
Program learning Outcomes PLOs Assessment Plan

Electrical Engineering Program (EEP)
College of Engineering (CoE)
Northern Border University (NBU)

Prepared By
Quality Academic Accreditation Committee (QAAC)
2024/2025



I. Introduction

Assessment is a process aimed understanding and improving students' learning in both course level and program level. The process involves:

- 1- Setting criteria for both course and program delivery, these criteria may include:
 - a) Aimed learning outcomes for course and their associated learning outcomes for the academic program,
 - b) Assessment tools may be used for evaluating the outcomes, and
 - c) Level of achievement expected for the learning outcomes
- 2- Systematically gathering, analyzing, and interpreting evidence to determine how well student performance matches those criteria and standards
- 3- Using the resulting information to document, explain, and improve performance

II. Program Learning Outcomes (PLOs) Assessment Plan

The list of Program Learning Outcomes (PLOs) of the Electrical Engineering program are as follows:

Knowledge and Understanding	
K1	Demonstrate a coherent and broad body of knowledge in basic sciences, mathematics and concepts in the electrical engineering discipline
Skills	
S1	Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
S2	Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
S3	Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
S4	Communicate effectively with a range of audiences
Values, Autonomy, and Responsibility	
V1	Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
V2	Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
V3	Acquire and apply new knowledge as needed, using appropriate learning strategies

The process of PLOs Assessment and improvement Plan follows the cycle shown in Figure 1.

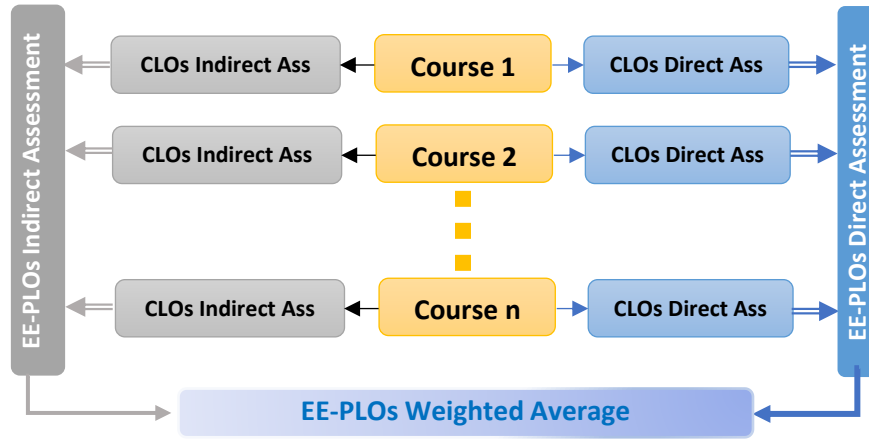


Figure – 1: Process of EE-PLOs Assessment

The mechanism by which EEP assesses its PLOs and evaluates their development against courses and academic programs is accurate and powerful since it is carried out automatically by means of Excel spreadsheet. It is worth noting that assessment of CLOs is conducted every semester, however assessment of PLOs is conducted optionally every semester and obligatory annually.

The Assessment plan of EE PLOs is given in the following Table:

N	Type of learning	Measurement plan
1	CLOs	Each Term the course is available
2	PLOs	Annually based on the selected Senior Courses

The table below outlines the Senior courses selected to measure EE-PLOs in each term of the 2024/2025 academic year. The newly developed program's impact on PLO assessment beginning in academic year 2025/2026, when the first cohort of students reaches their senior years (4th and 5th years of the program).

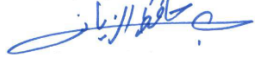





Senior Courses		AY – 2024/2025	
Code	Title	Semester 1	Semester 2
1402306	Electrical Measurements and Instrumentation	✓	
1402360	Electromechanical Energy Conversion I	✓	
1402350	Electrical Power Systems I	✓	✓
1402300	Numerical Methods in Engineering	✓	
1402340	Principles of Automatic Control	✓	✓

1402361	Electromechanical Energy Conversion II		✓
1402362	Machines lab	✓	✓
1402322	Microprocessors and microcontrollers	✓	
1402454	Power systems lab		✓
1402411	Power Electronic I	✓	
1402451	Electrical Power Systems II	✓	✓
1402498	B.SC. Project 1	✓	✓
1402452	Power Transmission and Distribution	✓	
1402453	Switchgear and Protection of Power System I	✓	✓
1402430	Introduction to Communications	✓	✓
1402499	B.SC. Project 2	✓	✓

The following table illustrates the alignment of each Senior course with the corresponding EE PLOs. The alignment is copied from the EE Program specification document. The alignment levels are not consistent. We have adopted a 20% weight for Introductory (I) courses, 35% for Practiced (P) courses, and 45% for Mastered courses.

Course code	EE Program Learning Outcomes							
	Knowledge K1	Skills S1 S2 S3 S4				Values V1 V2 V3		
1402350	35%	35%	35%					35%
1402300	20%	20%					20%	
1402306	35%	35%		35%		20%		
1402360	35%	35%			35%			35%
1402322	35%	35%		35%				20%
1402340	35%	35%	35%	35%			35%	20%
1402361	35%	35%				35%		35%
1402362	35%			35%	35%		35%	
1402451	45%	45%	45%					
1402454	45%			45%	45%			
1402411	45%	45%	45%	45%			45%	
1402498		45%	45%	45%	45%	45%	45%	45%
1402430	45%	45%			45%	45%		
1402452	45%	45%	45%		45%	45%		45%
1402453	45%	45%	45%	45%			45%	45%
1402499		45%	45%	45%	45%	45%	45%	45%

III. Signature of the EE-QAAC President and Members (11/09/2024)

	Name	Signature
Committee President	Dr. Hafedh Mahmoud Zayani	
Members	Dr. Ezzeddine Salah Touti	
	Dr. Hady El-Said Abdel-Maksoud	
	Dr. Habib Abdallah Kraiem	
	Dr. Ahmed Mahmoud Agwa	
	Dr. Shaaban Mohamed Shaaban	
	Dr. Mohammed Turki Alruwaili	