



Annual Program Report

Program Name:	B.Sc. in Electrical Engineering
Qualification Level:	B.Sc.
Department:	Electrical Engineering
College:	College of Engineering
Institution:	Najran University
Academic Year:	2021-2022
Main Location:	University City
Branches offering the Program:	<ul style="list-style-type: none">•NA.....••

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A. Implementation of Previous Action Plan

Considering the recommendations of previous year annual report, list the planned actions and their status.

Planned Actions	Responsibility of Action	Planned Completion Date	Level of Completion		If Not Completed	
			Completed	Not Completed	Reasons	Proposed Actions
1. Meetings with Students (R07) Hold regular meetings with all students to listen to their concerns and receive their feedback.	EE chairman and student affairs committee	43-44-2	Completed and continued in every semester			
2. Addressing low admission rate (R19) Review to determine the reasons for the low student enrolment, should develop an effective action plan to address this problem without dangerously lowering the admission standards, and should assess the effectiveness of this action plan regularly.	Registration and examination committee	43-44-3	Completed and continued in every semester			
3. Removing low graduation Rate (R12) Review to determine the reasons for the low graduation rate, develop an effective action plan to address this issue, and assess the effectiveness of this action plan.	Registration and examination committee	43-44-2	Partially Completed			
4. Update Prerequisite for GP1/GP2 (R14) Make the Management of Engineering Projects (407GE-2) course a prerequisite for Graduation Project II or preferably Graduation Project I.	Academic Program Committee	43-44-2	Partially Completed		Waiting for council approval	It will be approved by the EE council in next semester
5. Improve English Skills (R15) Significantly improve the English communication skills of students	Academic Program Committee and Graduates and Human Resources Committee	43-44-3	Partially Completed		Preparatory year is not under college of engineering	Next academic year the Preparatory year will come under college of engineering
6. Emphasis on Design related courses (R16) Provide emphasis on design rather than just implementation in all relevant courses, including Graduation Project, provide greater exposure to research, and give greater emphasis on projects in various courses.	Academic Program Committee and Graduates and Human Resources Committee	43-44-2	Completed			

6. Introducing new topics (R17) Update the Microprocessors Course and Lab to use modern microcontrollers and should update the Logic Design Course and Lab to include Verilog/VHDL	Academic Program Committee	43-44-2	Completed		
7. Program Handbook, both in soft and hard copy (R22) Develop a Program Handbook for Students in hard and soft copy forms to ensure that basic information and procedure are readily available for students' further reference and guide.	EE chairman and AAC	43-44-1	Completed and need to be updated for tri semester plan		
8. Workshops to teaching staffs for quality tasks (R33) Provide extensive workshops to teaching staff on accreditation (including compliance with standards), communications with the students, and assessments.	EE chairman and AAC	43-44-1	Completed		
9. Improve coordination among management units (R11) The EE program should address the issue of the overlap in the responsibilities of the in-house Labs, Safety & Equipment Committee and the outside contractors and should improve the efficiency of resource utilization	EE chairman	43-44-2	Completed		
10. Assessing and aligning the PLOs, CLOs and the graduation attributes (R13) Revise the Learning Outcomes based on the latest requirements, revise graduate attributes, develop and regularly implement a comprehensive plan for properly assessing the attainment of the PLOs, should properly align all CLOs and PLOs with the proper learning domains, and include all the learning outcomes applicable for each the course, including design-related outcomes	Academic Program Committee	43-44-2	Completed		
11. Prepare 3 distinct units for the counselling of students (R25) Revise the structure of the Counselling Unit and restructure the Student Advisory Committee to ensure that student academic advising, professional guidance, and phycological and social guidance are three distinct units with distinct goals, policies, and procedures.	EE chairman	43-44-2	Completed		

12. Extracurricular Activities (R27) Implement an effective plan for extracurricular activities in a variety of fields to support the development of the student's abilities and skills and with proper linkage to the PLOs and graduate attributes, should support and motivate student participation, and should evaluate the achievement of the extracurricular activities periodically, and should develop action plans to ensure continuous improvement.	Student affairs committee	43-44-2	Completed and continued in every semester		
13. Creation of career advising unit (R29) Create a career advising unit to ensure interns and graduates are matched to employers as NU serves as a hub for the surrounding areas.	Student affairs committee	43-44-2	Completed		
14. Update database of Alumni (R28) Implement a plan to speed up the process of activating the Alumni database with different communication and employment data documentation mechanisms.	EE chairman and Student affairs committee	43-44-2	Completed and continued in every semester		

B. Program Statistics

1. Students Statistics (in the year concerned)

No.	Item	Results
1	Number of students who started the program	6
2	Number of students who graduated	06 (Total) 04 (Cohort)
3	Number of students who completed major tracks within the program (if applicable)	
	a.	
	B	
	c.	
4	a. Number of students who completed the program in the minimal time	04
5	a. Percentage of students who completed the program in the minimal time (Completion rate)	66.67
6	Number of students who completed an intermediate award specified as an early exit point (if any)	NA
7	Percentage of students who completed an intermediate award specified as an early exit point (if any)	NA
Comment on any special or unusual factors that might have affected the completion rates: NA		

2. Cohort Analysis of Current Graduate Batch

Student Categories		Total cohort enrollment	Withdrawn	Retained till year end	Not passed	Passed	Passing rate
Years							
Three Years Ago	M	10	0	9	2	8	80%
	F	NA	NA	NA	NA	NA	NA
	Total	10	0	9	2	8	80%
Two Years Ago	M	8	1	7	0	7	87.5%
	F	NA	NA	NA	NA	NA	NA
	Total	8	1	7	0	7	87.5%
Last Year	M	7	0	6	1	6	85.7%
	F	NA	NA	NA	NA	NA	NA
	Total	7	0	6	1	6	85.7%
Current Year	M	6	0	6	0	6	100%
	F	NA	NA	NA	NA	NA	NA
	Total	6	0	6	0	6	100%

Comments on the results:

- For current graduate batch 2021 graduation is 6/10 equal to 60%.
- The graduation rate was low in previous years and there was a critical reason for it. Due to war situation (from 2016 to 2019) on the border area, students enrolment was decreased and some enrolled students delayed their studies. Now from last two years, the war is stopped and the enrolments have been improved. The graduation rate is also gradually increasing. It is expected that the target of the graduation rate will be achieved in next two to three years. The student enrollment and graduation rate in last seven years has been shown in the Figure 1.

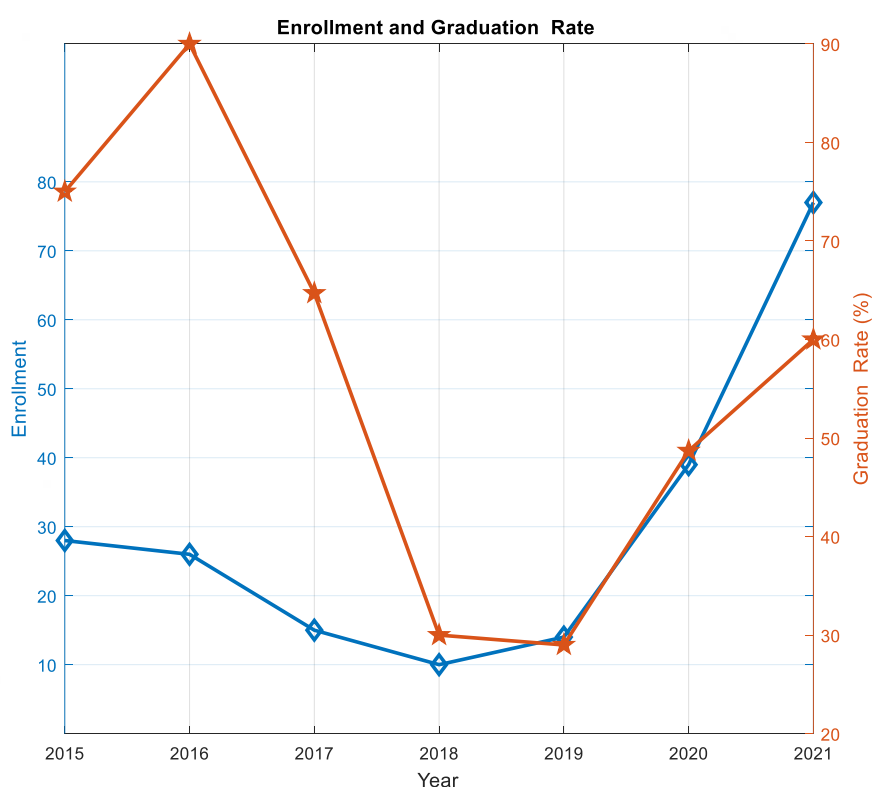


Figure 1. Student enrollment and graduation rate

- The Figure 2 indicated that some students have delayed their studies due to personal reasons. However, the number was huge in 2021 due to corona pandemic. This factor effects the graduation rate.

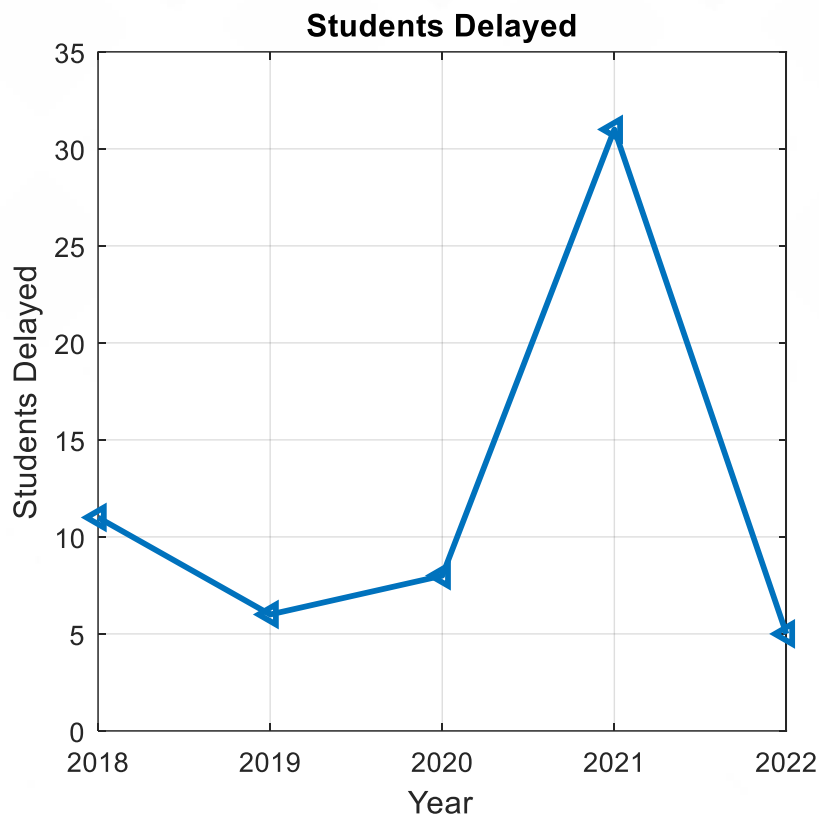


Figure 2. Students Delayed

3. Analysis of Program Statistics

(including strengths, areas for improvement, and priorities for improvement)

Strengths :

Summer courses are offered. Students who want to finish early or who lacks in any regular semester, can cover their lacking by taking summer courses.

Areas for Improvement:

NA

Priorities for Improvement:

NA

C. Program Learning Outcomes Assessment

1. Program Learning Outcomes Assessment Results.

#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results
Knowledge				
K1	An ability to apply knowledge of mathematics, science, and engineering in electrical engineering problems	Direct assessment by using CLOSO program and indirect through surveys	60%	NA
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.	Direct assessment by using CLOSO program and indirect through surveys	60%	NA
K3	Recognize the need for an ability to engage in life-long learning and continuing education of professional/engineering skills.	Direct assessment by using CLOSO program and indirect through surveys	60%	NA
K4	Recognize the contemporary issues in electrical engineering discipline.	Direct assessment by using CLOSO program and indirect through surveys	60%	NA
Skills				
S1	Design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering problems.	Direct assessment by using CLOSO program and indirect through surveys	60%	NA
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. (ABET-c)	Direct assessment by using CLOSO program and indirect through surveys	60%	70%
S3	Identify, formulate, and solve engineering problems to evaluate and synthesize information in order to provide best alternative solutions	Direct assessment by using CLOSO program and indirect through surveys	60%	NA
Competence				

C1	Function effectively on multidisciplinary electrical engineering teams.	Direct assessment by using CLOSO program and indirect through surveys	60%	NA
C2	Act professionally, ethically and recognize the impact of liability issues in electrical engineering projects.	Direct assessment by using CLOSO program and indirect through surveys	60%	NA
#	Program Learning Outcomes	Assessment Methods (Direct and Indirect)	Performance Target	Results
C3	Communicate effectively, prepare professionally written materials, graphical communications, and deliver professional oral and written presentations. (ABET-g)	Direct assessment by using CLOSO program and indirect through surveys	60%	90%
C4	Use techniques, skills and modern engineering tools necessary for electrical engineering practice.	Direct assessment by using CLOSO program and indirect through surveys	60%	NA

Comments on the Program Learning Outcome Assessment results.

As of the suggestions provided by the assessment and evaluation committee, 2 out of 11 PLOs are assessed and evaluated. NA means not assessed, and the other two among 11 will be assessed in the next semester. PLO S2 (ABET-c) and PLO C3(ABET-g) are assessed and evaluated both in informative and summative level. It was observed that in the summative level, the satisfaction level is higher than that of informative level in both PLOs implying that the students' performance excels while they go to their senior level and when they are matured.

* Include the results of measured learning outcomes during the year of the report according to the program plan for measuring learning outcomes

** Attach a separate report on the program learning outcomes assessment results for male and female sections and for each branch (if any)

2. Analysis of Program Learning Outcomes Assessment

(including strengths, Areas for Improvement, and priorities for improvement)

Strengths :
Assignments focusing SOs were given to the students. The target level of SO's was achieved.
Areas for Improvement:
NA
Priorities for Improvement:
NA

D. Summary of Course Reports

1. Teaching of Planned Courses / Units

List the courses / units that were planned and not taught during the academic year, indicating the reasons and compensating actions.

Course	Units/Topics	Reasons	Compensating Actions
NA			

2. Courses with Variations

List courses with marked variations in results that are stated in the course reports, including: (completion rate, grade distribution, student results, etc.), and giving reasons for these variations and actions taken for improvement.

Course Name & Code	Variation	Reasons for variation	Actions taken
NA			

3. Result Analysis of Course Reports

(including strengths, Areas for Improvement:, and priorities for improvement)

<p>Strengths : Students attendance is satisfactory due to activation of the attendance system. The SO's target level was achieved.</p>
<p>Areas for Improvement:</p> <ol style="list-style-type: none"> 1. Students should solve at home various problems of the textbook related to the topics for 204GE-3. 2. Small group discussion should be implemented for 204GE-3, 212EE-3, 213EE-1, 215EE-3, 341EE-3,323EE-3,426EE-3 , 422EE-3 and 417EE-3. 3. Students need to do practice for programming for C language and MATLAB.
<p>Priorities for Improvement:</p> <ol style="list-style-type: none"> 1. Students should solve at home various problems of the textbook related to the topics for 204GE-3. 2. Small group discussion should be implemented for 204GE-3, 212EE-3, 213EE-1, 215EE-3, 341EE-3,323EE-3,426EE-3 , 422EE-3 and 417EE-3. 3. Students need to do practice for programming for C language and MATLAB.

E. Program Activities

Activities Implemented	Brief Description *
Orientation of new students	A short meeting to familiarize students with academic rules and regulations of the electrical engineering department. In addition, the dean and the head of the department give welcome and motivation speech to the students.

Honors and award program	Students with significant achievement or high grade point average get rewarded in front of their peers.
Students satisfaction survey	Questionnaires were given to students to measure their satisfaction about the academic advising, and to find the common issues that encounter students.
Advising booklet	Each student gets a booklet about the electrical engineering major. The booklet is intended to give students an overview and general advices about the study plan and the coursework.
Students support program	A remedial program to investigate students with low grade point average and/or high absent rate and to offer specialized solutions and advices.
Seminars and workshops	The department offers technical seminars in the field of electrical engineering that intended to give students the hands-on experience and keep them updated with the new topics. Workshops about self-development is also given to enhance students overall skills.
Comment on Student Counseling and Support **	
The faculty members have provided guidance and counselling to students to handle their problems related with their course registration.	

* including action time, number of participants, results and any other statistics.

** including performance evaluation on these activities

2. Professional Development Activities for Faculty and Other Staff

Activities Implemented	Brief Description*												
Several workshop were organized to enhance the technical knowledge and skills of the faculty members which is shown in the table	<table border="1"> <thead> <tr> <th>التاريخ Date</th> <th>عنوان الدورة Workshop title</th> <th>مقدم الدورة presenter</th> </tr> </thead> <tbody> <tr> <td>24 March 2022</td> <td>Modern Technologies for Smart Cities (Webinar)</td> <td>Dr. Muhammad Irfan</td> </tr> <tr> <td>27 March 2022</td> <td>Graduate Studies in Electrical Engineering (Workshop for Senior Students)</td> <td>Dr. Ahmad Alzahrani, Engr Mesfer AlNajrani,</td> </tr> <tr> <td>23 May 2022</td> <td>Hands on Workshop on LabVIEW based Data Acquisition</td> <td>Dr. Muhammad Irfan</td> </tr> </tbody> </table>	التاريخ Date	عنوان الدورة Workshop title	مقدم الدورة presenter	24 March 2022	Modern Technologies for Smart Cities (Webinar)	Dr. Muhammad Irfan	27 March 2022	Graduate Studies in Electrical Engineering (Workshop for Senior Students)	Dr. Ahmad Alzahrani, Engr Mesfer AlNajrani,	23 May 2022	Hands on Workshop on LabVIEW based Data Acquisition	Dr. Muhammad Irfan
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23 May 2022	Hands on Workshop on LabVIEW based Data Acquisition	Dr. Muhammad Irfan											
Conferences Attended	Five faculty members attended the International Research conferences.												
Quality and Development workshop	All faculty members attended the quality and development workshop organized by the deanship of quality and development												
Comment on Professional Development Activities for Faculty and Other Staff **													
EE faculty members got opportunities to attend several workshops and seminars to enhance their technical knowledge and skills. Some of the faculty members have attended international conferences. The deanship of quality and development have also arranged several workshops for faculty members related to quality.													

* including action time, number of participants, results and any other statistics.

** including performance evaluation on these activities

3. Research and Innovation

Activities Implemented	Brief Description*
Journal Publications	The EE faculty members have published 107 papers in various peer reviewed, Web of Science journals (Till January'2022). The total faculty members in the department are 19 out of which 16 faculty members have Ph.D degrees. The target of publishing a minimum 15 journal papers per year has been achieved.

	Notably, total papers published by Najran University in web of science in year 2021 are 526. Thus, the contribution of the EE department is $107/526 * 100 = 20.3\%$.
	Research Citations: The research citations of the each faculty member for the year 2021 were cited 1472 times. The citations data has been collected from the google scholar profiles of each faculty members, and are shown detailed in the annual research report.

* including action time, number of participants, results and any other statistics.

** including performance evaluation on these activities

4. Community Partnership

Activities Implemented	Brief Description *
Graduation Projects	Induction Motor Fault Analysis Using Ensemble Learning
	Traffic Signs Classification Using Deep Neural Networks
	Face Mask Detection System Using CNN
	Energy Management System for Microgrids
	Solar Electricity Potential Based on ArcGIS and the Consumption of Electricity in Najran University
Seminar and Workshops	A short list is already mentioned in table E.2
Comment on Community Partnership **	
Department serves the community by taking community oriented graduation projects. The above lists shows few of those project titles.	

* including action time, number of participants, results and any other statistics.

** including performance evaluation on these activities

5. Analysis of Program Activities

(including strengths, Areas for Improvement:, and priorities for improvement)

Strengths :
<ol style="list-style-type: none"> 1. Community oriented graduation projects 2. The Electrical Engineering department has received first position in highest number of research publication in year 2021 in Najran University. 3. Seminars and workshops through EE faculty members, engineering and scientific research center and e-learning.
Areas for Improvement:
The EE faculty members should participate in more National and International conferences and research exhibitions.
Priorities for Improvement:
The EE faculty members should participate in more National and International conferences and research exhibitions.



F. Program Evaluation

1. Evaluation of Courses

Course Code	Course Title	Student Evaluation (Yes-No)	Other Evaluations (specify)	Developmental Recommendations
202EE-3	Engineering Mathematics	Yes	Peer review by another faculty member	- More assignments should be given during the semester
204GE3	Computer Programming for Engineers	Yes	Peer review by another faculty member	- Students should solve at home various problems of the textbook related to the topics for 204GE-3. - Number of students must not exceed 15 per section.
211EE3	Fundamentals of Electric Circuits	Yes	Peer review by another faculty member	No remarks
212EE3	Electromagnetism (1)	Yes	Peer review by another faculty member	No remarks
214EE3/ 217EE-3	Electric Circuit Analysis	Yes	Peer review by another faculty member	- Only 45% of students passed the course and the students need to work hard to improve their results.
213EE1	Electric Circuits Lab	Yes	Peer review by another faculty member	No remarks
215EE3	Electromagnetism (2)	Yes	Peer review by another faculty member	- Number of students must not exceed 15 per section.
251EE3/ 331EE3	Logic Design	Yes	Peer review by another faculty member	- Mini Test should be taken as a design test to complete the necessity for design work for this subject. - Give emphasis on the CLOs that didn't reach the target level.
252EE1/ 332EE1	Logic Design Laboratory	Yes	Peer review by another faculty member	- Number of students must not exceed 15 per section.
321EE3	Signals and Systems	Yes	Peer review by another faculty member	- Address the weak CLOs
333EE3	Basics of Electronic Devices	Yes	Peer review by another faculty member	- Mini Project should be given in next semester.
334EE1	Basic Electronic Laboratory	Yes	Peer review by another faculty member	- . - Number of students must not exceed 10 per section.

Course Code	Course Title	Student Evaluation (Yes-No)	Other Evaluations (specify)	Developmental Recommendations
325EE3	Electrical Machines	Yes	Peer review by another faculty member	No remarks
341EE3	Communications Principles	Yes	Peer review by another faculty member	No remarks
342EE1	Communications Lab	Yes	Peer review by another faculty member	No remarks
323EE3	Automatic Control	Yes	Peer review by another faculty member	No remarks
324EE1	Automatic Control Lab	Yes	Peer review by another faculty member	No remarks
335EE3	Introduction to Microprocessors /	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - Students need to do practice for programming. - More work related to the weak CLO should be given
336EE1	Microprocessor and Microcontroller Lab/	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - Students should revise the topics that was taught in the lab. - Students must consult the instructor for help during office hours. - Introduce microcontroller experiments
351EE3	Computer programming for Electrical Engineering/	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - Students must solve at home many various problems of the textbook related to the topics.
491EE2	Graduation Project (1)	Yes	Examiner panel	<ul style="list-style-type: none"> - Students have achieved the minimum success criteria for CLOs
426EE3	Fundamentals of Power Systems/	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - Power flow should be added to the course. - Small project should be added to the course.
416EE3	Electrical Measurements	Yes	Peer review by another faculty member	No remarks
437EE3	Digital Signal Processing	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - Provide more intellectual DSP mini projects.
422EE3	Electromechanical Energy Conversion	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - Number of students must not exceed 15 per section.
492EE3	Graduation Project (2)	Yes	Examiner panel	No remarks

Course Code	Course Title	Student Evaluation (Yes-No)	Other Evaluations (specify)	Developmental Recommendations
427EE3	Electric Drives	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - Offer the course once per year to allow more students to register. - Class time must be changed to be afternoon and see if the attendance rate is going to improve.
428EE3	Applied Control	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - The course instructor for the next semester should give more time on CLO1
417EE3	Utilization of Electrical Energy	Yes	Peer review by another faculty member	<ul style="list-style-type: none"> - Number of students must not exceed 14 per section.

2. Students Evaluation of Program Quality

Evaluation Date : 1443 H	Number of Participants: 50
Students Feedback	Program Response
<p>Strengths:</p> <ul style="list-style-type: none"> • The overall average satisfaction rate of all questionnaires is 85%, which is well above the target rate. • The number of participants has been greatly improved after the application of a new questionnaires distribution mechanism. • The student's feedback has been carefully collected and analyzed for improving the mechanisms the department follows in response to students' demands. • The approval of a tri-semester reflects what has been demanded in the questionnaires by students. • The new move to using Microsoft Forms for preparing and distributing questionnaires allows for greater flexibility and better cooperation between questionnaires committee members and members of other committees. 	Satisfied
<p>Areas for Improvement::</p> <ul style="list-style-type: none"> • Adding a third semester and lower the burden on students in each semester. • Maintenance of air conditioners. 	<ul style="list-style-type: none"> • The third semester will be added in the next academic year. • It will be asked from maintenance department to do the needful.
<p>Suggestions for improvement:</p> <ul style="list-style-type: none"> • Adding a third semester and lower the burden on students in each semester. • Maintenance of air conditioners. 	<ul style="list-style-type: none"> • The third semester will be added in the next academic year. • It will be asked from maintenance department to do the needful.

* Attach report on the students evaluation of program quality

3. Other Evaluations

(e.g. Evaluations by independent reviewer, program advisory committee, and stakeholders (e.g., faculty members, alumni, and employers))

Evaluation method : Alumni Survey	Date: 2022	Number of Participants : 05
Summary of Evaluator Review		Program Response
Strengths: The survey indicates that alumni is satisfied with the offered courses and delivery methods		Satisfied
Suggestions for improvement <ul style="list-style-type: none"> • Increase number of field visit for students • Establish scientific clubs for students. 		<ul style="list-style-type: none"> • The students affairs committee has taken the action to increase the field visits for the students. • The program has opened IEEE chapter.
Evaluation method : Employer Survey	Date: April, 2022	Number of Participants : 11
Summary of Evaluator Review		Program Response
Strengths: <ul style="list-style-type: none"> • Graduates can identify the problems and give a solution (9 responses) • Graduates have desire to learn, and discipline (10 responses). • Graduates have competitive tendency, and established a good position within very short time. 		Satisfied
Suggestions for improvement <ul style="list-style-type: none"> • English language skills could be improved (all responses). • Make the labs and experiments to the level of current need of the labor market (10 response). • Improvement in the punctuality of the employee being attend the work with time (10 response). • Enhance self-development enthusiasm (10 response). • The work of independent research units to solve the national and community problems with a special budget (9 response). 		<ul style="list-style-type: none"> • The program has included the presentations in various subjects to improve students communication skills. • The modified study plan is in execution. • The program has electronic attendance system to mark students attendance in the class. • Program is offering several technical seminars and workshops to enhance technical skills of the students. • Starting from January 2023, The deanship of scientific research will open a research support program for students to carry the community oriented graduation projects.

* Attach independent reviewer's report and stakeholders' survey reports (if any)



Annual Program Report



December 2018

1. Program KPIs and Analysis



A. KPIs of NCAAA



هيئة تقويم التعليم والتدريب
Education & Training Evaluation Commission

NCAAA Standards	KPI Code #	Key Performance Indicator	KPI Target	KPI Actual Benchmark 1443 H	Previous performance for the year 1442 H	KPI External Benchmark 1443 H (EE King Khaled University)	KPI New Target	Remarks	Evidence
-1- Mission and Goals	KPI-P-01	Percentage of achieved indicators of the program operational plan objectives	85%	96.8%	76.92%	-	85%	The target is surpassed. (performance leap is reported).	Click here
	KPI-P-02	Students' Evaluation of quality of learning experience in the program	80%	85%	87.5%	67%	80%	The target is surpassed.	Click here
-3- Teaching and Learning	KPI-P-03	Students' evaluation of the quality of the courses	80%	81.2%	N.A.	-	80%	The target is achieved.	Click here
	KPI-P-04	Completion rate	65%	60 %	48.7%	83.65%	65%	The target is NOT achieved. <ul style="list-style-type: none"> The performance gap is reduced compared to the previous year. More corrective actions and improvement measures are recommended. Target value for the next year remains fixed (incremental progress towards the lagging value is to be annually monitored with leading targets). 	Click here
	KPI-P-05	First-year students retention rate	Not less than 85%	100%	100%	80.59%	Not less than 85%	The target is surpassed.	Click here
	KPI-P-06	Students' performance in the	-	-	-	-	-	NA	NA

NCAAA Standards	KPI Code #	Key Performance Indicator	KPI Target	KPI Actual Benchmark 1443 H	Previous performance for the year 1442 H	KPI External Benchmark 1443 H (EE King Khaled University)	KPI New Target	Remarks	Evidence
		professional and/or national examinations							
	KPI-P-07	Graduates' employability and enrolment in postgraduate programs a) employed b) enrolled in further study	50% 5%	94% 0%	64% 8%	- 3%	50% 5%	a) The target is surpassed. Performance leap is reported for graduates' employability. b) The target is achieved.	Click here
	KPI-P-08	Average number of students in the class	15	9	10	-	15	The target is surpassed (less number of students in class is better).	Click here
	KPI-P-09	Employers' evaluation of the program graduate's proficiency	80%	91%	91%	68%	80%	The target is surpassed.	Click here
-4- Students	KPI-P-10	Students' satisfaction with the offered services	80%	79% For academic advising 89% For career advising	N.A% For academic advising 86% For career advising	- 80%	80%	The target is achieved.	Click here
	KPI-P-11	Ratio of students to teaching staff	15:1	8.7:1	5.6:1	8:1	15:1	The target is surpassed (less number of students per teaching staff is better).	Click here
-5- Teaching Staff	KPI-P-12	Percentage of teaching staff distribution	4 Professor (20%)	01 Professor (5%)	01 Professor (5%)	-	4 Professor (20%)	The faculty affiliated with the department are available with all ranks such as professor, associate	Click here

NCAAA Standards	KPI Code #	Key Performance Indicator	KPI Target	KPI Actual Benchmark 1443 H	Previous performance for the year 1442 H	KPI External Benchmark 1443 H (EE King Khaled University)	KPI New Target	Remarks	Evidence
			6 Associate Professor (30%) 10 Assistant Professor (50%)	05 Associate Professor (25%) 11 Assistant Professor (55%) 03 Lecturers (15%)	03 Associate Professor (15.7%) 13 Assistant Professor (68.3%) 02 Lecturers (11%)		6 Associate Professor (30%) 10 Assistant Professor (50%)	professor, assistant professor, and lecturers	
	KPI-P-13	The proportion of teaching staff leaving the program	Not more than 5%	5 %	5 %	1.7%	Not more than 5%	The target is achieved.	Click here
	KPI-P-14	Percentage of publications of faculty members	80%	93.8%	87.5%	98%	90%	The target is surpassed (performance leap is reported).	Click here
	KPI-P-15	Rate of published research per faculty member	1:1	6.68:1	1.43:1	3.52:1	2:1	The target is surpassed (performance leap is reported).	Click here
	KPI-P-16	Citations rate in refereed journals per faculty member	10:1	13.76: 1	4.17: 1	5.75:1	10:1	The target is surpassed (performance leap is reported).	Click here
-6- Learning Resources, Facilities, and Equipment	KPI-P-17	Satisfaction of beneficiaries with the learning resources	85%	85%	78%	70.5%	85%	The target is achieved.	Click here

Analysis of NCAAA KPIs and Benchmarks

Based on the KPIs distributed across the NCAA's six standards, which are the minimum indicators to be recorded annually to evaluate the program's performance, Electrical Engineering Program reported the results for 1443/1444 H and benchmarked the results with the values of the previous year and externally with the values recorded by EE King Khaled University. The results of this report are to be used by the program top management to monitor the progress of the program towards the achievement of its mission and goals. Performance gaps highlighted in this report are to be discussed to detect possible causes and recommended corrective actions and/ or improvement plans. The following table illustrates improvement recommendations based on detected weaknesses in each standard:

Standard 1: Mission and Goals

Strength	: Percentage of performance indicators of the operational plan objectives of the program that achieved the targeted annual level to the total number of indicators targeted for these objectives surpassed the target value of 85%.
Weaknesses	: None
Analysis	: The program went through accreditation process which had a huge impact on overall performance, the accreditation report included precise recommendations for improvement and conditions for full accreditation which formulated the road map and the core of the annual operational plan. All members were motivated to cooperate to timely achieve their tasks.
Recommendations	: <ul style="list-style-type: none">• Measures are to be taken to keep up this effort for continuous improvement of the program.• Involving stakeholders in all processes for improvement and encouraging their initiatives is highly recommended.

Standard 3: Teaching and Learning

Strength	: <ul style="list-style-type: none">– The overall students' evaluation of quality of learning experience in the program and quality of the courses achieved the annual target.– First-year students' retention rate surpassed the target value.– Graduate employability reported a leap compared to the previous year value and surpassed the target value.
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	<ul style="list-style-type: none"> – Average number of students in class is less than the target value. – Employers' evaluation of the program graduate's proficiency is 91%, surpassed the target value of 80%.
Weaknesses	<ul style="list-style-type: none"> : – Students' performance in the professional and/or national examinations has not been able to be measured due to the lack of information/documents. – The percentage of graduates from the program who within a year of graduation enrolled in postgraduate programs is 0%. – Completion rate is 60% which is below the target value of 65%.
Analysis	<ul style="list-style-type: none"> : – While less number of students in class might raise an economic concern but from teaching and learning point of view it is considered as an advantage as it improves the chance for better interaction and communication between teaching staff and their students. – Students' performance in professional examinations is a reliable indicator for the quality of teaching and learning provided by the program. Saudi Council of Engineers (SCE) provides two accredited professional exams, but the program lacks the required information about number of students who applied for these exams or any alike kind of exams and their results. – The regression of the percentage of graduates' enrolment in postgraduate studies compared to the last year needs further study to uncover the reasons and measures for improvement. – Low completion rate had been an issue since the Southern border crisis followed by COVID 19 pandemic, the program applied different measures to deal with/ and overcome the weak performance of enrolled students, incremental progress towards the target value is noticed.
Performance gaps	<ul style="list-style-type: none"> : – KPI-P-04 – KPI-P-07 (b)
Recommendations	<ul style="list-style-type: none"> : – Initiatives for raising student awareness about the professional exams and encouragement for application are recommended. – Initiatives for raising students' awareness about postgraduates' studies and their impact on their career are recommended. – To improve the completion rate the program has to detect the levels of study plan with low success rates, dig deeper to detect the responsible course/ courses and study the causes to come up with the suitable corrective action and improvement measures. – Initiatives and activities to advertise the program are recommended to increase number of students' enrolment.

Standard 4: Students

Strength : – The admission process for Electrical Engineering program is automated through an online platform that manages all aspects of the admission process.
– There is a booklet given to students at admission time (and whenever requested by anyone).
– Students' satisfaction with the offered services achieved the target value.

Weaknesses : None

Analysis : Students' satisfaction with the provided services and support is a reflect for the effort provided by the University and the program to provide a supportive environment.

Recommendations : – Updating the official website of the program with the available student support and services provided by the program and the university.
– Involving students in the process of planning and improving support services and activities.
– Provide the students with feedback about the program's response to their complains.
– Raise students' awareness about the impact of their participation in different surveys.
– Follow up implementation of improvement plans to meet students' needs and expectations.

Standard 5: Teaching Staff

Strength : – The ratio of students to teaching staff is very good, 1 faculty member for each 8.7 students. This low ratio will increase the effectiveness of the education process provided by the program and increase the chance for the student's participation in the class.
– The percentage of teaching staff distribution in the department is available with all ranks, i.e., professor, associate professor, assistant professor, and lecturer.
– Proportion of teaching staff leaving the program is 5%, which indicates that the program has good organizational culture and good working environment.
– The percentage of publications of faculty members is 93.8%.
– The rate of published research per faculty member is 6.68:1.
– The citations rate in refereed journals per faculty member is satisfactory.

Weaknesses : – None

Analysis	:	The program is privileged for having distinguished teaching staff with a high percentage of PhD holders including full professor, associate professors and assistant professors. The ratio of students to teaching staff is below the target value providing better chance for teaching and learning. Almost all faculty members are engaged in research activities and publications which keep them well informed about the newest in the field.
Recommendations	:	<ul style="list-style-type: none"> – Expand partnerships and cooperation with local and regional institutions. – Provide chances for attending scientific meetings, conferences.

Standard 6: Learning Resources, Facilities, and Equipment

Strength	:	<ul style="list-style-type: none"> – The use of free resources on the internet is applied and encouraged. – Access to library resources is easy. – Many digital books and scientific databases are available. – Access to digital learning resources is easy. – Wide variety of book titles and copies are installed in Najran University library.
Weaknesses	:	None
Analysis	:	Prince Meshaal library provides wide variety of textbooks with suitable areas for study. Digital sources are available for both students and teaching staff with supporting workshops provided by deanship of library affairs. The program needs for new textbooks are annually submitted to the deanship of library affairs. The program has a well-equipped and maintained labs.
Recommendations	:	<ul style="list-style-type: none"> – Provide support for the students to increase their visits and use of the library. – Improve copying and printing facilities. – Keep subscription renewal to all necessary databases to guarantee continuity of service.

B. Additional KPIs of the program

KPI Code #	Key Performance Indicator	KPI Target Benchmark	KPI Actual Benchmark 1443/1444 H	KPI Internal Benchmark EE 1442/1443 H	KPI External Benchmark 1443/1444 H	KPI New Target Benchmark	Remarks
KPI-V-01	Ratio of Saudi teaching staff in the program.	60%	56.25%	50%	-	60%	10 Saudi graduates are currently pursuing their postgraduate study outside the kingdom.
KPI-V-02	Number of published research articles	16 (At least one article for every staff member)	107	23	-	16 (At least one article for every staff member)	The target is surpassed

Strength	: – The total number of published research articles for all staff members during the year is 107. – The department uses different measures to encourage joint scientific research and to participate in research projects. – The presence of researchers in the department and the college from many countries of the world.
Weaknesses	: The ratio of Saudi teaching staff in program is 56.25%.
Performance gap	: KPI-V-01
Analysis	: While the ratio of Saudi teaching staff in the program is still below the target, the program plans to increase this ratio by providing chances for employment of Saudi lecturers and assistant professors.
Recommendations	: – Saudi students who are enrolled in further study (postgraduate) should be continuously followed up and supported by the department as well as urge them to complete their studies with minimal period.

KPI Code #	Key Performance Indicator	KPI Target Benchmark	KPI Actual Benchmark 1440/1441 H	KPI Internal Benchmark EE 1442/1443 H	KPI External Benchmark 1440/1441 H	KPI New Target Benchmark	Remarks
KPI-NU-01	Proportion of courses in which student evaluations were conducted during the year.	80%	100%	100%	-	100%	The target is achieved as the evaluation is compulsory for all courses

Strength	: – The proportion of courses in which student evaluations were conducted during the year is 100%, which is above the target value of 80%. – All courses were evaluated, as it is compulsory through online course evaluations.
Weaknesses	: None
Analysis	: Students need to evaluate the courses in order to have access to their final exam's results of the course. Although this procedure assures that all students will evaluate all the courses it might result to careless evaluation.
Recommendations	: Raise the students' awareness about the importance of their evaluation and its implications.

Closing the Quality Loop and bridging performance gap:

No.	KPI Code #	Status of bridging the performance gap	Remarks and Recommendations for Improvement
1.	KPI-P-04	In progress	<ul style="list-style-type: none"> The completion rate was low in previous years and there were few reasons for it. For example, due to war situation on the border area, students' enrolment was low, some enrolled students delayed their studies. Now from last two years, the enrolments have been improved and the completion rate is also gradually increasing. It is expected that the target of the completion rate will be achieved in the next two to three years.
3.	KPI-V-01	In progress	<ul style="list-style-type: none"> The ratio of Saudi teaching staff in the program is below the target value of 60%. The department has more than 10 students who are currently pursuing their postgraduate study outside the kingdom. All students are continuously followed up and supported by the department as well as urged them to complete their studies with minimal period.



5. Analysis of Program Evaluation

(including strengths, Areas for Improvement:, and priorities for improvement)



Strengths :

- Summer courses are offered. Students who want to finish early or who lacks in any regular semester, can cover their lacking by taking summer courses.
- Students attendance is satisfactory due to activation of the attendance system.
- Assignments focusing SOs were given to the students.
- Community oriented graduation projects are being done by students.
- The Electrical Engineering department has received first position in highest number of research publication in year 2021 in Najran University.
- The survey results indicates overall average satisfaction rate of all questionnaires is 85%, which is well above the target rate.
- The number of participants in the surveys has been greatly improved after the application of a new questionnaires distribution mechanism.
- The new move to using Microsoft Forms for preparing and distributing questionnaires allows for greater flexibility and better cooperation between questionnaires committee members and members of other committees.
- The actual percentage of the achieved indicators of the program operational plan objectives is 93.75% which is above the target value of 90%.
- The overall students' evaluation of quality of learning experience in the program is 85% higher the target value.
- First-year students retention rate is 100%, achieved the target value of 100%.
- The ratio of students to teaching staff is very good, 1 faculty member for each 8.7 students. This low ratio will increase the effectiveness of the education process provided by the department and increase the chance for the student's participation in the class.
- The percentage of teaching staff distribution in the department is available with all ranks, i.e., professor, associate professor, assistant professor, and lecturer.
- Proportion of teaching staff leaving the program is 5%, which indicates that the program has good organizational culture and good working environment.
- The percentage of publications of all faculty members is 93.8%, which is higher than the target value of 90%.
- The rate of published research per faculty member is 6.68:1, which is better than the target value of 1:1.
- The citations rate in refereed journals per faculty member is satisfactory.
- The total number of published research articles for all staff members is 107, which is much higher than the target benchmark of 16.
- The department encourages its faculty members for research collaborations.
- The EE department has recruited faculty members from various countries to have diversity.

Areas for Improvement:

- More quizzes related to the weak CLO be given and the CLO with weak performance be addressed earlier in the semester.
- Students should solve at home various problems of the textbook related to the topics for 204GE-3.
- Small group discussion should be implemented for 204GE-3, 212EE-3, 213EE-1, 215EE-3, 341EE-3, 323EE-3, 426EE-3 , 422EE-3 and 417EE-3.
- Give emphasis on the CLOs that didn't reach the target level.
- Students need to do practice for programming for C language and MATLAB
- The EE faculty members should participate in more National and International conferences and research exhibitions
- Adding a third semester and lower the burden on students in each semester.
- Maintenance of air conditioners.

Priorities for Improvement:

- Give emphasis on the CLOs that didn't reach the target level.
- More quizzes related to the weak CLO be given and the CLO with weak performance be addressed earlier in the semester.
- Students should solve at home various problems of the textbook related to the topics for 204GE-3.
- Small group discussion should be implemented for 204GE-3, 212EE-3, 213EE-1, 215EE-3, 341EE-3, 323EE-3, 426EE-3 , 422EE-3 and 417EE-3.

- Students need to do practice for programming for C language and MATLAB.
- The EE faculty members should participate in more National and International conferences and research exhibitions
- Adding a third semester and lower the burden on students in each semester.
- Maintenance of air conditioners is required.
- Completion rate is 66.66% which is below the target benchmark of 80%.

G. Difficulties and Challenges Faced Program Management

Difficulties and Challenges	Implications on the Program	Actions Taken
The completion rate achieved target is below the target value.	The reasons of completion rate and program actions are already described in section 2 of this report. The completion rate is gradually improving and it will achieve the target benchmark in next few years.	Monitor completion rate in every year.

*Internal and external difficulties and challenges

H. Program Improvement Plan

N o.	Priorities for Improvement	Actions	Action Responsibility	Date		Achievement Indicators	Target Benchmark
				Start	End		
1.	Increase meetings with students (R07)	Hold regular meetings with all students to listen to their concerns and receive their feedback.	Students Affairs Committee	Jan 2023	June 2023	Minutes of the meeting	One meeting per year
2.	Improve English skills of students (R15)	<p>To significantly improve the English communication skills of students, the following actions have been executed.</p> <ul style="list-style-type: none"> To improve the English communication skills of the students, the presentation in some courses has been included which is being presented by students completely in English. The evidence has been attached. <ul style="list-style-type: none"> Mini Project presentation Graduation project assessment has been modified to include two presentations per semester which enable the students to communicate and discuss their ideas in English. The assessment form enables the students ability to deliver their ideas, answer questions, check presentation and report contents, grammar etc. The evidence has been attached. <ul style="list-style-type: none"> Assessment form for GP Samples of presentation slides for GP 	Academic Program Committee	Jan 2023	June 2023	5 Mini project More presentation	Employer satisfaction
3.	Program handbook, both in soft and hard copy should be developed (R22)	Develop a Program Handbook for Students in hard and soft copy forms to ensure that basic information and procedure are readily available for students' further reference and guide.	Students Affairs Committee	August 2022	January 2023	Review the handbook by the quality coordinator	Handbook draft
4.	Arrange workshops for teaching staffs for quality tasks (R33)	Provide workshops to teaching staff on accreditation (including compliance with standards), communications with the students, and assessments.	Accreditation and Assessment Committee (AAC)	August 2022	May 2023	EE faculty members should attend one workshop annually from deanship of quality and development	Minimum one workshop annually for every faculty member
5.	Assessing and aligning the PLOs, CLOs and the graduation attributes (R13)	Revise the Learning Outcomes based on the latest requirements, revise graduate attributes, develop and regularly implement a comprehensive plan for properly	Accreditation and Assessment Committee (AAC)	August 2022	Dec. 2022	The EE council approval for the updated CLOs and	CLOs, PLOs mapping approval

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		assessing the attainment of the PLOs, should properly align all CLOs and PLOs with the proper learning domains, and include all the learning outcomes applicable for each the course, including design-related outcomes				SOs mapping and assessment reports	from EE council
6.	Increase Extracurricular Activities for Students (R27)	Implement an effective plan for extracurricular activities in a variety of fields to support the development of the student's abilities and skills and with proper linkage to the PLOs and graduate attributes, should support and motivate student participation, and should evaluate the achievement of the extracurricular activities periodically, and should develop action plans to ensure continuous improvement.	Students Affairs Committee	August 2022	June 2023	One Extracurricular Activities per academic year	Minimum One Extracurricular Activities per academic year
7.	Update database of Alumni (R28)	Implement a plan to speed up the process of activating the Alumni database with different communication and employment data documentation mechanisms.	Students Affairs Committee		June 2023	Review the database by the quality coordinator	Alumni database
8.	Arrange more quizzes related to the weak CLO be given and the CLO with weak performance be addressed earlier in the semester.	The EE quality coordinator will handover the course reports in the beginning of the new semester to all faculty members and they will be instructed to implement the recommendation.	Quality coordinator	August 2022	March 2023	Review the CR next semester	Course Report
9.	Students should solve at home various problems of the textbook related to the topics for course 204GE-3.	The EE quality coordinator will handover the course reports in the beginning of the new semester to course instructor and he will be instructed to implement the recommendation.	Quality coordinator	August 2022	March 2023	Review the CR next semester	Course Report
10.	Small group discussion should be implemented for courses 204GE-3, 212EE-3, 213EE-1, 215EE-3, 341EE-3, 323EE-3, 426EE-3, 422EE-3 and 417EE-3.	The EE quality coordinator will handover the course reports in the beginning of the new semester to relevant faculty members and they will be instructed to implement the recommendation.	Quality coordinator	August 2022	March 2023	Review the CRs next semester	Course Report
11.	Give emphasis on the CLOs that didn't reach the target level.	The EE quality coordinator will handover the course reports in the beginning of the new semester to relevant faculty members and they will be instructed to implement the recommendation.	Quality coordinator	August 2022	March 2023	Review the CRs next semester	Course Report
12.	Students need to do practice for programming for C language and MATLAB.	The EE quality coordinator will handover the course reports in the beginning of the new semester to relevant faculty members and they will be instructed to implement the recommendation.	Quality coordinator	August 2022	March 2023	Review the CRs next semester	Course Report

13.	The EE faculty members should participate in more National and International conferences and research exhibitions	The head of department should encourage all the faculty members to participate in the National and International conferences and research exhibitions.	Head of department	August 2022	July 2023	EE research report	EE research report
14.	Adding a third semester and lower the burden on students in each semester.	The next academic year has the tri-semester plan.	EE department	August 2022	July 2023	NA	NA
15.	Maintenance of air conditioners.	Coordination of EE head with the college manager	College manager	August 2022	July 2023	Student survey	Maintenance

I. Report Approving Authority

Council / Committee	Department Council	رؤية 2030	
Reference No.	14440424-0187-00007	30	هيئة تقويم التعليم والتدريب
Date	22/11/2022	المملكة العربية السعودية KINGDOM OF SAUDI ARABIA	Education & Training Evaluation Commission

J. Attachments :

- A separate cohort analysis report for male and female sections and for each branch
- [A report on the program learning outcomes assessment results for male and female sections and for each branch \(if any\)](#)
- [A report on the students evaluation of program quality](#)
- Independent reviewer's report and other [survey reports](#) (if any)

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