Program Specification

Program Name: Electrical Engineering
Qualification Level : Seventh
Department: Electrical Engineering
College: Engineering
Institution: Najran University

Content

A. Program Identification and General Information

1. Program Main Location:

Main campus - Najran

2. Branches Offering the Program:

One branch: Electrical Engineering

3. Reasons for Establishing the Program:
(Economic, social, cultural, and technological reasons, and national needs and development, etc.)

- Electrical Engineering is a discipline of interest and demand locally in Saudi Arabia, regionally in the Middle East and internationally worldwide.
- The increased demand on engineering education all over the Kingdom of Saudi Arabia.
- The development plan of the Kingdom of Saudi Arabia needs more Electrical engineers.
- The nature of the south of the Kingdom needs more electrical engineers, since it has several power stations and factories with modern design.
- The required upswing in Najran city needs many electrical engineers for the increased engineering constructions.

4. Total Credit Hours for Completing the Program: (132 **)**

132 credit hours without the preparatory year

5. Learning Hours: (5300)
The length of time that a learner takes to complete learning activities that lead to achievement of program learning outcomes, such as study time, homework assignments, projects, preparing presentations, library times)

The actual learning hours of the offered program is 5300 hours

6. Professional Occupations/Jobs:

- Teaching assistant in Electrical or Electronics departments in a university.
- Teacher in Electrical or Electronics department in technical colleges.
- Operator in governmental and private electrical companies.
- Operator in Electric power stations.
- Operator in lighting and wiring buildings.
- Operator in Electrical control of industrial machinery.
- Designer in Electrical Engineering.
- Operators in PLC software and control systems.
- Designer of low voltage Electrical systems.

7. Major Tracks/Pathways (if any)**:**

Major track/pathway	Credit hours (For each track)	Professional Occupations/Jobs (For each track)
1. Electrical Engineering	132	Designer/operator/teaching assistant in Electrical Engineering
2.		

8. Intermediate Exit Points/Awarded Degree (if any)**:**

Intermediate exit points/awarded degree	Credit hours
1. Not applicable	
2.	
3.	

B. Mission, Goals, and Learning Outcomes

1. Program Mission:

Electrical Engineering program is committed to:

- Provide students with an accredited electrical engineering education of high quality standards.
- Prepare graduates who possess excellent knowledge and strong competent skills, uphold professional attitudes necessary in fulfilling their responsibilities towards the Almighty, society, and meet the industry's expectations.
- Conduct high quality applied electrical engineering research using the best modern technology.
- Provide innovative solutions for electrical engineering problems which contribute to the sustainable development.
- Build knowledge based society, nationally and internationally.

2. Program Goals:

Goals of Electrical Engineering program:

- Provide high quality electrical engineering education recognized nationally and internationally.
- Conduct excellent applied scientific electrical engineering research, contribute to solving electrical engineering problems and meet nation's needs.
- Engage with his profession and community and continue to develop professionally, socially and personally.

3. Relationship between Program Mission and Goals and the Mission and Goals of the Institution/College.

The mission of Najran University is: "*Offering teaching and learning that address the needs of society and the labor market; effective contribution to sustainable development through conducting applied research and optimal use of modern technologies; and establishing partnerships at the local, regional and global levels*".

The vision and mission of Najran University are posted on its website at:
https://portal.nu.edu.sa/en/web/guest/university-mission

The mission of Najran University focuses mainly on five Key Components (KCs) as shown in Table 1.

Table 1: Key Components of the Mission of College of Engineering

Code of Key Component	Key Component of the mission of Najran University
KC1	To provide distinctive education
KC2	To meet the needs of society and the labor market
KC3	To conduct applied research and the optimal use of modern technologies
KC4	To contribute effectively to the sustainable development
KC5	To be active partnership at the local, regional and global levels

These key components are depicted in Figure 1 below.

Figure 1. Analysis of the mission of Najran University into five key components

The mission statement of College of Engineering also published on the university website at: https://engineering.nu.edu.sa/en/electrical/-vesion-mission. The mission of College of Engineering is divided into five key components (KCs) as shown in Table 2.

Table 2: Key Components of the Mission of College of Engineering

Code of Key Components	Key Component of the mission of College of Engineering
KC1	To provide our students with an accredited engineering education of high-quality standards.
KC2	To generate graduates possessing excellent knowledge and strong, competent skills and uphold professional attitudes necessary in fulfilling their responsibilities towards Almighty, clients and society and meet the industry expectation.
KC3	To conduct high-quality applied research using the best modern technology
KC4	To provide innovative solution which contributes to the sustainable and comprehensive development
KC5	To build the knowledge-based society, nationally and internationally

The mission of Electrical Engineering Program can also be divided into five key components as shown in the Figure 2.

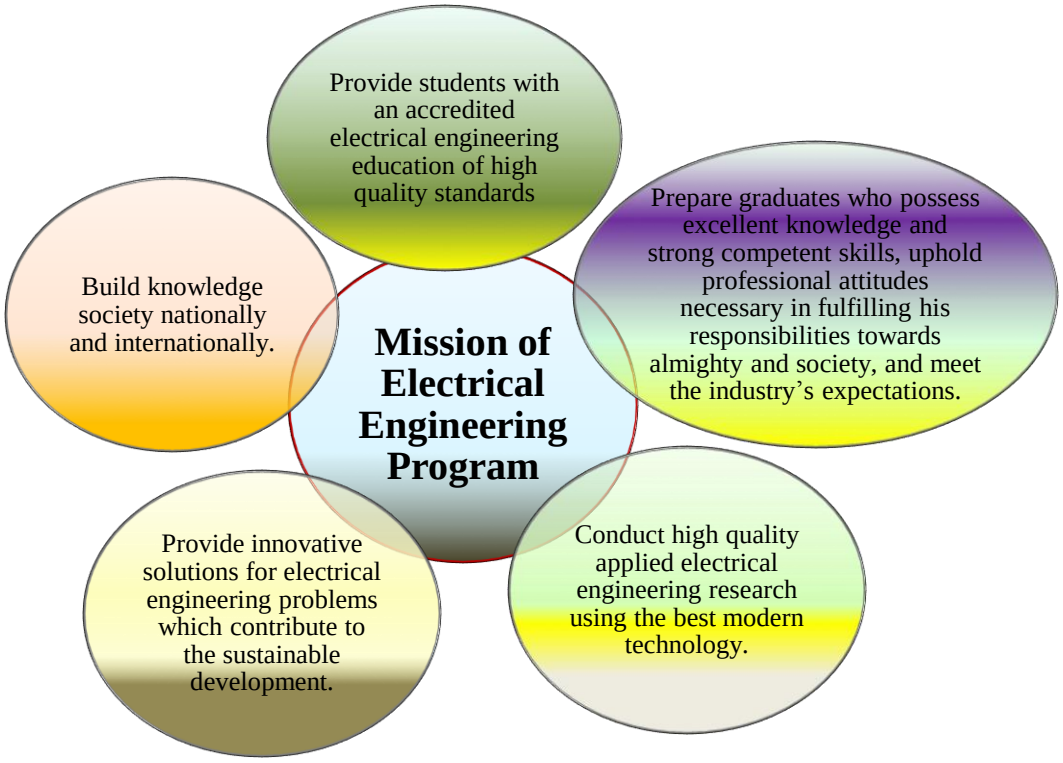

Figure 2. Analysis of the mission of Electrical Engineering program into five key components

The mission of the Electrical Engineering program is consistent with and supports the mission of the institution. The matrices shown in Table 3, Table 4 and Table 5 display the alignment between the mission of the College of Engineering and the institution and the Electrical Engineering Program and the institution, respectively. The relation is shown in diagonal one to one matrices.

Table 3: Mapping of Mission Key Components of Najran University with that of College of Engineering.

Mission of the University / **Mission of College of Engineering**	Provide distinctive education	Meets the needs of society and the labor market	Applied research and the optimal use of modern technologies	Contributes effectively to the sustainable development	Active partnership at the local, regional and global levels
To provide our students with an accredited engineering education of high-quality standards.	√				
To generate graduates possesses excellent knowledge and strong, competent skills and uphold professional attitudes necessary in fulfilling their responsibilities towards Almighty, clients and society and meet the industry expectation.		√			
To conduct high-quality applied research using the best modern technology			√		

To provide innovative solution which contributes to the sustainable and comprehensive development				√	
To build the knowledge-based society, nationally and internationally					√

Table 4: Mapping of Mission key Components of Najran University with that of Electrical Engineering Program.

Mission of the University / **Mission of Electrical Engineering Program**	Provide distinctive education	Meets the needs of society and the labor market	Applied research and the optimal use of modern technologies	Contribute effectively to the sustainable development	Active partnership at the local, regional and global levels
To provide students with an accredited Electrical Engineering education of high-quality standards	√				
To prepare graduates who possess excellent knowledge and strong, competent skills, uphold professional attitudes necessary in fulfilling their responsibilities towards the Almighty and society, and meet the industry's expectations.		√			
To conduct high-quality applied Electrical Engineering research using the best modern technology.			√		
To provide innovative solutions for Electrical Engineering problems which contributes to the sustainable development.				√	
To build knowledge-based society, nationally and internationally					√

Table 5: Mapping of Mission Key Components of Electrical Engineering Program with that of College of Engineering.

Mission of College of Engineering / Mission of Electrical Engineering Program	To provide our students with an accredited engineering education of high-quality standards.	To generate graduate possesses excellent knowledge and strong, competent skills and uphold professional attitudes necessary in fulfilling his responsibilities towards Almighty and society and meet the industry's expectations.	To conduct high-quality applied research using the best modern technology	To provide innovative solution which contributes to the sustainable and comprehensive development	To build the knowledge-based society nationally and internationally
To provide students with an accredited Electrical Engineering education of high quality standards	√				
To prepare graduates who possess excellent knowledge and strong competent skills, uphold professional attitudes necessary in fulfilling their responsibilities towards the Almighty and society, and meet the industry's expectations.		√			
To conduct high quality applied Electrical Engineering research using the best modern technology.			√		
To provide innovative solutions for Electrical Engineering problems which contribute to the sustainable development.				√	
To build knowledge society nationally and internationally					√

4. Graduate Attributes:

At the end of the program, the student will attain the following attributes:

1. Ability to undertake electrical engineering problems identification, formulation and solution.
2. Ability to utilize a systems approach to complex problems and to design and operational performance in the field of electrical engineering.
3. Proficiency in electrical engineering design systems to meet desired needs with realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.

4. Ability to conduct an engineering project.
5. Ability to communicate effectively, with the engineering team and the community at large.
6. Capacity for creativity and innovation.
7. Ability to understand professional and ethical responsibilities and committed to them.
8. Ability to function effectively as an individual and in multidisciplinary and multicultural teams, as a team leader or manager as well as an effective team member.
9. Capacity for life-long learning and professional development.
10. Ability to recognize the contemporary issues in electrical engineering disciplines.

5.Program learning Outcomes*

Knowledge :	
K1	Identify and apply knowledge of mathematics, sciences and engineering in electrical engineering problems.
K2	Recognize the broad education necessary to understand the impact of engineering solutions in economic, environmental and societal context, to improve the quality of life.
K3	Recognize the need for an ability to engage in life-long learning and continuing education of professional/engineering skills.
K4	Recognize the contemporary issues in electrical engineering disciplines.
Skills:	
S1	Design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering projects.
S2	Design an optimum electrical engineering system/component to meet desired needs with realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.
S3	Identify, formulate and solve electrical engineering problems to evaluate and synthesize information in order to provide best alternative solutions.
Competence:	
C1	Function effectively on multi-disciplinary electrical engineering teams.
C2	Act professionally, ethically and recognize the impact of liability issues in electrical engineering projects.
C3	Communicate effectively, prepare professionally written materials, graphical communications, and deliver professional oral and written presentations.
C4	Use techniques, skills and modern engineering tools necessary for electrical engineering practice.

* Add a table for each track and exit Point (if any)

C. Curriculum

1. Curriculum Structure

Program Structure	Required/ Elective	No. of courses	Credit Hours	Percentage
Preparatory Year	Required	12	27	17%
	Elective	-	-	-
Institution Requirements	Required	18	46	28.96%
	Elective	-	-	-
College Requirements	Required	7	18	11.32%
	Elective	-	-	-
Program Requirements	Required	27	63	39.62%
	Elective	-	-	-
Capstone Course/Project	Required	2	5	3.15%
Field Experience/ Internship	Required	1	0	0%
Others	-	-	-	-
Total		61	159	100%

* Add a table for each track (if any)

2. Program Study Plan

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 1	140TEC-3	Computer Skills	Required	-	3	Preparatory Year
	140MATH-2	Introduction of Mathematics	Required	-	2	Preparatory Year
	140SKL-2	Learning, Thinking and Research Skills	Required	-	2	Preparatory Year
	140ENGG-2	English Language : Reading Skills	Required	-	2	Preparatory Year
	141ENGG-2	English Language : Writing Skills	Required	-	2	Preparatory Year
	142ENGG-2	English Language : Listening and Speaking Skills	Required	-	2	Preparatory Year
	143ENGG-2	English Language : Grammars	Required	-	2	Preparatory Year
Level 2	150MAN-1	Occupational Ethics	Required	-	1	Preparatory Year
	150MATH-4	Algebraic Sciences	Required	-	4	Preparatory Year
	150SKL-2	Communication Skills	Required	-	2	Preparatory Year
	150ENGG-3	English Language: Speaking	Required	-	3	Preparatory Year
	151ENGG-2	Report Writing	Required	-	2	Preparatory Year
Level 3	101CHM-3	General Chemistry	Required	-	3	Institution
	104PHIS-4	Principles of General Physics	Required	-	4	Institution
	106MATH-3	Integral Calculus	Required	-	3	Institution
	107MATH-3	Algebra & Analytical Geometry	Required	-	3	Institution
	107ENG-3	Technical Writing for Engineers	Required	-	3	Institution

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 4	111ISL-2	Introduction to Islamic Culture 1	Required	-	2	Institution
	101GE-3	Statics	Required	107MATH-3	3	College
	203MATH-3	Advanced Calculus	Required	106MATH-3	3	Institution
	102GE-2	Introduction to Engineering Design	Required	-	2	College
	108ENG-2	Communication Skills for Engineers	Required	107ENGL-3	2	Institution
	105PHIS-4	Advanced Physics	Required	104PHYS-4	4	Institution
Level 5	112ISL-2	Introduction to Islamic Culture 2	Required	-	2	Institution
	204MATH-3	Differential Equations	Required	106MATH-3	3	Institution
	204GE-3	Computer Programming for Engineers	Required	-	3	College
	211EE-3	Fundamentals of Electric Circuits	Required	106MATH-3 105PHIS-4	3	Department
	212EE-3	Electromagnetism (1)	Required	105PHIS-4 203MATH-3	3	Department
	203GE-3	Engineering Drawing	Required	-	3	College
Level 6	214EE-3	Electric Circuit Analysis	Required	211EE-3	3	Department
	215EE-3	Electromagnetism (2)	Required	212EE-3	3	Department
	213EE-1	Electric Circuits Lab	Required	211EE-3	1	Department
	324STAT-3	Probability and Engineering Statistics	Required	-	3	Institution
	201ARAB-2	Arabic Language Skills	Required	-	2	Institution
	205GE-3	Dynamics	Required	101GE-3	3	College
	254MATH-3	Numerical Methods	Required	204MATH-3	3	Institution
Level 7	306GE-2	Engineering Economy	Required	-	2	College
	331EE-3	Logic Design	Required	-	3	Department
	332EE-1	Logic Design Laboratory	Required	-	1	Department
	321EE-3	Signals and Systems Analysis	Required	214EE-3	3	Department
	333EE-3	Basics of Electronic Devices	Required	214EE-3	3	Department
	334EE-1	Basic Electronics Laboratory	Required	-	1	Department
	325EE-3	Electrical Machines	Required	214EE-3 212EE-3	3	Department
Level 8	341EE-3	Communications Principles	Required	321EE-3	3	Department
	342EE-1	Communications Lab	Required	-	1	Department
	323EE-3	Automatic Control	Required	321EE-3	3	Department
	324EE-1	Automatic Control Lab	Required	-	1	Department
	335EE-3	Introduction to Microprocessors	Required	331EE-3	3	Department
	336EE-1	Microprocessor and Microcontroller Lab	Required	-	1	Department
	351EE-3	Computer Programming for Electrical Engineering	Required	204GE-3	3	Department
	113ISL-2	Islamic Culture 3	Required	-	2	Institution
	490EE-0	Summer field-training *	Required	-	0	Department
Level 9	491EE-2	Graduation Project I	Required	323EE-3 351EE-3	2	Department
	426EE-3	Fundamentals of Power Systems	Required	214EE-3	3	Department
	416EE-3	Electrical Measurements	Required	213EE-1	3	Department
	437EE-3	Digital Signal Processing	Required	321EE-3	3	Department
	422EE-3	Electromechanical Energy Conversion	Required	325EE-3	3	Department
	202ARAB-2	Arabic Writing	Required	-	2	Institution
	492EE-3	Graduation Project II	Required	491EE-2	3	Department
	407GE-2	Management of Engineering	Required	306GE-2	3	College

Level	Course Code	Course Title	Required or Elective	Pre-Requisite Courses	Credit Hours	Type of requirements (Institution, College or Department)
Level 10		Projects				
	427EE-3	Electric Drives	Required	323EE-3	3	Department
	417EE-3	Utilization of Electric Energy	Required	426EE-3	3	Department
	428EE-3	Applied Control	Required	323EE-3	3	Department
	114ISL-2	Islamic Culture 4	Required	-	2	Institution

* The summer field training is required for graduate without credit and will be registered after the eighth level
**Include additional levels if needed
*** Add a table for each track (if any)

3. Course Specifications

Insert hyperlink for all course specifications using NCAAA template

T4 Course Specification 211EE-
T4 Course Specification 212EE-
T4 Course Specifications -2018
T4 Course Specification 213EE-
T4 Course Specification 214EE-
T4 Course Specification 321EE-
T4 Course Specifications 333 E
T4 Course Specification 336EE-
T4 Course Specification 342EE-
T4 Course Specifications 331 E
T4 Course Specifications - 335
New-T4 Course Specifications - EE4
T4 Course Specification 416EE-
T4 Course Specification 422EE-
T4 Course Specification 426EE-
T4 Course Specification 417EE-
T4 Course Specification 427EE-
T4 Course Specification 492EE-
T4 Course Specification 341EE-
T4 Course Specifications 428EE
T4 Course Specification 325EE-
T4 Course Specification 334 EE
T4 Course Specification 416EE-
T4 Course Specification 324EE-
T8_ FIELD EXPERIENCE SPECIFI
T4 Course Specification 332EE-
T4 Course Specification 215EE-
T4 Course Specification 351EE-
New-T4 Course Specifications - EE-3
T4 Course Specification 437EE-

4. Program learning Outcomes Mapping Matrix

Align the program learning outcomes with program courses, according to the following desired levels of performance (**I = Introduced, P = Practiced, M = Mastered)**

Course code & No.	Program Learning Outcomes										
	Knowledge				Skills			Competence			
	K1	K2	K3	K4	S1	S2	S3	C1	C2	C3	C4
140TEC-3	I										
140MATH-2	I										
140SKL-2	I										
140ENGG-2	I										
141ENGG-2	I										
142ENGG-2	I										
143ENGG-2	I										
150MAN-1	I										
150MATH-4	I										
150SKL-2	I										
150ENGG-3	I										
151ENGG-2	I										
101CHM-3	I										I
104PHIS-4	I				I						
106MATH-3	I										
107MATH-3	I									I	
107ENG-3	I								I		
111ISL-2									I		
101EE-3	I	I	I				I				I
203MATH-3	I										
105PHIS-4	I				I	I					I
108ENG-2										I	
203GE-3			I						I	I	I
112ISL-2									I		
204GE-3	I						I				
204GE-3	I						I				
211EE-3	I		I		I						
212EE-3	I					I					
203GE-3			I						I	I	I
214EE-3	I					P					
215EE-3	P			P		P				P	
213EE-1	P				P			P			P
324STAT-3	I										
201ARAB-2	I										
205GE-3	I					I					I
254MATH-3	I										
306GE-2	P	P				P		P		P	
331EE-3	P			P		P	P				P
332EE-1	P				P		P		P	P	
321EE-3	I			I		P	P				P
333EE-3	P						P				

Course code & No.	Program Learning Outcomes										
	Knowledge				Skills			Competence			
	K1	K2	K3	K4	S1	S2	S3	C1	C2	C3	C4
334EE-1	P				P			P		P	P
325EE-3	P				P	P		P		P	P
341EE-3	P	P	P	P		P		P		P	P
342EE-1	P		P		P	P	P	P		P	P
323EE-3	P						P				P
324EE-1	P				P	P	M	P		P	P
335EE-3	P				M		M	M		M	M
336EE-1	P										M
351EE-3	P				M	M	M	M		M	M
113ISL-2	I				M				I		M
490EE-0	M	M	M		M			M	M	M	
491EE-2	M	M	M	M		M		M	M	M	M
426EE-3	M			M			M				M
416EE-3	M		M	M	M		M	M			M
437EE-3	M			M		M	M	M			M
422EE-3	M	M		M		M	M			M	
202ARAB-2	I										M
492EE-3	M	M	M								
407GE-2	P	P				P		P		P	
427EE-3	M	M	M	M		M	M				M
417EE-3	M						M				M
428EE-3	M	M				M	M		M	M	M
114ISL-2									I		

* Add a table for each track (if any)

5. Teaching and learning strategies to achieve program learning outcomes

Describe policies, teaching and learning strategies, learning experience, and learning activities, including curricular and extra-curricular activities, to achieve the program learning outcomes.

Program learning Outcomes		Teaching and Learning Strategies
Knowledge		
K1	Identify and apply knowledge of mathematics, sciences and engineering in electrical engineering problems.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through

		discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, 335EE-3 introduction to microprocessors, 331EE-3 logic design, and 428EE-3 applied control heavily use these teaching strategies.
K2	Recognize the broad education necessary to understand the impact of engineering solutions in economic, environmental and societal context, to improve the quality of life.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, and 334EE-3 introduction to microprocessors heavily use these teaching strategies.
K3	Recognize the need for an ability to engage in life-long learning and continuing education of professional/engineering skills.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website.

		Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 428EE-3applied control, 341EE-3 communications principles, 336EE-1microprocessor and microcontroller lab, and 324EE-1 automatic control lab heavily use these teaching strategies.
K4	Recognize the contemporary issues in electrical engineering disciplines.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 335EE-3 introduction to microprocessors, 331EE-3 logic design, 321EE-3 logic design laboratory, 215EE-3 electromagnetism (II), 341EE-3 communications principles, and 47EE-3 digital signal processing heavily use these teaching strategies.
Skills		
S1	Design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering projects.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group

		work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 335EE-3 introduction to microprocessors, 342EE-1 communications lab, and 351EE-3 computer programming for electrical engineering heavily use these teaching strategies.
S2	Design an optimum electrical engineering system/component to meet desired needs with realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 215EE-3 electromagnetism (II), 332EE-2 logic design laboratory, and 335EE-3 introduction to

		microprocessors heavily use these teaching strategies.
S3	Identify, formulate and solve electrical engineering problems to evaluate and synthesize information in order to provide best alternative solutions.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, 332EE-2 logic design laboratory, and 321EE-3 signals and systems analysis heavily use these teaching strategies.
Competence		
C1	Function effectively on multi-disciplinary electrical engineering teams.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all

		assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Coverage of contemporary issues through discussions in classrooms. - Courses like 491EE-2 graduation project (I), and 492EE-3 graduation project (II) heavily use these teaching strategies.
C2	Act professionally, ethically and recognize the impact of liability issues in electrical engineering projects.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, and 437EE-3 digital signal processing heavily use these teaching strategies.
C3	Communicate effectively, prepare professionally written materials, graphical communications, and deliver professional oral and written presentations.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through

		discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, and 204GE-3 computer programming for engineers heavily use these teaching strategies.
C4	Use techniques, skills and modern engineering tools necessary for electrical engineering practice.	- Lectures, which include explanation of basic concepts, discussion of textbook contents, problem formulation/problem solving, computer programming, demonstration of relevant software - Laboratory work, which includes individual work with each on a set of equipment, group of students working on a set of equipment, coordinated group work as teams, and demonstration of experiments by the instructor. - PC or software requirements: course related software for homework, use of laptops in classrooms. - Term projects, which include report writing, design project, or teamwork project - Coverage of contemporary issues through discussions in classrooms. - Students can also benefit from E-learning resources (which can be reached on http://lms.nu.edu.sa/). All teaching materials are posted on Blackboard website. Homework assignments, quizzes, reports, computer exercises, as well as solutions to all assignments, midterm exams, tutorials, and solutions to selected problems are posted on the website. Students can also form discussion groups and they can post questions to the course instructor or discuss solutions with other students. - Courses like 491EE-2 graduation project (I), 492EE-3 graduation project (II), 334EE-1 basic electronics laboratory, 416EE-3 electrical measurements, 332EE-1 logic design laboratory, and 335EE-3 introduction to microprocessors heavily use these teaching strategies.

6. Assessment Methods for program learning outcomes.

Describe assessment methods (Direct and Indirect) that can be used to measure achievement of program learning outcomes in every domain of learning.

Program learning Outcomes		Assessment Methods
Knowledge		
K1	Identify and apply knowledge of mathematics, sciences and engineering in electrical engineering problems.	- Electrical Engineering program staff use a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
K2	Recognize the broad education necessary to understand the impact of engineering solutions in economic, environmental and societal context, to improve the quality of life.	- Electrical Engineering program staff use a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer

			programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
	K3	Recognize the need for an ability to engage in life-long learning and continuing education of professional/engineering skills.	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
	K4	Recognize the contemporary issues in electrical engineering disciplines.	- Electrical Engineering program staff use a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high

		percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
Skills		
S1	Design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering projects.	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in

		classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
S2	Design an optimum electrical engineering system/component to meet desired needs with realistic constraints, such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
S3	Identify, formulate and solve electrical engineering problems to evaluate and synthesize information in order to provide best alternative solutions.	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes

		analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
Competence		
C1	Function effectively on multi-disciplinary electrical engineering teams.	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam.

		- **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
C2	Act professionally, ethically and recognize the impact of liability issues in electrical engineering projects.	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
C3	Communicate effectively, prepare professionally written materials, graphical communications, and deliver professional oral and written presentations.	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others.

		- Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
C4	Use techniques, skills and modern engineering tools necessary for electrical engineering practice.	- Electrical engineering program staff uses a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of attainment for each learning outcome. For this purpose, many assessment methods are used which include: - **Direct methods** - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others. - Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments. - Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom. - Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam. - **Indirect Methods** - **These can include the following:** 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)

D. Student Admission and Support:

1. Student Admission Requirements

Students who want to be admitted in the department of Electrical Engineering, Najran University, should satisfy the following requirements:

1. The student shall only be admitted to the University upon the calculation of his/her average as follows: 30% general aptitude, 30% achievement test and 40% general secondary (academic) if the student wishes to enroll in preparatory year. For all the other specializations, the average shall be calculated as follows: 30% aptitude and 70% general secondary.
2. The student should have obtained the general secondary certificate or its equivalent from the Kingdom or abroad.
3. No more than two academic years should have elapsed from the date of his/her obtaining such certificate or its equivalent.
4. The student should have a good conduct and proper behavior.
5. The student should successfully pass any exam or personal interview (if found).
6. The student should be medically fit.
7. The student should obtain approval from his authority to pursue his/her studies, if s/he works for any governmental or private body.
8. The student should not have been expelled from Najran University or any other university for academic or disciplinary reasons.
9. After the student is admitted, if it is turns out that he/she has already been expelled for disciplinary or academic reasons, his/her admission shall be considered as void.
10. The student meeting the requirements should present the documents stipulated by the Deanship of Admission and Registration at the University.
11. The student should not be enrolled for another university degree at the same university or at another university and should not have already obtained such degree.
12. Files of students who are late for admission tests (if found) shall be ruled out.
13. Files of students who are late for personal interviews (if found) and do not present an acceptable excuse shall be ruled out.

Students who are late in carrying out the admission procedures within the deadline set by the University, and who do not present an excuse acceptable.

Source: http://portal.nu.edu.sa/web/guest/admission-requirements

2. Guidance and Orientation Programs for New Students

In general, students applying to the Electrical Engineering program or any engineering program in the college of engineering are centrally admitted by the deanship of admission and registration based on the general requirements listed in the previous section.

The new students are not accepted directly to the Electrical Engineering program unless they spend one year in the Preparatory Year Program (PYP). University Council decides the number of students admitted for each academic year according to the recommendation of various academic colleges. The deanship of admissions and registration implements all policies coordinating with the colleges. Admission takes place in every semester; that is twice a year. The main aims of this PYP are:

a) To improve the students English language proficiency to make them eligible for the engineering education in English, this is the medium of instruction of the program.
b) To strengthen the students mathematical and physical analytical abilities.
c) To build engineering abilities even in control circumstances.
d) To improve computer skills of the students.

The duration of the PYP is one academic year, divided into two semesters (Level 1 and Level 2), in addition to a summer semester upon necessity. The PYP represents the first two levels (semesters). Electrical Engineering program consists of 8 levels spanned over a period of 4 years (level 3 to Level 10).

On successful completion of the PYP, the performance of students seeking admission to the Electrical Engineering program is evaluated based on the GPA in the PYP. A merit list of these students is prepared, and the department accepts the allocated number of students from the top of the list.

3. Student Counseling Services
(academic, career, psychological and social)

Academic counseling service in the college of engineering is a continuous process of educational partnership dedicated to the student's academic success. The Faculty members are committed to provide an advising system that guides the students to discover and achieve life goals, support various and equitable educational experiences, advances intellectuality and cultural development, motivates toward active participation, and overall creates them as self-directed learners and competent decision-makers.

a) Objectives of Academic Advising

1. To open a file for students that contains a biography of the student during his study at the university (student behavior during the study, student's activities, student's marks, etc.). Through this file the college can make assessment of the student and find appropriate solutions of the problems they face.
2. To help the students by planning an educational program consistent with their interests, abilities and needs of the labor market.
3. To encourage the outstanding students to enhance their success, direct them toward their abilities and invest their potentiality in areas of excellence in all aspects of their career.
4. To advise the students on the selection of courses appropriate for their level and abilities.
5. To guide the students to understand the university policies and procedures.
6. To remind the students regarding academic events (registration, addition, deletion, etc.).

b) Mechanism of Academic Advising

1. Each student has an academic advisor in order to follow up his academic progress and to help him and solve any problem irrespective of social or educational field. Each academic advisor provides high-quality advising services that promote students' success. Students enrolled in the department are divided into a number of groups with more than 8 students in each group, and then the academic advisors are assigned to those groups.
2. Each faculty member has more than 10 hours other than his teaching load, scheduled at a definite time to meet his students in his office, in order to solve the problems

asked by the students.

3. The office hour schedule for all faculty members are clearly fixed in front of the respective offices.
4. Students can also get some guidance and advice through the University website.

4. Support for Special Need Students
(low achievers, disabled, gifted and talented)

There are special facilities provided for the special need students in terms of their facilities include:

- Cars parking
- Special routes
- Toilets
- Lifts
- Classroom modifications: alternate seating arrangements
- Special education support modifications, adjustments, strategies, and services that may be provided to meet the needs of various exceptional students such as:
    1. Specific reading materials
    2. Test and exam support
    3. Attendance monitoring
    4. Behavior management
    5. Learning strategies
    6. Educational assistant support
    7. Technology support

E. Teaching and Administrative Staff

1. Needed Teaching and Administrative Staff

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
Professors	Electrical Engineering	– Control – Power Systems	PhD	2	-	-
Associate Professors	Electrical Engineering	– Control – Power Systems – Electronics – Communications	PhD	4	-	-
Assistant Professors	Electrical Engineering	– Control – Power Systems – Electronics – Communications	PhD	10	-	-
Lecturers	Electrical Engineering	– Power Systems – Communications – Computer	MSc	3	-	-
Teaching Assistants	Electrical Engineering	– Control – Power Systems – Electronics – Communications	Degree	2	-	-
Technicians and Laboratory Assistants	Electrical Engineering	– Control – Power Systems	Degree/Diploma	4	-	-

Academic Rank	Specialty		Special Requirements / Skills (if any)	Required Numbers		
	General	Specific		M	F	T
		– Electronics – Communications				
Administrative and Supportive Staff	Business and Administration	Secretary	Degree/Diploma	2	-	-
Others (specify)	Worker	Cleaner	-	1	-	-

2. Professional Development

2.1 Orientation of New Teaching Staff

Describe briefly the process used for orientation of new, visiting and part-time teaching staff

In addition to a brief introduction by the Chair, the head of the department also assigns one of the staff to give an orientation to the new member, which will thoroughly explain the program. In addition, the College arranges and organizes workshops and training program activities periodically, mostly for the newly recruited faculty members. A new faculty is given copies of the "The Undergraduate Study and Examination Regulations and the College catalogue which contains all information about the duties and responsibilities of the faculty, including the rights, privileges and code of conduct.

2.2 Professional Development for Teaching Staff

Describe briefly the plan and arrangements for academic and professional development of teaching staff (e.g., teaching & learning strategies, learning outcomes assessment, professional development, etc.)

a) Improvement of skills in teaching and student assessment

The Deanship of scientific research and developing and quality offer numerous workshops every semester on effective teaching, effective assessments, etc., to enhance the quality of teaching. This is in addition to workshops and presentations on this topic given by faculty members in the department. In addition, along the academic semester period there are several engineering public lectures are held for the students in the program, these lectures are to teach the computer programming and modern engineering technology.

1. There are several training courses for the staff members to improve their skills in their field and teaching process.
2. Staff members are following the modern technology teaching techniques, such that teaching using projectors which is fixed already in each class.
3. At the end of each semester, there are questionnaires for the students to get their feeding back concerning the subject, their teacher and their difficulties faced in each subject.

b) Other professional development including knowledge of research and developments in their field of teaching specialty

The Deanship of scientific research provides support to all the faculty members in the university through:

1. Research projects grants and administration.
2. Web-based Resources (research administration guide, policies, and forms).
3. Participation financial support in international conferences.

4. Workshop, seminars and training programs.
5. Teaching performance evaluation.

F. Learning Resources, Facilities, and Equipment

1. Learning Resources.

Mechanism for providing and quality assurance of learning resources (textbooks, references and other resource materials, including electronic and web-based resources, etc.)

- The instructor teaching the course identifies the requirements of textbooks and other materials for teaching.
- Faculty members search for texts on-line, learn of recommended texts in professional journals and from publishers and colleagues at conferences. Those teaching the same course meet and decide upon recommended texts and materials for the course and then submit their recommendations to the program chair for approval.
- The Undergraduate Committee, who may seek the opinion of the other faculty members, reviews the instructor's suggestions. The instructor, proposing the textbook for a course, is asked to review at least two textbooks on the subject and submit justifications for the chosen textbook. The department requests the Purchasing department to procure the textbooks selected by the department.
- Permission is sought from authors and then granted before photocopying excerpts of their works that will be included in handouts to be purchased by students
- Faculty members ensure that the library subscribes to the necessary databases that give students access to the journals that they need.
- Requests for purchases of new materials that should be included in the library's holdings are made at least two months before commencement of classes concerned.
- If a new book or reference or other materials are needed, then a request is sent to the program chair for approval.

2. Facilities and Equipment

(Library, laboratories, medical facilities, classrooms, etc.).

It is the responsibility of the undergraduate committee formed by the department to evaluate the adequacy of textbooks, and reference materials for each course. The undergraduate committee ensures that the books are current and contents most of the topics covered in syllabuses.

3. Arrangements to Maintain a Healthy and Safe Environment (According to the nature of the program)

- At the end of each of every semester, the instructor provides the Undergraduate Committee with a course review including any suggestions for textbook requirements. The instructor's suggestions are reviewed by the Undergraduate Committee, who may seek the opinion of the other faculty members. The instructor, proposing the textbook for a course, is asked to review at least two textbooks on the subject and submit justifications for the chosen textbook. The department requests the Purchasing department to procure the textbooks selected by the department.
- At the end of each semester, the students are asked to fill in a questionnaire including questions about the textbook.

G. Program Management and Regulations

1. Program Management

1.1 Program Structure

(including boards, councils, units, committees, etc.)

Electrical Engineering department flowchart is shown in Figure 3 below.

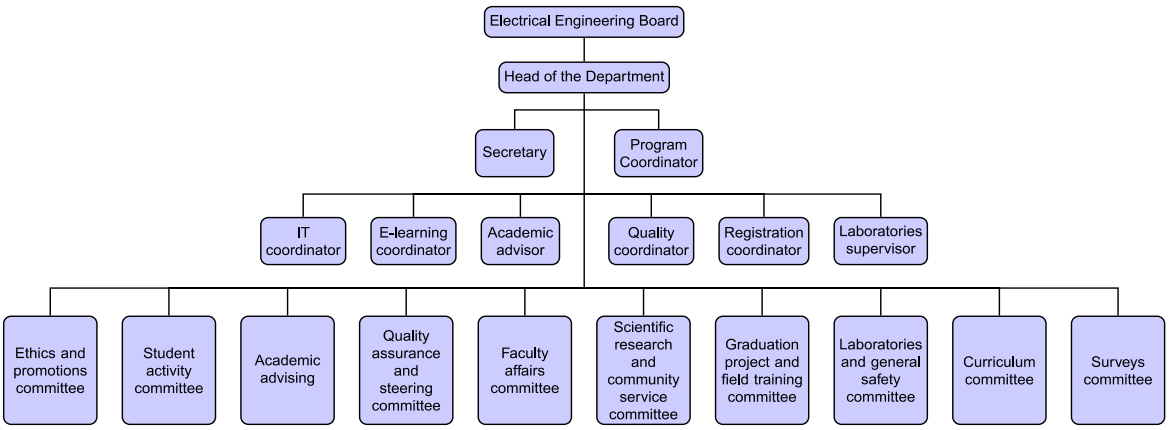

Figure 3. Electrical Engineering Department flowchart

1.2 Stakeholders Involvement

Describe the representation and involvement of stakeholders in the program planning and development. (students, professional bodies, scientific societies, alumni, employers, etc.)

Electrical Engineering program established the Program Advisory Committee (PAC). PAC is one of the main stakeholders of the electrical engineering program. They provide advice to the program by providing the current industrial trends and feedback about the program's graduates. The members of PAC are selected from the private and public industrial organizations as well as representatives from the academic fields.

The purposes of the PAC are to:

1. Encourage the communication between the program and private and public employers in the kingdom.
2. Convey current challenges facing electrical engineering field into the program future plan.
3. Help develop and guide the education and curriculum issues in the program.
4. Assessment and improvement of the academic programs.
5. Recent technologies directions, skills and knowledge provided by the program program's objectives and mission, as well as other pertinent issues.
6. To recognize achievements of alumni and other supporters of the program.
7. To assist in publicity and public relations concerning the programs of the college

The PAC meets once a year in the second semester of the academic year. The meeting will be 3-4 hours to discuss all issues related to the improvement of the program.

2. Program Regulations

Provide a list of related program regulations, including their link to online version: admission, study and exams, recruitment, appeals and complaint regulations, etc.)

- **Admission and registration regulations**
  Students who want to be admitted in the department of Electrical Engineering, Najran University, should satisfy the following requirements:

1. The student shall only be admitted to the University upon the calculation of his/her average as follows: 30% general aptitude, 30% achievement test and 40% general secondary (academic) if the student wishes to enroll in preparatory year. For all the other specializations, the average shall be calculated as follows: 30% aptitude and 70% general secondary.
2. The student should have obtained the general secondary certificate or its equivalent from the Kingdom or abroad.
3. No more than two academic years should have elapsed from the date of his/her obtaining such certificate or its equivalent.
4. The student should have a good conduct and proper behavior.
5. The student should successfully pass any exam or personal interview (if found).
6. The student should be medically fit.
7. The student should obtain approval from his authority to pursue his/her studies, if s/he works for any governmental or private body.
8. The student should not have been expelled from Najran University or any other university for academic or disciplinary reasons.
9. After the student is admitted, if it is turns out that he/she has already been expelled for disciplinary or academic reasons, his/her admission shall be considered as void.
10. The student meeting the requirements should present the documents stipulated by the Deanship of Admission and Registration at the University.
11. The student should not be enrolled for another university degree at the same university or at another university and should not have already obtained such degree.
12. Files of students who are late for admission tests (if found) shall be ruled out.
13. Files of students who are late for personal interviews (if found) and do not present an acceptable excuse shall be ruled out.

Students who are late in carrying out the admission procedures within the deadline set by the University, and who do not present an excuse acceptable

Source: https://portal.nu.edu.sa/en/web/guest/education-regulations

- **Study, exams and grading system regulations**

Article 9 of the Rules and Regulations of Undergraduate Study and Examinations and its Implementation Rules at Najran University is:
"A regular student is required to attend lectures and laboratory sessions. If his attendance is less than the limit determined by the University Council 75 precent of the lectures and laboratory sessions assigned for each course), the student will be barred from continuing the course and will be denied entrance to the respective final examination. A student who is denied entrance to the examination due to absences is considered to have failed that course and is given the grade DN in the course."

The students' performance is determined though the process of assignment of academic status. A student's academic status will be determined at the end of each semester and will appear on the transcript that shows his achievements throughout his undergraduate study. However, the summer session has no effect on academic status. A student's academic status may be any of the following two:

- Good Standing: This status is assigned to all students at the beginning of their course of study. Students are expected to maintain this standing till their graduation. This involves a minimum grade point average (GPA) of 2.00 out of 5.00 in the student's cumulative and semester GPA.
- Honors Degree: The first-class honors degree will be achieved by the students who score a cumulative grade from 4.75 to 5.00 upon graduation. The second-class honors degree will be to those who attain a cumulative grade between 4.35 and 4.75 upon graduation.

Source: https://engineering.nu.edu.sa/168

- **Recruitment Regulations**

The department has an established process for recruiting new faculty members in the areas needed.
The positions are posted with the specific requirements of qualifications and experience on the website of the college (http://portal.nu.edu.sa/en/web/engineering-college).

Each applicant should go through the following:
- Doing an interview.
- Giving a model lecture.
- Checking references.

The steps can be summarized as follow:
- There is a job posting on the web site of the university with the required staff members needed to join the program.
- A committee of faculty remembers has to review the CVs of the applicants according to their background, teaching experience and to the required field in the program.

High experience level and good qualifications of the applicants are selected to join the teaching staff members in the program.

- **Appeals and complaints regulations**

The student can submit any appeal or complaint through the following online feedback system:
https://engineering.nu.edu.sa/suggesstions

H. Program Quality Assurance

1. Program Quality Assurance System

Provide online link to quality assurance manual

The program quality assurance should be verified over the program that evaluation is correctly measured. The strategies used in the program for obtaining assessments of the overall quality of the program and achievement of its intended learning outcomes are from:

1) Current students and graduates of the program

- Direct assessment Methods
  - Electrical Engineering program staff use a variety of assessment methods to prove the effectiveness of teaching strategies and ascertain a high percentage of

attainment for each learning outcome. For this purpose, many assessment methods are used which include:

- Assessment of Course Learning Outcomes every semester (using CLOSO software): The data are collected from the performances of students enrolled in the courses.
- Midterm examinations, quizzes, and a final examination, which consist of descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others.
- Homework assignments which consist of reading exercises, numerical problems, report writing, descriptive questions, drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments.
- Bonus marks will be awarded on, for example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom.
- Negative marks will be applied due to, for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam.
- Performance Indicators, embedded questions and rubrics for each one of the learning outcomes (Once every assessment cycle): A set of performance indicators with a set of rubrics are used to evaluate student learning outcomes. Questions are embedded in exams and other assessment methods to collect students' performances. The data are collected from current students.

- Indirect Assessment Methods
  - Exit Survey: This survey is used to collect data from students who are about to graduate (By the end of each semester). The survey contains many questions related to the intended learning outcomes of the program. It also contains some questions related to other aspects of the program (Facilities, curriculum, advising system, etc.)
  - Alumni Survey: The graduates of the program give their opinions about the program educational objectives (Statements that describe what students will be able to do after few years of graduation). The data are collected from the alumni once a year.
  - The Program Curriculum Committee and Steering Committee evaluate the collected data and prepare findings. Actions to be implemented are then approved by the program and college councils.
  - Courses survey, which is conducted on all courses each semester and is inserted in the accreditation software CLOSO and analyzed. After each semester, all analysis data are submitted to the administrator of the accreditation software CLOSO and to the head of the department.

2) Independent advisors and evaluators

- Self-Assessment report reviewed by external experts.
- Professional Electrical Engineering societies' assessment.

3) Employers and other stakeholders

- Employer's surveys (Questionnaire are distributed to employers of our graduates).
- Employment rate and leadership positions.

2. Program Quality Monitoring Procedures

The department conducts its affairs through a number of standing committees in the department; each committee is entrusted with some duties and responsibilities. The quality of program is reviewed by the Program Assessment Committee. The Undergraduate Committee looks after the undergraduate curriculum, and makes changes as and when necessary to main the currency of the program. All faculty members are distributed in the standing committees, so that all participate in the academic affairs of the department. All decisions of the department are discussed in the Department Council meeting for approval of the department.

3. Arrangements to Monitor Quality of Courses Taught by other Departments.

The same procedure applied for Electrical Engineering quality monitoring is also applied for any course taught by other departments.

4. Arrangements Used to Ensure the Consistency between Main Campus and Branches (including male and female sections)

Not Applicable

5. Arrangements to Apply the Institutional Regulations Governing the Educational and Research Partnerships (if any).

Not Applicable

6. Assessment Plan for Program Learning Outcomes (PLOs), and Mechanisms of Using its Results in the Development Processes

- The Evaluation Process was developed to assure that the program achieves its stated goals and objectives derived from the mission statement within the parameters of its vision. The Program coordinators have been instructed to keep close contact and hold regular meetings with the academic staff of each course. The purpose is to make sure that the specification is being followed and that exams exhibit the same level of difficulty, and similar type of format.
- Faculty members attend training courses conducted by specialists in the teaching and learning strategies Student Course evaluations completed for all courses each semester. Student interviews
- Exit survey: This survey will be given to students at the time of graduation and it contains questions about the strategies used in the program to develop and deliver the learning outcomes.
- The dean and the chair of the program meet with students once a year to discuss their opinion about the learning outcomes of the program.
- Meeting with program student council that represents students from all levels of the program.
- Breakdown each student learning outcomes into a set of performance indicators along with a set of rubrics to evaluate outcomes using students' performances.

The Following is a summary of main points used to evaluate and improve the strategies for developing learning outcomes in Electrical Engineering Program:

- The continuous improvement cycle (assessment, evaluation, and improvement)is split into two parts with assignment of responsibilities for each to different parties:
  - Assessment is assigned to a dedicated committee in the department level, called the Assessment and Evolution Committee.
  - Evaluation and improvement are assigned to assessment stakeholders such as course instructors, program heads, and curriculum committees.
- Assessment plan has the following main characteristics:
  It relies on a combination of direct and indirect measurements to produce and corroborate evidence. The assessment plan is shown in the Figure 4.

1) Direct Method

It starts from observable actions by students at the course level, so called course learning outcomes (CLOs).

- Course Learning Outcomes (CLOs) are the basis of all direct assessments of Students Outcomes (SOs).
- Each course has a set of well-prepared outcomes called "Course Learning Outcomes" or CLOs. The CLOs of a course describe the abilities to be attained at the end of the course. The CLOs for each course are specified so that they are non-overlapping and are as few as possible still covering the specified syllabus of the course. The curriculum committee is responsible for updating and revising the CLOs based on the recommendations of the Course Coordinators.
- The assessment of CLOs is based on the actual scores (marks) obtained by students in exams and other assessment tools used to evaluate their learning. We do not believe in using adjusted (curved) scores for outcome assessment as they can obscure actual student performance that is the basis of our outcome performance assessment.

2) Indirect Method

Is achieved through exit survey and course-wise survey.

- Exit survey is conducted for all graduating students just before the final examinations of each semester. The survey conducted to measure the SOs attainment for graduating students by their self.
- For each course, CLOs satisfaction survey is done. The instructor distributes the survey form to the students at the end of each semester before the final examination. The survey conducted to measure the CLOs attainment for students by their self.
- For each course, CLOs are mapped with the SOs. If a CLO significantly helps in attaining an ability related to a SO, we include the SO otherwise, we do not include it. It is consistent that if the CLOs are attained to the required level of satisfaction, the relevant SOs are also assumed to be attained to the required level of satisfaction.
- Another essential element of the SO assessment and evaluation process is the "Program Satisfaction Criterion" or PSC. It specifies the percentage of students that must attain a certain level of ability represented by their percentage marks in each CLO and SO. If the satisfactions level for a CLO or SO in a course is lower than the PSC (specified by the department) it will trigger the alarm for the instructor to prepare Course Continuous Improvement Plan (CCIP).
- Electrical Engineering Program has specified a satisfaction criterion of 60% students attaining the ability represented by 60% marks (i.e. D grade) for

previous academic years. It was realized that this triggered the "alarm" for CCIP in very few courses.

- In response to the feedback received from the SOs assessment program, the department is engaged in an ongoing program of self-improvement.
- On the other side the evaluation and improvement strategies also consider the following continuous improvement reports to be filed as follows.
- End of semester, Course, Course Coordinator, Course file, Presented at the first Department Council in following semester.
- End of year, Program, ABET and NCAAA Committees, Program report, Presented at first Department Council of academic year.
- The dean and the chair of the program meet with students once a year to discuss their opinion about the learning outcomes of the program.
- Meeting with program student council that represents students from all levels of the program.

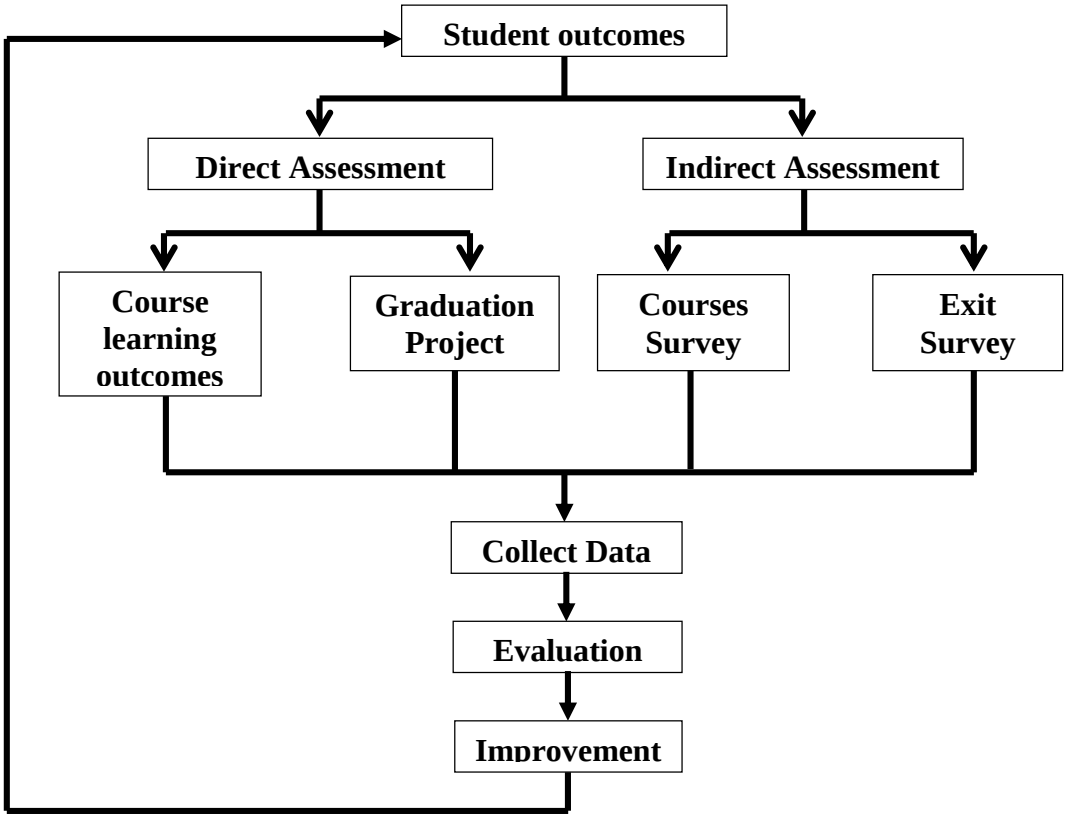

Figure 4. Assessment plan

The processes used for evaluating the skills of faculty and teaching staff in using the planned strategies are:

- Student course evaluation through online course survey at the end of each semester after final examination.
- Course file and course report assessment.
- Feedback from the faculty himself (self-assessment).
- Course coordinator comments and observations on the faculty teaching skills in the planned strategies.
- Department head observations on the faculty teaching skills in using the planned

strategies.
- Peer assessment.
- Student Course evaluation survey.
- Student program evaluation.
- Employers' surveys.
- Exit survey.

7. Program Evaluation Matrix

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Effectiveness of teaching and assessment	Students	- A questionnaire is administered upon completing the course syllabus - Open discussion for the students during the semester to recognize their weakness points in the course - Feedback from Test 1, Test 2 and Final exam records	End of the semester
Evaluation of teaching	- Peer reviewer - Program leader	The peer reviewer will monitor a teaching session for assessment by filling the peer reviewer assessment form	During the semester
Extent of students' achievement of course learning outcomes	- Teaching staff - Program quality coordinator - Program leader	CLOSO program	End of the semester
Improvement of teaching	- Students - Peer reviewer	- Learning from students feedback - Learning from peer reviewer and department feedback - Learning/Using various teaching methods (lecturing, discussions, workshops, exams) - Learning/Using various teaching medias (projector, whiteboard, videos, educational visits)	- End of the semester - End of academic year

Evaluation Areas/Aspects	Evaluation Sources/References	Evaluation Methods	Evaluation Time
Quality of learning resources	Students	A questionnaire is administered by end of every semester	End of the semester
Verifying standards of student achievement	- Program leader - Independent member teaching staff	Check student's marks by an independent member teaching staff/program leader of a sample of student work and remarking of tests or a sample of assignments.	End of the semester
Continuous improvement development process for effectiveness of teaching and assessment	- Graduates - Alumni - Employers	- Surveys - Interviews - Visits	- End of the semester - End of academic year
Learning resources and partnerships	Administrative staff	Surveys	- End of the semester - End of academic year

Evaluation Areas/Aspects (e.g., leadership, effectiveness of teaching & assessment, learning resources, partnerships, etc.)
Evaluation Sources (students, graduates, alumni, faculty, program leaders, administrative staff, employers, independent reviewers, and others (specify)
Evaluation Methods (e.g., Surveys, interviews, visits, etc.)
Evaluation Time (e.g., beginning of semesters, end of academic year, etc.)

8. Program KPIs*

The period to achieve the target (1439/1440 H) year.

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
1	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	80%	Questionnaire Statistics	End of every academic year
2	KPI-P-02	Students' Evaluation of quality of learning experience in the program	80%	Questionnaire	End of every academic year
3	KPI-P-03	Students' evaluation of the quality of the courses	80%	Questionnaire	End of every academic year
4	KPI-P-04	Completion rate	20%	Data from administration system	End of every academic year
5	KPI-P-05	First-year students retention rate	50%	Data from administration system	End of every academic year
6	KPI-P-06	Students' performance in the professional and/or national examinations	N.A		End of every academic year
7	KPI-P-07	Graduates' employability and enrolment in postgraduate		Questionnaire	End of every academic year

No	KPIs Code	KPIs	Target	Measurement Methods	Measurement Time
		programs a) employed b) enrolled in further study	 30% 10%		
8	KPI-P-08	Average number of students in the class	15	Data from department	End of every academic year
9	KPI-P-09	Employers' evaluation of the program graduates proficiency	60%	Questionnaire	End of every academic year
10	KPI-P-10	Students' satisfaction with the offered services	80%	Questionnaire	End of every academic year
11	KPI-P-11	Ratio of students to teaching staff	1:15	Data from department	End of every academic year
12	KPI-P-12	Percentage of teaching staff distribution	2 Prof. 5 Assoc. Prof. 10 Assis. Prof.	Data from department	End of every academic year
13	KPI-P-13	Proportion of teaching staff leaving the program	≤ 10%	Data from department	End of every academic year
14	KPI-P-14	Percentage of publications of faculty members	80%	Data from staff members	End of every academic year
15	KPI-P-15	Rate of published research per faculty member	1:1	Data from staff members	End of every academic year
16	KPI-P-16	Citations rate in refereed journals per faculty member	5:1	Data from Google scholar	End of every academic year
17	KPI-P-17	Satisfaction of beneficiaries with the learning resources	75%	Questionnaire	End of every academic year

* including KPIs required by NCAAA

I. Specification Approval Data

Council / Committee:	Electrical Engineering Department Council
Reference No.:	3-2-1439/1440
Date:	3/8/1440H