Equipment Handling</u> <i>Equipment care</i> during the use.	Doesn't handle equipment with required care	Rarely handles equipment with required care	Occasionally handles equipment with required care	Often handles equipment with required care	Handles equipment with required care
<u>Group Work</u> Contributes in a group based lab work.	Never participates.	Rarely participates.	Occasionally participates and contributes.	Often participates and contributes.	Frequently participates and contributes.

Weighted CLO (Psychomotor Score)	
Remarks	
Instructor's Signature with Date	

E.2 Rubric for Psychomotor Level 2

NED University of Engineering & Technology
Department of _____ Engineering



Course Code and Title: _____

Laboratory Session No. _____ Date: _____

Psychomotor Domain Assessment Rubric-Level P2					
Skill Sets	Extent of Achievement				
	0	1	2	3	4
<u>Equipment identification</u> Sensory skill to <i>identify</i> equipment and/or its component for a lab work.	Not able to identify the equipment.	--	--	--	Able to identify equipment as well as its components.
<u>Equipment Use</u> Sensory skills to <i>describe</i> the use of the equipment for the lab work	Never describes the use of equipment.	Rarely able to describe the use of equipment.	Occasionally describe the use of equipment.	Often able to describe the use of equipment.	Frequently able to describe the use of equipment.
<u>Procedural Skills</u> <i>Displays</i> skills to act upon sequence of steps in lab work.	Not able to either learn or perform lab work procedure.	Able to slightly understand lab work procedure and perform lab work.	Able to somewhat understand lab work procedure and perform lab work.	Able to moderately understand lab work procedure and perform lab work.	Able to fully understand lab work procedure and perform lab work.
<u>Safety Adherence</u> Adherence to <i>safety</i> procedures.	Doesn't adhere to safety procedures.	Slightly adheres to safety procedures.	Somewhat adheres to safety procedures.	Moderately adheres to safety procedures.	Fully adheres to safety procedures.
<u>Equipment Handling</u> <i>Equipment care</i> during the use.	Doesn't handle equipment with required care.	Rarely handles equipment with required care.	Occasionally handles equipment with required care.	Often handles equipment with required care.	Handles equipment with required care.
<u>Group Work</u> Contributes in a group based lab work.	Never participates.	Rarely participates.	Occasionally participates and contributes.	Often participates and contributes.	Frequently participates and contributes.

Weighted CLO (Psychomotor Score)	
Remarks	
Instructor's Signature with Date	

E.3 Rubric for Psychomotor Level 3



Course Code and Title: _____

Laboratory Session No. _____

Date: _____

Psychomotor Domain Assessment Rubric-Level P3					
Skill Sets	Extent of Achievement				
	0	1	2	3	4
<u>Equipment Identification</u> Sensory skill to <i>identify</i> equipment and/or its component for a lab work.	Not able to identify the equipment.	--	--	--	Able to identify equipment as well as its components.
<u>Equipment Use</u> Sensory skills to <i>describe</i> the use of the equipment for the lab work.	Never describes the use of equipment.	Rarely able to describe the use of equipment.	Occasionally describe the use of equipment.	Often able to describe the use of equipment.	Frequently able to describe the use of equipment.
<u>Procedural Skills</u> <i>Displays</i> skills to act upon sequence of steps in lab work.	Not able to either learn or perform lab work procedure.	Able to slightly understand lab work procedure and perform lab work.	Able to somewhat understand lab work procedure and perform lab work.	Able to moderately understand lab work procedure and perform lab work.	Able to fully understand lab work procedure and perform lab work.
<u>Response</u> Ability to <i>imitate</i> the lab work on his/her own.	Not able to imitate the lab work.	Able to slightly imitate the lab work.	Able to somewhat imitate the lab work.	Able to moderately imitate the lab work.	Able to fully imitate the lab work.
<u>Observation's Use</u> <i>Displays</i> skills to perform related mathematical calculations using the observations from lab work.	Not able to use lab work observations into mathematical calculations.	Able to slightly use lab work observations into mathematical calculations.	Able to somewhat use lab work observations into mathematical calculations.	Able to moderately use lab work observations into mathematical calculations.	Able to fully use lab work observations into mathematical calculations.
<u>Safety Adherence</u> Adherence to <i>safety</i> procedures.	Doesn't adhere to safety procedures.	Slightly adheres to safety procedures.	Somewhat adheres to safety procedures.	Moderately adheres to safety procedures.	Fully adheres to safety procedures.
<u>Equipment Handling</u> <i>Equipment care</i> during the use.	Doesn't handle equipment with required care.	Rarely handles equipment with required care.	Occasionally handles equipment with required care.	Often handles equipment with required care.	Handles equipment with required care.
<u>Group Work</u> Contributes in a group based lab work.	Never participates.	Rarely participates.	Occasionally participates and contributes.	Often participates and contributes.	Frequently participates and contributes.
Weighted CLO (Psychomotor Score)					
Remarks					
Instructor's Signature with Date:					

F Evaluation Rubrics for Affective Domain

F.1 Rubric for Affective Level A3, PLO-6 The Engineer and Society

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 6 The Engineer and Society – Rubric for Affective Domain Assessment (A-3)

Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledges</u> responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Never acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Rarely acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Sometimes acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Often acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Always acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.
<u>Practices</u> responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Never practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Rarely practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Sometimes practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Often practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Always practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.
<u>Values</u> responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Never values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Rarely values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Sometimes values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Often values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Always values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.2 Rubric for Affective Level A4, PLO-6 The Engineer and Society

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 6 The Engineer and Society – Rubric for Affective Domain Assessment (A-4)

Level of Attainment

Criterion	0	1	2	3	4
<u>Acknowledges</u> responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Never acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Rarely acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Sometimes acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Often acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Always acknowledges responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.
<u>Practices</u> responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Never practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Rarely practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Sometimes practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Often practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Always practices responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.
<u>Values</u> responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Never values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Rarely values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Sometimes values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Often values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Always values responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.
<u>Displays</u> responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Never displays responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Rarely displays responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Sometimes displays responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Often displays responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.	Always displays responsibilities and attitudes, relevant to practice of engineering including; societal, health, safety, legal and cultural issues.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.3 Rubric for Affective Level A3, PLO-7 Environment and Sustainability

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 7 Environment and Sustainability – Rubric for Affective Domain Assessment (A-3)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledge</u> the importance of sustainability in the practice of engineering.	Never acknowledges the importance of sustainability in the practice.	Rarely acknowledges the importance of sustainability in the practice.	Sometimes acknowledges the importance of sustainability in the practice.	Often acknowledges the importance of sustainability in the practice.	Always acknowledges the importance of sustainability in the practice.
<u>Comply</u> with the concepts and principles of sustainability in the practice of engineering.	Never complies with the concepts and principles of sustainability in the practice of engineering.	Rarely complies with the concepts and principles of sustainability in the practice of engineering.	Sometimes complies with the concepts and principles of sustainability in the practice of engineering.	Often complies with the concepts and principles of sustainability in the practice of engineering.	Always complies with the concepts and principles of sustainability in the practice of engineering.
<u>Value</u> the benefits of sustainability in the practice of engineering.	Never values the benefits of sustainability in the practice of engineering.	Rarely values the benefits of sustainability in the practice of engineering.	Sometimes values the benefits of sustainability in the practice of engineering.	Often values the benefits of sustainability in the practice of engineering.	Always values the benefits of sustainability in the practice of engineering.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.4 Rubric for Affective Level A4, PLO-7 Environment and Sustainability

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 7 Environment and Sustainability – Rubric for Affective Domain Assessment (A-4)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledge</u> the importance of sustainability in the practice of engineering.	Never acknowledges the importance of sustainability in the practice.	Rarely acknowledges the importance of sustainability in the practice.	Sometimes acknowledges the importance of sustainability in the practice.	Often acknowledges the importance of sustainability in the practice.	Always acknowledges the importance of sustainability in the practice.
<u>Comply</u> with the concepts and principles of sustainability in the practice of engineering.	Never complies with the concepts and principles of sustainability in the practice of engineering.	Rarely complies with the concepts and principles of sustainability in the practice of engineering.	Sometimes complies with the concepts and principles of sustainability in the practice of engineering.	Often complies with the concepts and principles of sustainability in the practice of engineering.	Always complies with the concepts and principles of sustainability in the practice of engineering.
<u>Value</u> the benefits of sustainability in the practice of engineering.	Never values the benefits of sustainability in the practice of engineering.	Rarely values the benefits of sustainability in the practice of engineering.	Sometimes values the benefits of sustainability in the practice of engineering.	Often values the benefits of sustainability in the practice of engineering.	Always values the benefits of sustainability in the practice of engineering.
<u>Integrate</u> a commitment to sustainability principles in everyday practice.	Never integrates a commitment to sustainability principles in everyday practice.	Rarely integrates a commitment to sustainability principles in everyday practice.	Sometimes integrates a commitment to sustainability principles in everyday practice.	Often integrates a commitment to sustainability principles in everyday practice.	Always integrates a commitment to sustainability principles in everyday practice.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.5 Rubric for Affective Level A3, PLO-8 Ethics

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 8 Ethics – Rubric for Affective Domain Assessment (A-3)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledge</u> the importance of ethical behavior in the practice of engineering.	Never acknowledges the importance of ethical behavior in the practice of engineering.	Rarely acknowledges the importance of ethical behavior in the practice of engineering.	Sometimes acknowledges the importance of ethical behavior in the practice of engineering.	Often acknowledges the importance of ethical behavior in the practice of engineering.	Always acknowledges the importance of ethical behavior in the practice of engineering.
<u>Comply</u> with the code of ethics and requirements.	Never complies with code of ethics and requirements.	Rarely complies with code of ethics and requirements.	Sometimes complies with code of ethics and requirements.	Often complies with code of ethics and requirements.	Always complies with code of ethics and requirements.
<u>Value</u> ethical behavior in the practice of engineering.	Never values ethical behavior in the practice of engineering.	Rarely values ethical behavior in the practice of engineering.	Sometimes values ethical behavior in the practice of engineering.	Often values ethical behavior in the practice of engineering.	Always values ethical behavior in the practice of engineering.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.6 Rubric for Affective Level A4, PLO-8 Ethics

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 8 Ethics – Rubric for Affective Domain Assessment (A-4)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledge</u> the importance of ethical behavior in the practice of engineering.	Never acknowledges the importance of ethical behavior in the practice of engineering.	Rarely acknowledges the importance of ethical behavior in the practice of engineering.	Sometimes acknowledges the importance of ethical behavior in the practice of engineering.	Often acknowledges the importance of ethical behavior in the practice of engineering.	Always acknowledges the importance of ethical behavior in the practice of engineering.
<u>Comply</u> with the code of ethics and requirements.	Never complies with code of ethics and requirements.	Rarely complies with code of ethics and requirements.	Sometimes complies with code of ethics and requirements.	Often complies with code of ethics and requirements.	Always complies with code of ethics and requirements.
<u>Value</u> ethical behavior in the practice of engineering.	Never values ethical behavior in the practice of engineering.	Rarely values ethical behavior in the practice of engineering.	Sometimes values ethical behavior in the practice of engineering.	Often values ethical behavior in the practice of engineering.	Always values ethical behavior in the practice of engineering.
<u>Adhere</u> to ethical behavior in accordance with the code of ethics and requirements.	Never adheres to ethical behavior in accordance with the code of ethics and requirements.	Rarely adheres to ethical behavior in accordance with the code of ethics and requirements.	Sometimes adheres to ethical behavior in accordance with the code of ethics and requirements.	Often adheres to ethical behavior in accordance with the code of ethics and requirements.	Always adheres to ethical behavior in accordance with the code of ethics and requirements.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.7 Rubric for Affective Level A3, PLO-9 Individual and Team Work

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 9 Individual and Teamwork – Rubric for Affective Domain Assessment (A-3)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledge</u> the importance of teamwork, leadership, diversity and inclusion.	Never acknowledges the importance of teamwork, leadership, diversity and inclusion.	Rarely acknowledges the importance of teamwork, leadership, diversity and inclusion.	Sometimes acknowledges the importance of teamwork, leadership, diversity and inclusion.	Often acknowledges the importance of teamwork, leadership, diversity and inclusion.	Always acknowledges the importance of teamwork, leadership, diversity and inclusion.
<u>Practice</u> concepts and principles of teamwork, leadership, diversity and inclusion.	Never practices concepts and principles of teamwork, leadership, diversity and inclusion.	Rarely practices concepts and principles of teamwork, leadership, diversity and inclusion.	Sometimes practices concepts and principles of teamwork, leadership, diversity and inclusion.	Often practices concepts and principles of teamwork, leadership, diversity and inclusion.	Always practices concepts and principles of teamwork, leadership, diversity and inclusion.
<u>Value</u> the need for teamwork, leadership, diversity and inclusion.	Never values the need for teamwork, leadership, diversity and inclusion.	Rarely values the need for teamwork, leadership, diversity and inclusion.	Sometimes values the need for teamwork, leadership, diversity and inclusion.	Often values the need for teamwork, leadership, diversity and inclusion.	Always values the need for teamwork, leadership, diversity and inclusion.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.8 Rubric for Affective Level A4, PLO-9 Individual and Team Work

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____ Roll No.: _____ Assignment Title: _____

PLO 9 Individual and Teamwork – Rubric for Affective Domain Assessment (A-4)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledge</u> the importance of teamwork, leadership, diversity and inclusion.	Never acknowledges the importance of teamwork, leadership, diversity and inclusion.	Rarely acknowledges the importance of teamwork, leadership, diversity and inclusion.	Sometimes acknowledges the importance of teamwork, leadership, diversity and inclusion.	Often acknowledges the importance of teamwork, leadership, diversity and inclusion.	Always acknowledges the importance of teamwork, leadership, diversity and inclusion.
<u>Practice</u> concepts and principles of teamwork, leadership, diversity and inclusion.	Never practices concepts and principles of teamwork, leadership, diversity and inclusion.	Rarely practices concepts and principles of teamwork, leadership, diversity and inclusion.	Sometimes practices concepts and principles of teamwork, leadership, diversity and inclusion.	Often practices concepts and principles of teamwork, leadership, diversity and inclusion.	Always practices concepts and principles of teamwork, leadership, diversity and inclusion.
<u>Value</u> the need for teamwork, leadership, diversity and inclusion.	Never values the need for teamwork, leadership, diversity and inclusion.	Rarely values the need for teamwork, leadership, diversity and inclusion.	Sometimes values the need for teamwork, leadership, diversity and inclusion.	Often values the need for teamwork, leadership, diversity and inclusion.	Always values the need for teamwork, leadership, diversity and inclusion.
<u>Display</u> effective teamwork and leadership, including support of diversity and inclusion.	Never displays effective teamwork and leadership, including support of diversity and inclusion.	Rarely displays effective teamwork and leadership, including support of diversity and inclusion.	Sometimes displays effective teamwork and leadership, including support of diversity and inclusion.	Often displays effective teamwork and leadership, including support of diversity and inclusion.	Always displays effective teamwork and leadership, including support of diversity and inclusion.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.9 Rubric for Affective Level A3, PLO-10 Communication

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 10 Communication – Rubric for Affective Domain Assessment (A-3)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledges</u> importance of effective and persuasive communication to technical and non-technical audiences.	Never acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.	Rarely acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.	Sometimes acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.	Often acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.	Always acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.
<u>Practice</u> effective and persuasive communication to technical and non-technical audiences.	Never practices effective and persuasive communication to technical and non-technical audiences.	Rarely practices effective and persuasive communication to technical and non-technical audiences.	Sometimes practices effective and persuasive communication to technical and non-technical audiences.	Often practices effective and persuasive communication to technical and non-technical audiences.	Always practices effective and persuasive communication to technical and non-technical audiences.
<u>Value</u> effective and persuasive communication to technical and non-technical audiences.	Never values effective and persuasive communication to technical and non-technical audiences.	Rarely values effective and persuasive communication to technical and non-technical audiences.	Sometimes values effective and persuasive communication to technical and non-technical audiences.	Often values effective and persuasive communication to technical and non-technical audiences.	Always values effective and persuasive communication to technical and non-technical audiences.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.10 Rubric for Affective Level A4, PLO-10 Communication

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 10 Communication – Rubric for Affective Domain Assessment (A-4)

Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledges</u> importance of effective and persuasive communication to technical and non-technical audiences.	Never acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.	Rarely acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.	Sometimes acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.	Often acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.	Always acknowledges the importance of effective and persuasive communication to technical and non-technical audiences.
<u>Practice</u> effective and persuasive communication to technical and non-technical audiences.	Never practices effective and persuasive communication to technical and non-technical audiences.	Rarely practices effective and persuasive communication to technical and non-technical audiences.	Sometimes practices effective and persuasive communication to technical and non-technical audiences.	Often practices effective and persuasive communication to technical and non-technical audiences.	Always practices effective and persuasive communication to technical and non-technical audiences.
<u>Value</u> effective and persuasive communication to technical and non-technical audiences.	Never values effective and persuasive communication to technical and non-technical audiences.	Rarely values effective and persuasive communication to technical and non-technical audiences.	Sometimes values effective and persuasive communication to technical and non-technical audiences.	Often values effective and persuasive communication to technical and non-technical audiences.	Always values effective and persuasive communication to technical and non-technical audiences.
<u>Display</u> effective and persuasive communication to technical and non-technical audiences.	Never displays effective and persuasive communication to technical and non-technical audiences.	Rarely displays effective and persuasive communication to technical and non-technical audiences.	Sometimes displays effective and persuasive communication to technical and non-technical audiences.	Often displays effective and persuasive communication to technical and non-technical audiences.	Always displays effective and persuasive communication to technical and non-technical audiences.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.11 Rubric for Affective Level A3, PLO-12 Lifelong Learning

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 12 Lifelong Learning – Rubric for Affective Domain Assessment (A-3)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledges</u> the need for lifelong learning.	Never acknowledges the need for lifelong learning.	Rarely acknowledges the need for lifelong learning.	Sometimes acknowledges the need for lifelong learning.	Often acknowledges the need for lifelong learning.	Always acknowledges the need for lifelong learning.
<u>Participates</u> in lifelong learning opportunities.	Never participates in lifelong learning opportunities.	Rarely participates in lifelong learning opportunities.	Sometimes participates in lifelong learning opportunities.	Often participates in lifelong learning opportunities.	Always participates in lifelong learning opportunities.
<u>Values</u> lifelong learning in the practice of engineering.	Never values lifelong learning in the practice of engineering.	Rarely values lifelong learning in the practice of engineering.	Sometimes values lifelong learning in the practice of engineering.	Often values lifelong learning in the practice of engineering.	Always values lifelong learning in the practice of engineering.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

F.12 Rubric for Affective Level A4, PLO-12 Lifelong Learning

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____

Student's Name: _____

Roll No.: _____

Assignment Title: _____

PLO 12 Lifelong Learning – Rubric for Affective Domain Assessment (A-4)					
Level of Attainment					
Criterion	0	1	2	3	4
<u>Acknowledges</u> the need for lifelong learning.	Never acknowledges the need for lifelong learning.	Rarely acknowledges the need for lifelong learning.	Sometimes acknowledges the need for lifelong learning.	Often acknowledges the need for lifelong learning.	Always acknowledges the need for lifelong learning.
<u>Participates</u> in lifelong learning opportunities.	Never participates in lifelong learning opportunities.	Rarely participates in lifelong learning opportunities.	Sometimes participates in lifelong learning opportunities.	Often participates in lifelong learning opportunities.	Always participates in lifelong learning opportunities.
<u>Values</u> lifelong learning in the practice of engineering.	Never values lifelong learning in the practice of engineering.	Rarely values lifelong learning in the practice of engineering.	Sometimes values lifelong learning in the practice of engineering.	Often values lifelong learning in the practice of engineering.	Always values lifelong learning in the practice of engineering.
<u>Establishes</u> a lifelong learning plan to support one's own professional development.	Never establishes a lifelong learning plan to support one's own professional development.	Rarely establishes a lifelong learning plan to support one's own professional development.	Sometimes establishes a lifelong learning plan to support one's own professional development.	Often establishes a lifelong learning plan to support one's own professional development.	Always establishes a lifelong learning plan to support one's own professional development.

Total Score = _____

Weighted Score (%) = _____

Instructor's Signature: _____

G Evaluation Rubric for Complex Engineering Activity

G.1 Rubric for Complex Engineering Activity

NED University of Engineering & Technology
Department of _____ Engineering



Course Code & Title: _____
Assessment Rubric for CEP

Student's Name: _____

Roll No.: _____

Criterion	Level of Attainment				
	Below Average (1)	Average (2)	Good (3)	Very Good (4)	Excellent (5)

Total Score = _____

Instructor's Signature: _____

H Checklist for Course File

H.1 Checklist for Course File



Course File submission Checklist

Course Code: _____ Course Title: _____

Class: _____ Batch: _____ Academic Session: _____

Course Teacher(s) - Theory: _____

Course Teacher(s) - Practical: _____

Item		✓/✗/NA (to be filled by the Course teacher)	✓/✗/NA (to be filled by the evaluator)
Section A			
OBE Course Profile			
Section-wise course timetable including theory, practical & consultation hours			
Course plan (signed)			
Faculty course review report			
Teaching feedback report			
Section B			
Schedule of quizzes/tests, assignments and final exam (as per course plan)			
Quiz(zes) / Test(s):	Question paper(s) with CLO mapping(s)		
	Samples of best, worst and average answer sheets		
Midterm Exam:	Question paper(s) with CLO mapping(s)		
	Samples of best, worst and average answer sheets		
Final Exam:	Question paper with CLO mapping(s)		
Assignment(s):	Problem statement(s) with CLO mapping(s)		
	Samples of best, worst and average answer sheets		
Section C			
CLO assessment sheet			
Section D			
Lecture notes			
Section E			
List & schedule of and complex engineering activities			
Complex Engineering Activity:m	Problem statement(s) with CLO mapping(s)		
	Evaluation rubric		
	Criteria-wise rubric evaluation sheet		
	Samples of best, worst and average answer sheets		
Section F			
List of practical sessions			
Sample workbooks (2-3, assessed)			

Submitted by:

Evaluated by:

 (Name & Signature)

 (Name & Signature)

I CQI Documents

I.1 Course Profile

NED University of Engineering and Technology
Department of _____ Engineering
Bachelors in _____ Engineering

Corrective Action Request (CAR) Form

CAR No: _____ Initiation Date: _____

It is intended to raise a CAR for: (strike out if not applicable)

Batch: _____	Semester: Spring / Fall / Summer 20____
Class: FE / SE / TE / BE	Section: A / B / C / D
Course Code: _____	Course Title: _____

Trigger: (Please describe reason for the request)

--

Corrective action by Departmental OBE Cell:

Action	Responsible Person / Body	Target Date

Post-Target Follow-up:

Date of Follow-up: _____

After follow-up, the following status is assigned to the request: (Tick any one)

- ☐ Corrective Action successfully implemented, CAR closed.
- ☐ Corrective Action unsuccessfully implemented, new CAR issued. New CAR No: _____
- ☐ Corrective Action not complete, target date extended, new CAR issued. New CAR No: _____

Additional Remarks: (if CAR is not closed)

--

Chairperson / Head of Departmental OBE Cell
Date: _____

OBE Coordinator

I.2 Corrective Action From

NED University of Engineering and Technology
Department of _____ Engineering
Bachelors in _____ Engineering

Corrective Action Request (CAR) Form

CAR No: _____ Initiation Date: _____

It is intended to raise a CAR for: (strike out if not applicable)

Batch: _____	Semester: Spring / Fall / Summer 20____
Class: FE / SE / TE / BE	Section: A / B / C / D
Course Code: _____	Course Title: _____

Trigger: (Please describe reason for the request)

--

Corrective action by Departmental OBE Cell:

Action	Responsible Person / Body	Target Date

Post-Target Follow-up:

Date of Follow-up: _____

After follow-up, the following status is assigned to the request: (Tick any one)

- ☐ Corrective Action successfully implemented, CAR closed.
- ☐ Corrective Action unsuccessfully implemented, new CAR issued. New CAR No: _____
- ☐ Corrective Action not complete, target date extended, new CAR issued. New CAR No: _____

Additional Remarks: (if CAR is not closed)

--

Chairperson / Head of Departmental OBE Cell
Date: _____

OBE Coordinator

I.3 CQI Summary Report

NED University of Engineering and Technology
Department of _____ Engineering
Bachelors in _____ Engineering

Continuous Quality Improvement (CQI) Summary Report

Semester: Spring / Fall / Summer 20____

Tick as appropriate:

Summary Statistics	Attached	N/A
Program Educational Objectives (PEOs)	<input type="checkbox"/>	<input type="checkbox"/>
Program Learning Outcomes (PLOs)	<input type="checkbox"/>	<input type="checkbox"/>
Course Learning Outcomes (CLOs)	<input type="checkbox"/>	<input type="checkbox"/>
Framework Component Revised	Yes (Attach the corresponding CAR)	No
Vision statement	<input type="checkbox"/>	<input type="checkbox"/>
Mission statement	<input type="checkbox"/>	<input type="checkbox"/>
Program Educational Objectives (PEOs)	<input type="checkbox"/>	<input type="checkbox"/>
Program Learning Outcomes (PLOs)	<input type="checkbox"/>	<input type="checkbox"/>
Course Learning Outcomes (CLOs)	<input type="checkbox"/>	<input type="checkbox"/>
Key Performance Indicator (KPI)	Not Achieved (Attach the corresponding CAR)	Achieved
Program Educational Objectives (PEOs)	<input type="checkbox"/>	<input type="checkbox"/>
Program Learning Outcomes (PLOs)	<input type="checkbox"/>	<input type="checkbox"/>
Course Learning Outcomes (CLOs)	<input type="checkbox"/>	<input type="checkbox"/>

Any Additional Remarks:

Chairperson
Date: _____