

Kingdom of Saudi Arabia

**The National Commission for Academic Accreditation
& Assessment**

**Program Specification
of
Electrical Engineering (EE)
Program**

**Department of Electrical Engineering
College of Engineering
Najran University**

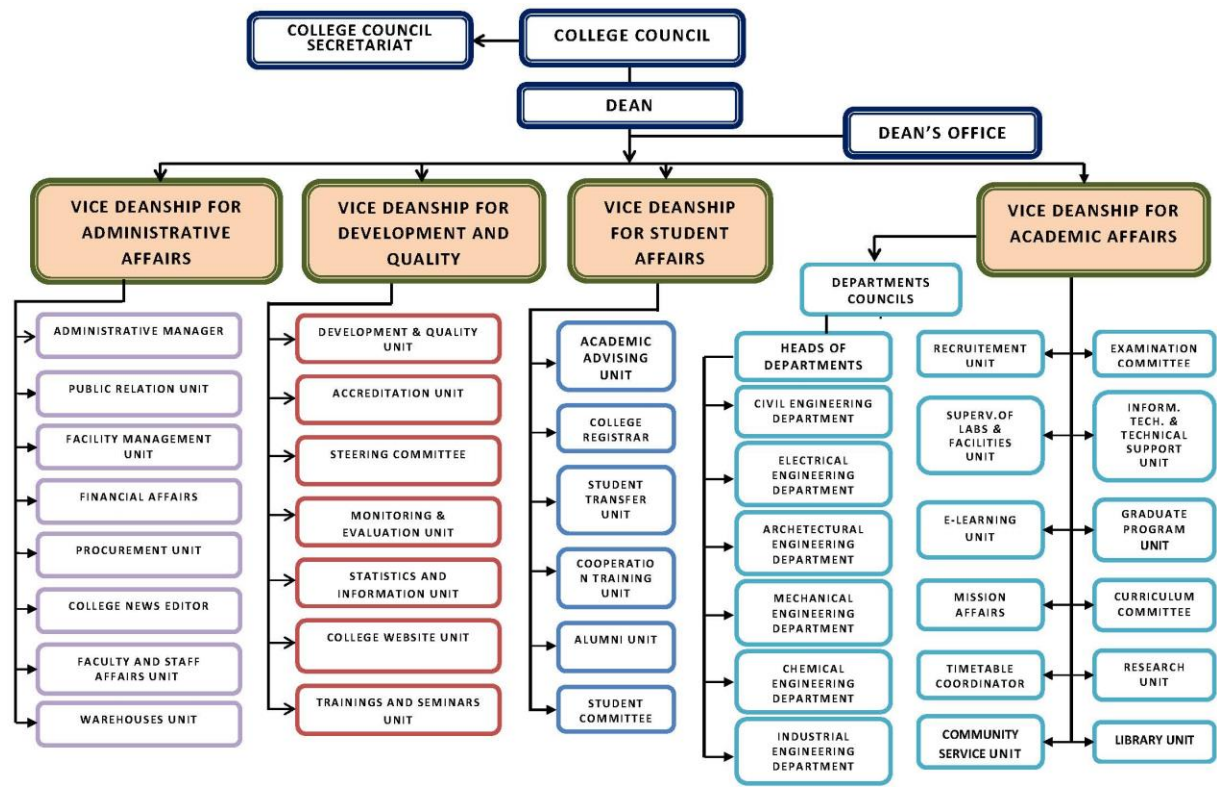
National Commission for Academic Accreditation & Assessment

Program Specifications

For guidance on the completion of this template, please refer to NCAAA guidebooks.

1. Institution: Najran University	Date of Report: 24/03/2016
2. College/Department: Engineering/ Electrical	
3. Head of Department: Assoc. Prof. Dr. Abdullah Al-Wadie	
4. Insert program administrative flowchart	

College of Engineering flowchart:



```

graph TD
    CC[COLLEGE COUNCIL] --> CS[COLLEGE COUNCIL SECRETARIAT]
    CC --> D[DEAN]
    D --> DO[DEAN'S OFFICE]
    D --> VDA[VICE DEANSHIP FOR ADMINISTRATIVE AFFAIRS]
    D --> VDDQ[VICE DEANSHIP FOR DEVELOPMENT AND QUALITY]
    D --> VDSA[VICE DEANSHIP FOR STUDENT AFFAIRS]
    D --> VDAcA[VICE DEANSHIP FOR ACADEMIC AFFAIRS]
    
    VDA --> AM[ADMINISTRATIVE MANAGER]
    VDA --> PRU[PUBLIC RELATION UNIT]
    VDA --> FMU[FACILITY MANAGEMENT UNIT]
    VDA --> FA[FINANCIAL AFFAIRS]
    VDA --> PU[PROCUREMENT UNIT]
    VDA --> CNE[COLLEGE NEWS EDITOR]
    VDA --> FSA[FACULTY AND STAFF AFFAIRS UNIT]
    VDA --> WU[WAREHOUSES UNIT]
    
    VDDQ --> DQU[DEVELOPMENT & QUALITY UNIT]
    VDDQ --> AU[ACCREDITATION UNIT]
    VDDQ --> SC[STEERING COMMITTEE]
    VDDQ --> MEU[MONITORING & EVALUATION UNIT]
    VDDQ --> SIIU[STATISTICS AND INFORMATION UNIT]
    VDDQ --> CWU[COLLEGE WEBSITE UNIT]
    VDDQ --> TSU[TRAININGS AND SEMINARS UNIT]
    
    VDSA --> AAU[ACADEMIC ADVISING UNIT]
    VDSA --> CR[COLLEGE REGISTRAR]
    VDSA --> STU[STUDENT TRANSFER UNIT]
    VDSA --> CTU[COOPERATION TRAINING UNIT]
    VDSA --> AU[ALUMNI UNIT]
    VDSA --> SC[STUDENT COMMITTEE]
    
    VDAcA --> DC[DEPARTMENTS COUNCILS]
    VDAcA --> RU[RECRUITMENT UNIT]
    VDAcA --> SFLU[SUPERV. OF LABS & FACILITIES UNIT]
    VDAcA --> ELU[E-LEARNING UNIT]
    VDAcA --> MA[MISSION AFFAIRS]
    VDAcA --> TC[TIMETABLE COORDINATOR]
    VDAcA --> CSU[COMMUNITY SERVICE UNIT]
    
    DC --> HD[HEADS OF DEPARTMENTS]
    HD --> CED[CIVIL ENGINEERING DEPARTMENT]
    HD --> EED[ELECTRICAL ENGINEERING DEPARTMENT]
    HD --> AED[ARCHETECTURAL ENGINEERING DEPARTMENT]
    HD --> MED[MECHANICAL ENGINEERING DEPARTMENT]
    HD --> CED[CHEMICAL ENGINEERING DEPARTMENT]
    HD --> IED[INDUSTRIAL ENGINEERING DEPARTMENT]
    
    VDAcA --> EC[EXAMINATION COMMITTEE]
    VDAcA --> ITSU[INFORM. TECH. & TECHNICAL SUPPORT UNIT]
    VDAcA --> GPU[GRADUATE PROGRAM UNIT]
    VDAcA --> CC[CURRICULUM COMMITTEE]
    VDAcA --> RU[RESEARCH UNIT]
    VDAcA --> LU[LIBRARY UNIT]
    
    EC <--> ITSU
    GPU <--> CC
    CC <--> RU
    RU <--> LU
  
```

Figure 1. College of Engineering flowchart

Electrical Engineering Department flowchart:

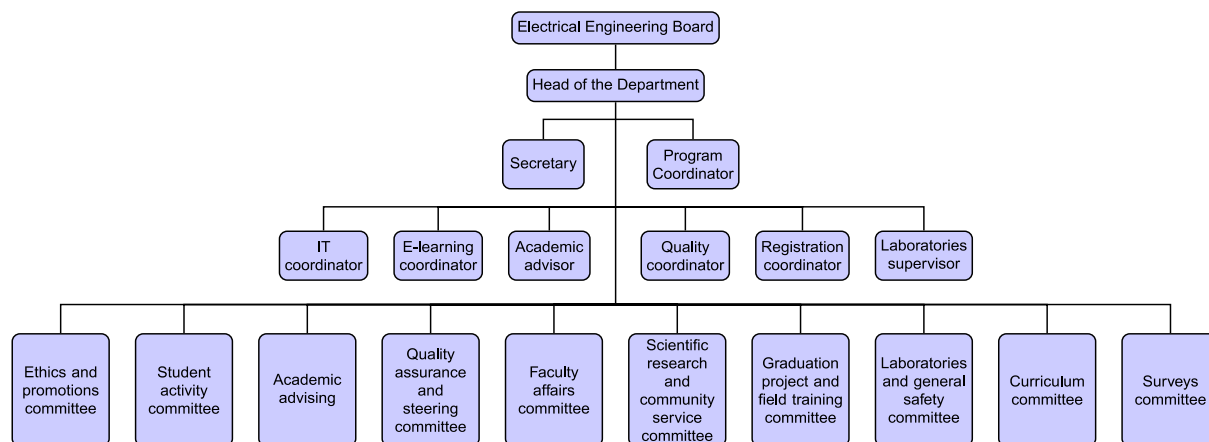


Figure 2. Electrical Engineering Department flowchart

5. List all branches/locations offering this program Najran University/ main campus

Branch/Location 1. _____ **Main Campus**

A. Program Identification and General Information

1. Program title and code Electrical Engineering, EE
2. Total credit hours needed for completion of the program 132 hours (without Preparatory year)
3. Award granted on completion of the program Bachelor of Electrical Engineering

4. Major tracks/pathways or specializations within the program (e.g. Power systems or communication engineering within an electrical engineering program or counselling or school psychology within a psychology program)

One track (Electrical Engineering)

5. Intermediate Exit Points and Awards (if any) (e.g. associate degree within a bachelor degree program)

Not applicable

6. **Professional occupations (licensed occupations, if any) for which graduates are prepared. (If there is an early exit point from the program (e.g. diploma or associate degree) include professions or occupations at each exit point)**

Electrical Engineers who may occupy these position :

- 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. (a) New Program

Planned starting date

(b) Continuing Program

Year of most recent major program review **2014/2015**

Organization involved in recent major review :internal within the institution in 2013,

Accreditation review by _____? Other _____?

Internally within the institution by a reviewing committee, included members from the department and the deanship of development and quality.

8.Name of program coordinator or chair. If a program coordinator or chair has been appointed for the female section as well as the male section, include names of both.

Dr. Abdullah Al-Wadie, Program Chairman

9. Date of approval by the authorized body (MoHE for private institutions and Council of Higher Education for public institutions).

Campus Branch/Location	Approval By	Date
Main Campus:		
Najran University / Faculty of Engineering	Council of Higher Education	1430H

B. Program Context

1. Explain why the program was established.

a. Summarize economic reasons, social or cultural reasons, technological developments, national policy developments or other reasons.

- 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.

b. Explain the relevance of the program to the mission and goals of the institution.

The mission of Najran University is:

"To provide distinctive education that meets the needs of society and the labor market and contribute effectively to the sustainable development through applied research, the optimal use of modern technologies and the active partnership at the local, regional and global levels."

The vision and mission of NU are posted on its website at:

<http://portal.nu.edu.sa/web/guest/university-mission;jsessionid=E902D22907AE694DB176460BE4F05506.s2>

The mission of the university (Najran University) focuses mainly on five Key Components (KCs) as follows:

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 labour 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 are depicted in Figure 3 below.

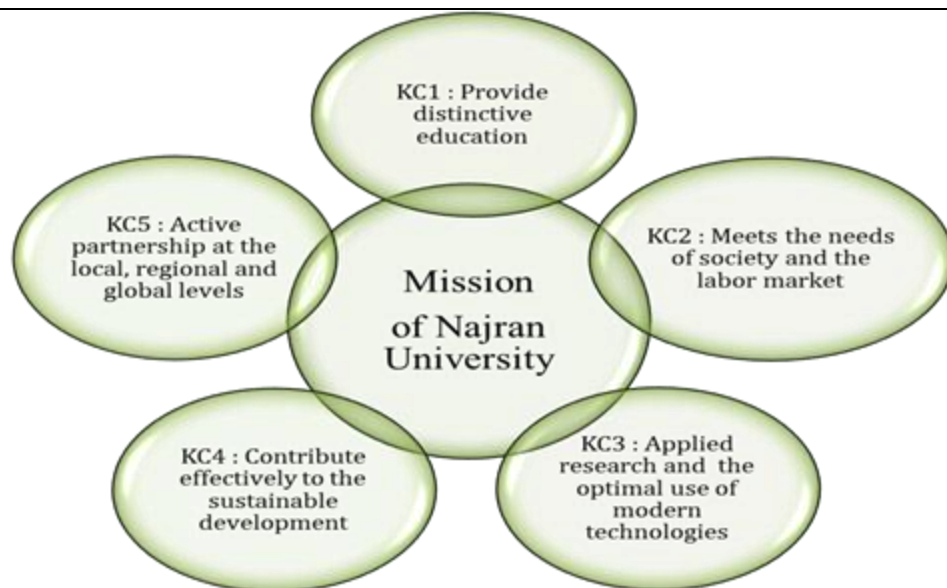


Figure 3.Analysis of the mission of Najran University into five key components

The mission of Electrical Engineering Program can also be divided into five key components (KC) as shown in the Figure 4.

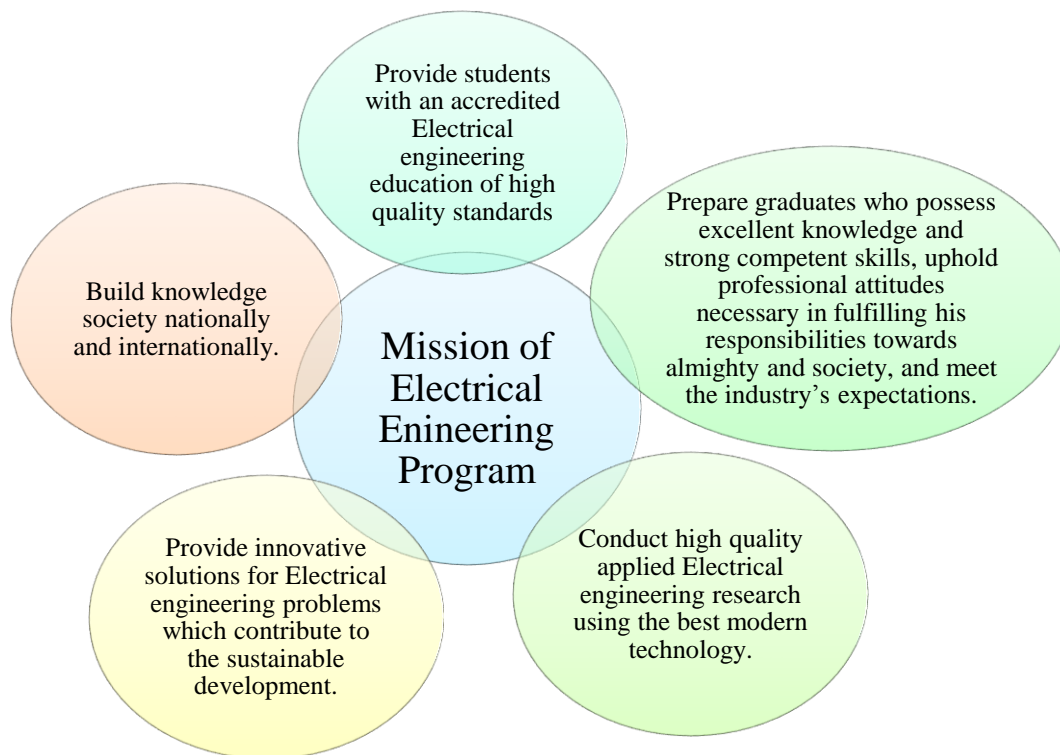


Figure 4.Analysis of the mission of Electrical Engineering Program into five key components

The mission of the Electrical Engineering program is consistent with and supports the mission of the institution. The matrices shown in Table 1 and Table 2 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 1. Mapping Relationship Between Mission Of College Of Engineering & Mission Of the University

Mission of College of Engineering	Mission of the University				
	Provide distinctive education	Meets the needs of society and the labour 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 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 contribute to the sustainable and comprehensive development				√	
To build the knowledge society nationally and internationally					√

Table 2: The Alignment matrix between the mission of the College of Engineering and the mission of the University.

Mission of Electrical Engineering Program	Mission of the University				
	Provide distinctive education	Meets the needs of society and the labour 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	✓				
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					✓

2. Relationship (if any) to other programs offered by the institution/college/department.

a. Does this program offer courses that students in other programs are required to take? **Yes**
No

If yes, what has been done to make sure those courses meet the needs of students in the other programs?

b. Does the program require students to take courses taught by other departments? **Yes**
No

If yes, what has been done to make sure those courses in other departments meet the needs of students in this program?

Students need a basic understanding of Islamic studies, **mathematics, physics, natural sciences**, social sciences and humanities to get a well-rounded education. Those are faculty and university requirement courses. All courses that are taught by other departments contribute to the student outcomes of the program. The course specifications (NCAAA template) including syllabus, descriptions and course learning outcomes of all courses taught by other departments must be available to the program in order to make sure that they meet the program's needs. In addition, all courses' syllabi and reports along with other necessary documents of courses taught by other departments must be reviewed by the Program Curriculum Committee to ensure that they are all working towards the achievements of student outcomes of the electrical engineering program. Moreover, students can give their opinions about courses taught by other departments through the current student survey and exit survey.

In the table for program learning outcomes mapping matrix, we will provide how non-EE courses are aligned to the student outcomes of the Electrical Engineering (EE) program.

3. Do students who are likely to be enrolled in the program have any special needs or characteristics? (e.g. Part time evening students, physical and academic disabilities, limited IT or language skills).

Yes **No**

The students entering the department must have sufficient proficiency in the English language skills, mathematics, physics and skills in computing.

The university is offering a preparatory year, which we expect, will strengthen the students' English language skills, mathematics, and skills in computing. However, The department requires a minimum entry level for students coming from the Prep Year.

4. What modifications or services are you providing for special needs applicants?

None

C. Mission, Goals and Objectives

1. Program Mission Statement:

The program in Electrical Engineering will prepare undergraduate students to accept and fulfill responsibilities across a broad spectrum of activities, including:

- 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 and 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 society nationally and internationally.

2. List goals and objectives of the program within to help achieve the mission. For each goal and objective describe the major strategies to be followed and list the indicators that are used to measure achievement.

In Electrical Engineering program, we have used the mission as the basis for establishment of the program goals and objectives. Our goals for the development of the program are consistent with and support the mission. They are stated with sufficient clarity to effectively guide planning and decision-making in ways that are consistent with the mission. Goals and objectives are periodically reviewed and reaffirmed or modified as necessary in the light of changing circumstances to ensure they continue to support the mission.

Specific objectives for each goal of the program are consistent with the mission and the broad goals for development. Statements of major objectives are accompanied by specification of clearly defined and measurable indicators that are used to judge the extent to which objectives and the mission are being achieved.

Mapping matrix between the Program Objectives (Obs) and Program Goals is given in the table below.

Electrical Engineering Program Objectives (Obs)	Electrical Engineering Program Goals		
	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.
Ob1: Technically compete in their respective electrical engineering field and conceiving, designing and executing broad range of electrical engineering tasks locally and globally	✓		
Ob2: Meet industry's expectations in electrical engineering with excellent communication and leadership skills	✓		
Ob3: Contribute to the society through providing innovative solutions for electrical engineering problems and function on multi-disciplinary teams		✓	
Ob4: Pursue their electrical engineering professional development through self-learning and advanced graduate studies if qualified and interested.		✓	✓
Ob5: Uphold professional and social ethics necessary in fulfilling his responsibilities towards the Almighty, clients and the society and contribute to the sustainable development to the Kingdom			✓

The following table summarizes the broad goals of the program, the specific objectives supporting each goal, major strategies used, and the associated measurable Key Performance Indicators (KPIs).

Goals and Objectives	Major Strategies	Measurable Indicators
<p>Goal #1 Provide high quality electrical engineering education recognized nationally and internationally</p> <p>Objectives: Ob1: Technically compete in their respective electrical engineering field and conceiving, designing and executing broad range of electrical engineering tasks locally and globally</p> <p>Ob2: Meet industry's expectations in electrical engineering with excellent communication and leadership skills</p>	Periodic review and assessment of EE curriculums in consultation with industry to obtain a distinct study plan.	<ul style="list-style-type: none"> Satisfaction ratio of students and faculty members and the employers on the mission, educational objectives and students outcomes of the electrical engineering program. Satisfaction ratio of employers about graduates professional and personal skills. Levels of attainment for each student's outcomes.
	Development of staff skills	<ul style="list-style-type: none"> The number of staff attending training courses
	Compare EE curriculums with national and international universities	<ul style="list-style-type: none"> Percentage of matching between EE curriculum with national and international universities
	Recruit qualified staff	<ul style="list-style-type: none"> Percentage of teaching staff with verified doctoral qualifications. Number of awards received by the EE staff Ratio of students to fulltime teaching staff at the program level.
	Prepare students to engage in long life learning	<ul style="list-style-type: none"> Percentage of graduates of Bachelor's degree enrolled in postgraduate study.
	Obtaining national and international academic accreditation for the EE program.	<ul style="list-style-type: none"> Progression percentage of implementing work plan for obtaining national and international accreditations. Percentage of teaching staff received training or attended workshops for national and international accreditations systems.
	Enhance the employment rate for the EE program graduates	<ul style="list-style-type: none"> Percentage of graduates of Bachelor's degree employed within 6 months of graduation.
<p>Goal #2: Conduct excellent applied scientific electrical engineering research, contribute to</p>	Research cooperation	<ul style="list-style-type: none"> Number of joint research and agreement with other research institutions
	Distinct scientific and academic promotion for students and EE staff	<ul style="list-style-type: none"> The ratio of articles published in scholarly journals or presented at conferences to the number of EE staff

<p>solving electrical engineering problems, and meet nation's needs</p> <p>Objectives: Ob3: Contribute to the society through providing innovative solutions for electrical engineering problems and function on multi-disciplinary teams</p> <p>Ob4: Pursue their electrical engineering professional development through self-learning and advanced graduate studies if qualified and interested.</p>	<p>Training staff for preparing research proposals</p>	<ul style="list-style-type: none"> Number of staff attend training courses for research methodology and preparing research proposal Number of supported research
	<p>Involve student in research activity conducted by the staff in the EE program</p>	<ul style="list-style-type: none"> Number of student enrolled in research activity
	<p>Planning of research projects</p>	<ul style="list-style-type: none"> Research plans
	<p>Start postgraduate program in electrical engineering</p>	<ul style="list-style-type: none"> Postgraduate program progress development
<p>Goal #3: Engage with his profession and community and continue to develop professionally, socially, and personally.</p> <p>Objectives: Ob4: Pursue their electrical engineering professional development through self-learning and advanced graduate studies if qualified and interested.</p> <p>Ob5: Uphold professional and social ethics necessary in fulfilling his responsibilities towards the Almighty, clients and the society and</p>	<p>Engagement and involvement of EE staff and students in professional activities or professional societies</p>	<ul style="list-style-type: none"> The number of EE staff and students participating in professional development activities or members in professional societies
	<p>provided consulting and community service activities</p>	<ul style="list-style-type: none"> Number of community service programs conducted by the EE program Number of EE staff and student involved in community service programs
	<p>Strengthen EE program relation with national and international organization partnerships</p>	<ul style="list-style-type: none"> Number partnerships with national and international organization
	<p>Increase the community awareness on the roles and functions of the program</p>	<ul style="list-style-type: none"> Percentage of members from program advisory board contain representatives from community

contribute to the sustainable development of the Kingdom		
--	--	--

D. Program Structure and Organization

1. Program Description:

List the core and elective program courses offered each semester from Prep Year to graduation using the below Curriculum Study Plan Table (A separate table is required for each branch IF a given branch/location offers a different study plan).

A program or department manual should be available for students or other stakeholders and a copy of the information relating to this program should be attached to the program specification. This information should include required and elective courses, credit hour requirements and department/college and institution requirements, and details of courses to be taken in each year or semester.

Curriculum Study Plan Table

Year	Course Code	Course Title	Required or Elective	Credit Hours	College or Department
Prep. Year Semester 1			Required		
	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
Prep. Year Semester 2			Required		
	150MAN-1	Occupational ethics	Required	1	Preparatory Year
	140MATH-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
1 st Year Semester 1			Required		
	101CHM-3	General Chemistry	Required	3	College
	104PHIS-4	Principles of General Physics	Required	4	College
	106MATH-3	Integral Calculus	Required	3	College
	107MATH-3	Algebra & Analytical Geometry	Required	3	College

	107ENG-3	Technical Writing for Engineers	Required	3	College
1st Year Semester 2			Required		
	111ISL-2	Introduction to Islamic Culture 1	Required	2	College
	101GE-3	Statics	Required	3	College
	203MATH-3	Advanced Calculus	Required	3	College
	102GE-2	Introduction to Engineering Design	Required	2	Department
	108ENG-2	Communication Skills for Engineers	Required	2	Department
	105PHIS-4	Advanced Physics	Required	4	College
2nd Year Semester 1			Required		
	112ISL-2	Introduction to Islamic Culture 2	Required	2	College
	204MATH-3	Differential Equations	Required	3	College
	204GE-3	Computer Programming for Engineers	Required	3	College
	211EE-3	Fundamentals of Electric Circuits	Required	3	Department
	212EE-3	Electromagnetism (1)	Required	3	Department
	203GE-3	Engineering Drawing	Required	3	College
2nd Year Semester 2			Required		
	214EE-3	Electric Circuit Analysis	Required	3	Department
	215EE-3	Electromagnetism (2)	Required	3	Department
	213EE-1	Electric Circuits Lab	Required	1	Department
	324STAT-3	Probability and Engineering Statistics	Required	3	College
	201ARAB-2	Arabic Language Skills	Required	2	College
	205GE-3	Dynamics	Required	3	College
	254MATH-3	Numerical Methods	Required	3	College
3rd Year Semester 1			Required		
	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	3	Department
	333EE-3	Basics of Electronic Devices	Required	3	Department
	334EE-1	Basic Electronics Laboratory	Required	1	Department
	325EE-3	Electrical Machines	Required	3	Department
3rd Year Semester 2			Required		
	341EE-3	Communications Principles	Required	3	Department
	342EE-1	Communications Lab	Required	1	Department
	323EE-3	Automatic Control	Required	3	Department
	324EE-1	Automatic Control Lab	Required	1	Department
	335EE-3	Introduction to Microprocessors	Required	3	Department
	336EE-1	Microprocessor and Microcontroller Lab	Required	1	Department
	351EE-3	Computer programming for	Required	3	Department

		Electrical Engineering			
	113ISL-2	Islamic Culture 3	Required		College
	490EE-0	Summer field-training *			
4th Year Semester 1			Required		
	491EE-2	Graduation Project I	Required	2	Department
	426EE-3	Fundamentals of Power Systems	Required	3	Department
	416EE-3	Electrical measurements	Required	3	Department
	437EE-3	Digital Signal Processing	Required	3	Department
	422EE-3	Electromechanical Energy Conversion	Required	3	Department
	202ARAB-2	Arabic Writing	Required	2	College
4th Year Semester 2			Required		
	492EE-3	Graduation Project II	Required	3	Department
	407GE-2	Management of Engineering Projects	Required	3	Department
	427EE-3	Electric Drives	Required	3	Department
	417EE-3	Utilization of Electric Energy	Required	3	Department
	428EE-3	Applied Control	Required	3	Department
	114ISL-2	Islamic Culture 4	Required	2	College
* The summer field training is Required for graduate without credit and will be registered after the eighth level					

2. Required Field Experience Component (if any, e.g. internship, cooperative program, work experience).

Summary of practical, clinical or internship component required in the program. Note: see Field Experience Specification

a. Brief description of field experience activity

There is a summer-semester field-training course EE-490; this subject can be registered only after the 8th semester level. This summer field-training course is considered a main requirement for the final graduation. During this field-training course, the student achieves the following benefits

- Recognition of the actual electrical engineering field requirements and problems and experience the real work environment
- Working in a team to acquire the character of cooperation and self-integration.
- Linking the theoretical learnt background with the practical circumstances.
- Get the experience on the new construction techniques and machines.
- Learn methods of electrical engineering design and the available software for drawing and design.
- Learn to deal and understand the engineering drawing and documentation

The expected learning outcomes for the field experience are:

- Apply the electrical engineering knowledge to solve real life problems.

- b. Integrate themselves in the work environment and develop professional relationships.
- c. Acquire a good understanding of work organization in real-life environment.
- d. Communicate effectively within the working environment.
- e. Work independently and in a team.
- f. Work with people having different backgrounds.
- g. Develop professional skills.
- h. Acquire professional and ethical responsibilities.

Trainees will be assessed by the organizations as well as the program. The training is graded on a PASS/FAIL basis. The students will be evaluated based on the followings:

- **Logbook and Report**

- Student Logbook (20%)
The logbook must be signed by the supervisor each week and must include daily entry into the summary report and detail documentation of daily activities. The academic advisor will assess the logbook.
- Student Training Report (20%)
Include summary report, which must be type written in English language. Describe how the activities in the practical training have contributed towards each of the course outcomes listed. The report should be written according to the training report guidelines. The placement report will be assessed by the training advisor.

- **Overall Assessment**

- Industrial Supervisor 20%
- Faculty Supervisor 20%
- Student Training Report 20%
- Student logbook 20%
- Defense of Training 20%

$$\text{Final Grade} = \text{summation above} \times \frac{\text{attendance days}}{\text{Training days}} \times 100\%$$

Students must obtain a minimum of 50% in each of the above component and 60% on the overall assessment in order to pass.

b. At what stage or stages in the program does the field experience occur? (e.g. year, semester)

The students are able to register for field training course after the completion of the 8th level.

c. Time allocation and scheduling arrangement. (e.g. 3 days per week for 4 weeks, full time for one semester)

- Full time for one summer semester (8 weeks) OR 3 day per week for the normal semester (16weeks).

d. Number of credit hours (if any)

No credit hours

3. Project or Research Requirements (if any)

Summary of any project or thesis requirements in the program. (Other than projects or assignments within individual courses) (A copy of the requirements for the project should be attached.)

a. Brief description

The curriculum contains a mandatory ‘Senior Design Project’, a capstone senior-level design course that must be completed under the supervision of a faculty member. The student is required to undertake a design project that has components of analysis, synthesis, design, evaluation, alternative solutions and cost estimation. The main objectives of the graduation project are:

- To make the students understand and practice the basic concepts of engineering design for multidisciplinary electrical engineering project.
- To expose the students to group learning and teamwork by working on a multidisciplinary project.
- To improve the oral and written communication skills of the students.
- To make students capable of integrated project planning, scheduling, and cost analysis for electrical engineering project.
- To let the students demonstrate their abilities in all Student Outcomes (SOs) as prescribed by the department.

A comprehensive report on the project work is required from the student besides presentation of the work in front of an examining committee. In addition,

- Each student should be involved with a definite group of students.
- Each group has to design some selected engineering process according to the different Electrical engineering branches (Machines, Power, Electronics, Control, Communications...etc.).
- Each student has his own parameters of design to be different among his group mates.
- Each student has to produce a complete analytical design process and a complete Engineering sheet drawings.

b. List the major intended learning outcomes of the project or research task.

The following are the expected learning outcomes of the senior design project (Project (II)):

	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
1.0	Knowledge		

1.1	Conduct enough literature review in the project domain	discussion rounds, homework, tutorials, assignments	Discussion, presentation
1.2			
2.0	Cognitive Skills		
2.1	Identify and formulate engineering problems in the area of electrical Engineering	discussion rounds, homework, tutorials, assignments	Discussion, presentation
2.2	Design a system, component or process with defined constraints	discussion rounds, homework, tutorials, assignments	Discussion, presentation
	Solve engineering problems and implement designed solutions	discussion rounds, homework, tutorials, assignments	Discussion, presentation
3.0	Interpersonal Skills & Responsibility		
3.1	Collect and analyse data, and draw conclusions through experiments while testing a project.	discussion rounds, homework, tutorials, assignments	Discussion, presentation
3.2	Function in multidisciplinary teams		
4.0	Communication, Information Technology, Numerical		
4.1	Communicate effectively in written engineering report and in oral presentation	discussion rounds, homework, tutorials, assignments	Discussion, presentation
4.2			
5.0	Psychomotor		
5.1			
5.2			

c. At what stage or stages in the program is the project or research undertaken? (e.g. year, semester)

The graduation project is divided into two courses:

- Graduation project (I) EE 491, which is in the 9th semester level, the student may register for it after the completion of the prerequisite courses (**323EE-3** Automatic Control, **351EE-3** Computer programming for Electrical Engineering, and **491EE-2** Project (I) as a prerequisite for Project (II)).
- Graduation project (II) EE 492, which is in the 10th final semester level, the student may register for it after successful completion of the graduation project 1.
- Both of these courses are main requirements to be graduated.

d. Number of credit hours (if any)

- Graduation project (I) Code EE 491 has 2 credit hours.
- Graduation project (II) Code EE 492 has 3 credit hours.

e. Description of academic advising and support mechanisms for students.

Each graduation project student group will be assigned a faculty member from the same department to serve as an advisor for the project to guide them throughout their work. The courses are counted towards the supervisor's teaching load. A department-level coordinator is assigned to manage the courses. His duties include advising students on rules and procedures. At the first meeting, the advisor should determine the duration between the subsequent meetings. The group should continuously keep their advisor up to date with their progress and the obstacles that they face. Aiding the students to suggest a plan for the project steps including a time schedule. The graduation project students can benefit from the following:

- Weekly consulting for each student from his supervisor.
- Different labs covering all the practical subjects, e.g. circuit, power, machines, communications, and control labs.
- Computer laboratory to help students to type and draw their projects.
- A copy of the previous projects for the graduated students is available for the students to help them to follow arrangement and output frame details.

f. Description of assessment procedures (including mechanism for verification of standards)

The graduation project assessment has much more weight than the direct other course assessment because the students are close to graduation and their abilities in all of the Student Outcomes (SOs) are assessed in the graduation project.

The procedures for graduate project assessment may summarized as follows:

- Through the graduation project semester, the supervisor makes a continuous assessment for the student work and activity and the team work.
- All the graduation projects' defenses will be scheduled in the last week of classes. A complete schedule for all the defenses will be announced at an early time. The schedule shows each group's defense time, locations, and examiners.
- Each student group should submit all the defense committee members a copy from their final graduation project report at least three days before the defense day.
- In the project's defense, the advisor and the examiners are going to investigate the project's deliverables with the group. Then, they are going to complete the evaluation forms. These forms evaluate the students in two perspectives 1) group based 2) individual based. Finally, a final evaluation form is submitted to the department. For each student, the advisor has 60% of the project's final grade and the two examiners have the rest 40%.

- o The student evaluation will be conducted using the evaluation form for each student for which the form base on rubric that supports reliable grading system, the main dimensions of the rubrics include:
 - o Report (General Organization, content, level type, method)
 - o The Visual presentation of the project (the content, conclusions, clarity, thoroughness, the language, the degree of literacy, time commitment)
 - o The level of knowledge of the contents of the project (answered questions)
 - o The overall assessment of the project (the importance of the subject and the degree of difficulty, the amount of effort, integration)

4. Learning Outcomes in Domains of Learning, Assessment Methods and Teaching Strategy

Program Learning Outcomes, Assessment Methods, and Teaching Strategy work together and are aligned. They are joined together as one, coherent, unity that collectively articulate a consistent agreement between student learning and teaching.

The *National Qualification Framework* provides five learning domains. Learning outcomes are required in the first four domains and sometimes are also required in the Psychomotor Domain.

On the table below are the five NQF Learning Domains, numbered in the left column. For Program Accreditation there are four learning outcomes required for knowledge and cognitive skills. The other three domains require at least two learning outcomes. Additional learning outcomes are suggested.

First, insert the suitable and measurable learning outcomes required in each of the learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each program learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process.

	NQF Learning Domains and Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	Knowledge		
1.1	To recognize the broad education necessary to understand the impact of engineering solutions to economic, environmental and society and to improving quality of life.	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment

			<p>4. PAC meetings and discussions (once a year)</p> <p>5. Courses Survey (on all courses each semester)</p>
1.2	To recognize the knowledge of contemporary issues in electrical engineering.	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 1. Exit Survey (Each Semester) 2. Current Student Survey (Each Semester) 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year)

		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.	5. Courses Survey (on all courses each semester)
1.3	To develop and use techniques and skills using modern engineering methods and tools needed in electrical engineering practices.	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 1. Exit Survey (Each Semester) 2. Current Student Survey (Each

		<p>instructor or discuss solutions with other students.</p> <ul style="list-style-type: none"> - 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. 	<p>Semester)</p> <ol style="list-style-type: none"> 3. Graduation Project Assessment 4. PAC meetings and discussions (once a year) 5. Courses Survey (on all courses each semester)
2.0	Cognitive Skills		
2.1	<p>To identify and apply knowledge of mathematics and sciences and engineering in electrical engineering problems.</p>	<ul style="list-style-type: none"> - 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, 	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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

		<p>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.</p> <ul style="list-style-type: none"> - 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. 	<p>exam.</p> <ul style="list-style-type: none"> - Indirect Methods - These can include the following: <ol style="list-style-type: none"> 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)
2.2	To design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering projects.	<ul style="list-style-type: none"> - 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, 	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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,

		<p>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.</p> <ul style="list-style-type: none"> - 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. 	<p>for example, use of cell phones in classrooms or labs, talking to each other during the lectures, or cheating in an exam.</p> <ul style="list-style-type: none"> - Indirect Methods - These can include the following: <ol style="list-style-type: none"> 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)
2.3	To design an optimum electrical engineering system/component to meet desired needs with realistic constraints.	<ul style="list-style-type: none"> - 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/). 	<ul style="list-style-type: none"> - 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

		<p>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.</p> <ul style="list-style-type: none"> - 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. 	<p>learning, and volunteer presentation in classroom.</p> <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 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)
2.4	To identify, formulate, and solve electrical engineering problems and to evaluate and synthesize information in order to provide best alternative solutions.	<ul style="list-style-type: none"> - 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- 	<ul style="list-style-type: none"> - 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

		<p>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.</p> <ul style="list-style-type: none"> - 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. 	<p>example, good participation in class discussion, evidence of life-long learning, and volunteer presentation in classroom.</p> <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 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)
3.0	Interpersonal Skills & Responsibility		
3.1	<p>To function effectively on multi-disciplinary electrical engineering teams.</p>	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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,

		<p>teamwork project</p> <ul style="list-style-type: none"> - 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. 	<p>drawing exercises, computer programming exercises, life-long learning assignments teamwork assignments.</p> <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 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)
3.2	To communicate effectively, prepare professionally written materials, graphical communications and deliver professional oral and written presentations.	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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

		<p>through discussions in classrooms.</p> <ul style="list-style-type: none"> - 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. 	<p>learning assignments teamwork assignments.</p> <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 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)
4.0	Communication, Information Technology, Numerical skills		
4.1	To act professionally and ethically and recognize the impact of liability issues in electrical engineering projects and constructions.	<ul style="list-style-type: none"> - 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. 	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - 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

		<ul style="list-style-type: none"> - 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. 	<p>problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others.</p> <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 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)
4.2	To recognize the need for and an ability to engage in life-long learning and continuing education of professional/engineering skills.	<ul style="list-style-type: none"> - 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 	<ul style="list-style-type: none"> - 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: <ul style="list-style-type: none"> - Direct methods - Grading analysis and Course learning outcomes analysis using the accreditation software CLOSO. - Midterm examinations, quizzes, and a final examination, which consist of

		<p>by the instructor.</p> <ul style="list-style-type: none"> - 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-3 applied control, 341EE-3 communications principles, 336EE-1 microprocessor and microcontroller lab, and 324EE-1 automatic control lab heavily use these teaching strategies. 	<p>descriptive questions, numerical problems, multiple-choice/true-false questions, fill in the blanks, programming exercise, and others.</p> <ul style="list-style-type: none"> - 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: <ol style="list-style-type: none"> 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)
5.0	Psychomotor		
5.1	Not available.		
5.2			

NQF Learning Outcome Verb, Assessment, and Teaching Strategies and Suggestions

NQF Learning Domains	Suggested Verbs
Knowledge	list, name, record, define, label, outline, state, describe, recall, memorize, reproduce, recognize, record, tell, write
Cognitive Skills	estimate, explain, summarize, write, compare, contrast, diagram, subdivide, differentiate, criticize, calculate, analyse, compose, develop, create, prepare, reconstruct, reorganize, summarize, explain, predict, justify, rate, evaluate, plan, design, measure, judge, justify, interpret, appraise
Interpersonal Skills & Responsibility	demonstrate, judge, choose, illustrate, modify, show, use, appraise, evaluate, justify, analyse, question, and write
Communication, Information Technology, Numerical skills	demonstrate, calculate, illustrate, interpret, research, question, operate, appraise, evaluate, assess, and criticize
Psychomotor	demonstrate, show, illustrate, perform, dramatize, employ, manipulate, operate, prepare, produce, draw, diagram, examine, construct, assemble, experiment, and reconstruct

Suggested **verbs not to use** when writing measurable and assessable learning outcomes are as follows:

Consider	Maximize	Continue	Review	Ensure	Enlarge	Understand
Maintain	Reflect	Examine	Strengthen	Explore	Encourage	Deepen

Some of these verbs can be used if tied to specific actions or quantification.

Suggested assessment methods and teaching strategies are:

According to research and best practices, multiple and continuous assessment methods are required to verify student learning. Current trends incorporate a wide range of rubric assessment tools; including web-based student performance systems that apply rubrics, benchmarks, KPIs, and analysis. Rubrics are especially helpful for qualitative evaluation. Differentiated assessment strategies include: exams, portfolios, long and short essays, log books, analytical reports, individual and group presentations, posters, journals, case studies, lab manuals, video analysis, group reports, lab reports, debates, speeches, learning logs, peer evaluations, self-evaluations, videos, graphs, dramatic performances, tables, demonstrations, graphic organizers, discussion forums, interviews, learning contracts, antidotal notes, artwork, KWL charts, and concept mapping.

Differentiated teaching strategies should be selected to align with the curriculum taught, the needs of students, and the intended learning outcomes. Teaching methods include: lecture, debate, small group work, whole group and small group discussion, research activities, lab demonstrations, projects, debates, role playing, case studies, guest speakers, memorization, humour, individual presentation, brainstorming, and a wide variety of hands-on student learning activities.

Program Learning Outcome Mapping Matrix

Identify on the table below the courses that are required to teach the program learning outcomes. Insert the program learning outcomes, according to the level of instruction, from the above table below and indicate the courses and levels that are required to teach each one; use your program's course numbers across the top and the following level scale. Levels: I = Introduction P = Proficient A = Advanced

Preparatory Year Courses

Course Offerings		140TEC-3	140MATH-2	140SKL-2	140ENGG-2	141ENGG-2	142ENGG-2	143ENGG-2	150MAN-1	150MATH-4	150SKL-2	150ENGG-3	151ENGG-2
NQF Learning Domains and Learning Outcomes													
1.0	Knowledge												
1.1	To possess the broad education necessary to understand the impact of engineering solutions in economic, environmental and societal context, and to improve the quality of life.	I	I							I			
1.2	To recognize the contemporary issues in electrical engineering.	I											
1.3	To use techniques, skills, and modern engineering tools necessary for electrical engineering practices.	I											
2.0	Cognitive Skills												
2.1	To identify and apply knowledge of mathematics and sciences and engineering in electrical engineering problems.	I	I							I			
2.2	To design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering projects.												
2.3	To design an optimum electrical engineering system/component to meet desired needs with realistic constraints.												
2.4	To identify, formulate, and solve electrical engineering problems and to evaluate and synthesize information in order to provide best alternative solutions.												
3.0	Interpersonal Skills & Responsibility												
3.1	To function effectively in multi-disciplinary electrical engineering teams.			I	I				I		I	I	I
3.2	To communicate effectively, prepare professionally written materials, graphical communications and deliver professional oral and written presentations.	I		I	I	I	I	I			I	I	I
4.0	Communication, Information Technology, Numerical skills												
4.1	To act professionally and ethically and												

2.1	To identify and apply knowledge of mathematics and sciences and engineering in electrical engineering problems.			P	A	A		A	A	A				
2.2	To design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering projects.									A				
2.3	To design an optimum electrical engineering system/component to meet desired needs with realistic constraints.								I					
2.4	To identify, formulate, and solve electrical engineering problems and to evaluate and synthesize information in order to provide best alternative solutions.			A	A	A		A	P					
3.0	Interpersonal Skills & Responsibility													
3.1	To function effectively in multi-disciplinary electrical engineering teams.									A				
3.2	To communicate effectively, prepare professionally written materials, graphical communications and deliver professional oral and written presentations.								I					
4.0	Communication, Information Technology, Numerical skills													
4.1	To act professionally and ethically and recognize the impact of liability issues in electrical engineering projects and installations.			I										
4.2	To recognize the need in life-long learning and to engage in continuing education of professional/engineering skills.					I								
5.0	Psychomotor													
5.1	Not available													
5.2														

THIRD YEAR COURSES

Course Offerings		306GE-2	331EE-3	332EE-1	321EE-3	333EE-3	334EE-1	325EE-3	341EE-3	342EE-1	323EE-3	324EE-3	335EE-3	336EE-1	351EE-3	113ISL-2	490EE-0
1.0	Knowledge																
1.1	To possess the broad education necessary to understand the impact of engineering solutions in economic, environmental and societal context, and to improve the quality of life.						I						I				
1.2	To recognize the contemporary issues in electrical engineering.				A			I		I			P				
1.3	To use techniques, skills, and modern engineering tools necessary for electrical engineering practices.		P	A	P		A	A	I	P	A	A	P	A	A		
2.0	Cognitive Skills																
2.1	To identify and apply knowledge of mathematics and sciences and engineering in electrical engineering problems.		A	A	A	A	A	A	P	P	A	A	A	P	A		
2.2	To design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering projects.			A			A	I		A		P		A	P		
2.3	To design an optimum electrical engineering system/component to meet desired needs with realistic constraints.		A	I	I				I	A			I	A	P		
2.4	To identify, formulate, and solve electrical engineering problems and to evaluate and synthesize information in order to provide best alternative solutions.		A	A	A	A		A	P	P	A	P	A	A	A		
3.0	Interpersonal Skills & Responsibility																
3.1	To function effectively in multi-disciplinary electrical engineering teams.			A			I	I		I		P			P		
3.2	To communicate effectively, prepare professionally written materials,							I	I	A		I		A			

	graphical communications and deliver professional oral and written presentations.																		
4.0	Communication, Information Technology, Numerical skills																		
4.1	To act professionally and ethically and recognize the impact of liability issues in electrical engineering projects.																		
4.2	To recognize the need in life-long learning and to engage in continuing education of professional/engineering skills.						I		I	P									
5.0	Psychomotor																		
5.1	Not available																		
5.2																			

FOURTH YEAR COURSES

Course Offerings		426EE-3	416EE-3	437EE-3	422EE-3	202ARAB-2	492EE-3	407GE-2	427EE-3	417EE-3	428EE-3	114ISL-2	
NQF Learning Domains and Learning Outcomes													
1.0	Knowledge												
1.1	To possess the broad education necessary to understand the impact of engineering solutions in economic, environmental and societal context, and to improve the quality of life.		I		P		I		P				
1.2	To recognize the contemporary issues in electrical engineering.	I		A	I		P		P				
1.3	To use techniques, skills, and modern engineering tools necessary for electrical engineering practices.	A	I		I		P			A	A		
2.0	Cognitive Skills												
2.1	To identify and apply knowledge of mathematics and sciences and engineering in electrical engineering	A	A	P	A		P		A	A	A		

	problems.												
2.2	To design and conduct experiments, as well as to analyze and interpret data required for solving electrical engineering projects.			P	A		P		A		P		
2.3	To design an optimum electrical engineering system/component to meet desired needs with realistic constraints.			P			P		A		I		
2.4	To identify, formulate, and solve electrical engineering problems and to evaluate and synthesize information in order to provide best alternative solutions.	A	A	A	A		P		A	A	P		
3.0	Interpersonal Skills & Responsibility												
3.1	To function effectively in multi-disciplinary electrical engineering teams.			I			I				I		
3.2	To communicate effectively, prepare professionally written materials, graphical communications and deliver professional oral and written presentations.				I		I				P		
4.0	Communication, Information Technology, Numerical skills												
4.1	To act professionally and ethically and recognize the impact of liability issues in electrical engineering projects and installations.						I						
4.2	To recognize the need in life-long learning and to engage in continuing education of professional/engineering skills.		I				I		P				
5.0	Psychomotor												
5.1	Not available												
5.2													

5. Admission Requirements for the program

Attach handbook or bulletin description of admission requirements including any course or experience prerequisites.

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 enrol 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 behaviour.
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>

6. Attendance and Completion Requirements

Attach handbook or bulletin description of requirements for:

- Attendance.
- Progression from year to year.
- Program completion or graduation requirements.

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 percent 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 through 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: <http://portal.nu.edu.sa/web/guest/education-regulations>

E. Regulations for Student Assessment and Verification of Standards

What processes will be used for verifying standards of achievement (eg check marking of sample of tests or assignments? Independent assessment by faculty from another institution) (Processes may vary for different courses or domains of learning.)

The following three criteria should be fulfilled in order to achieve an honors degree in addition to the required GPA.

Qualifications for First-Class or Second-Class Honors Degree

- The student must not fail in any course that has been studied in this university or in any other

university.

- The student must fulfil all graduation requirements between the minimum period set by the university and the maximum number of semesters allowed.
- The student must have studied at least 60% of the graduation requirements.

Academic Warning: A student will be given this status after the final grades have been processed at the end of each regular semester if: (a) his cumulative GPA is less than 2.00 (b) his semester GPA is less than 2.00 out of 5.00.

Dismissal from the University: The student will be dismissed from the university in the following cases:

- If a student receives three consecutive academic warnings for the GPA less than 2.0, he may receive a fourth opportunity to raise his cumulative grade, assuming that he obtain 45 points from 15 credit hours. Therefore, there is no way to have a fifth opportunity and the student will be dismissed.
- In the event that a student fails to fulfil all graduation requirements within a period that does not exceed 12 semesters.

The examination and grading system of the program adhere to the following regulations:

1. Success in a course is usually based on the combination of a grade awarded for the course work, plus a grade for the final examination.
2. The grade for the course work and the final examination are 50% each.
3. Each course has a total of 100 marks.
4. The pass mark in each course is 60%.

Grading system: The classification of total points that the student acquired over the total marks of each enrolled courses studied in a semester. The grading policy in every courses that the student achieves are classified as follow:

Percentage	Evaluation	Letter grade	GPA (out of 5.0)
95 – 100	Exceptional	A+	5.00
90 – 94	Excellent	A	4.75
85 – 89	Superior	B+	4.50
80 – 84	Very Good	B	4.00
75 – 79	Above Average	C+	3.50
70 – 74	Good	C	3.00
65 – 69	High Pass	D+	2.50
60 – 64	Pass	D	2.00
Less than 60	Fail	F	1.00

Table 1.1 Grading System

Source: <http://portal.nu.edu.sa/web/guest/education-regulations>

F Student Administration and Support

1. Student Academic Counselling

Describe the arrangements for academic counseling and advising for students, including both scheduling of faculty office hours and advising on program planning, subject selection and career planning (which might be available at college level).

Academic advising 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.

Objectives of Academic Advising

To open a file for students that contains a biography of the student during his study at the university (student behaviour 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.

To help the students by planning an educational program consistent with their interests, abilities and needs of the labour market.

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.

To advise the students on the selection of courses appropriate for their level and abilities.

To guide the students to understand the university policies and procedures.

To remind the students regarding academic events (registration, addition, deletion, etc.).

Mechanism of Academic Advising

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.

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.

The office hour schedule for all faculty members are clearly fixed in front of the respective offices.

Students can also get some guidance and advice through the University website.

2. Student Appeals

G. Learning Resources, Facilities and Equipment

1a. What processes are followed by faculty and teaching staff for planning and acquisition of textbooks, reference and other resource material including electronic and web based resources?

- 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.

1b. What processes are followed by faculty and teaching staff for planning and acquisition resources for library, laboratories, and classrooms.

- 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.

2. What processes are followed by faculty and teaching staff for evaluating the adequacy of textbooks, reference and other resource provisions?

- 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.

3. What processes are followed by students for evaluating the adequacy of textbooks, reference and other resource provisions?

- At the end of each semester, the students are asked to fill in a questionnaire including questions about the textbook.

4. What processes are followed for textbook acquisition and approval?

- New textbook demands are forwarded to the vice-Dean to approve and send to the Deanship of Library Affairs.

H. Faculty and other Teaching Staff

1. Appointments

Summarize the process of employment of new faculty and teaching staff to ensure that they are appropriately qualified and experienced for their teaching responsibilities.

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 summarised 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 members 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.

2. Participation in Program Planning, Monitoring and Review

a. Explain the process for consultation with and involvement of teaching staff in monitoring program quality, annual review and planning for improvement.

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.

b. Explain the process of the Advisory Committee (if applicable)

The EE program established the Program Advisory Committee (PAC). PAC is one of the main stakeholders of the EE 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:

- Encourage the communication between the program and private and public employers in the kingdom.
- Convey current challenges facing EE field into the program future plan.
- Help develop and guide the education and curriculum issues in the program.
- Assessment and improvement of the academic programs.
- Recent technologies directions, skills and knowledge provided by the program program's objectives and mission, as well as other pertinent issues.
- To recognize achievements of alumni and other supporters of the program.
- 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.

3. Professional; Development

What arrangements are made for professional development of faculty and teaching staff for:

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.

- There are several training courses for the staff members to improve their skills in their field and teaching process.
- Staff members are following the modern technology teaching techniques, such that teaching using projectors which is fixed already in each class.

- 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:

- a. Research projects grants and administration.
- b. Web-based Resources (research administration guide, policies, and forms).
- c. Participation financial support in international conferences.
- d. Workshop, seminars and training programs.
- e. Teaching performance evaluation.

4. Preparation of New Faculty and Teaching Staff

Describe the process used for orientation and induction of new, visiting or part time teaching staff to ensure full understanding of the program and the role of the course(s) they teach as components within it.

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.

5. Part Time and Visiting Faculty and Teaching Staff

Provide a summary of Program/Department/College/institution policy on appointment of part time and visiting teaching staff. (i.e. Approvals required, selection process, proportion to total teaching staff, etc.)

Not Applicable

I. Program Evaluation and Improvement Processes

1. Effectiveness of Teaching

a. What processes are used to evaluate and improve the strategies for developing learning outcomes in the different domains of learning? (e.g. assessment of learning achieved, advice on consistency with learning theory for different types of learning, assessment of understanding and skill of teaching staff in using different strategies)

- 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:

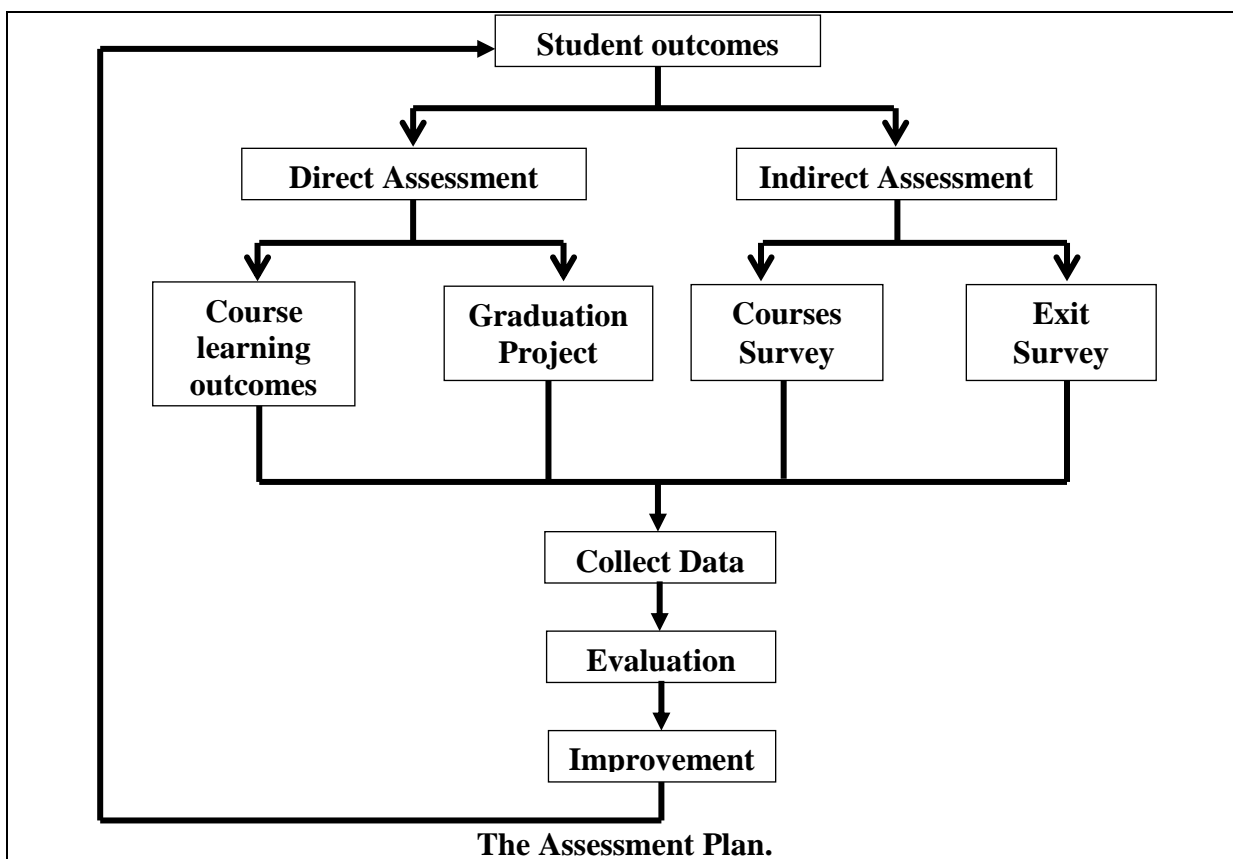
- The continuous improvement cycle (assessment, evaluation, and improvement) is split into two parts with assignment of responsibilities for each to different parties:
 - Assessment is assigned to a dedicated committee in the department level, called the Assessment and Evolution Committee.
 - Evaluation and improvement are assigned to assessment stakeholders such as course instructors, program heads, and curriculum committees.
- Assessment 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 below.
- 1. **Direct method:** It starts from observable actions by students at the course level, so called course learning outcomes (CLO).
 - 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.



b. What processes are used for evaluating the skills of faculty and teaching staff in using the planned strategies?

- 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.

2. Overall Program Evaluation

a. What strategies are used in the program for obtaining assessments of the overall quality of the program and achievement of its intended learning outcomes:

(i) From current students and graduates of the program?

Direct assessment methods include:

- 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 analysed. After each semester, all analysis data are submitted to the administrator of the accreditation software CLOSO and to the head of the department.

(ii) From independent advisors and/or evaluator(s)?

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

(iii) From employers and/or other stakeholders.

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

Complete the following two tables.

1. Program KPI and Assessment Table

2. Program Action Plan Table

Program KPI and Assessment Table

KPI #	List of Program KPIs Approved by the Institution	KPI Target Benchmark	KPI Actual Benchmark	KPI Internal Benchmark	KPI External Benchmark	KPI Analysis	KPI New Target Benchmark
S01 Mission Goals and Objectives							
KPI-A01	The approval decision to adopt and document the vision and mission from program and college council	Minutes of meeting	Minutes of meeting	N.A	N.A	Completed	Not required
KPI-A02	Satisfaction rate of students, alumni, faculty members and the labour market for the vision and mission of each program separately	80%	78.5%	N.A	N.A	Satisfied and need to compare with benchmarks internally and externally	Not required
	a- Students	80%	72%	N.A	N.A	The level of satisfaction of student is below the target level, and this may be attributed to the transfer to the new campus and many facility in the campus still under construction	Not required
	b- Alumni	80%	70%	N.A	N.A	The level of satisfaction of alumni is below the target level, and this may be attributed to the transfer to the new campus and many facility in the campus still under construction	Not required
	c- Faculty members	80%	92%	N.A	N.A	Satisfied and need to compare with benchmarks internally and externally	Not required
	d-Labour market	80%	80%	N.A	N.A	Satisfied and need to compare with benchmarks internally and externally	Not required
KPI-A03	The proportion of alignment between the university, college and the program mission statement	90%	95%	N.A	N.A	Satisfied and need to compare with benchmarks internally and externally	Not required
KPI-A04	The number of decisions and decrees made by reference to the mission of the program	75%	5 decrees	N.A	N.A	Decrees of program council need to be related to the mission statement	Not required
S02 Program Administration							

KPI-A05	Documents that define the policies and authorities	Documents	Documents	N.A	N.A	Documented There are some required forms, letters and minutes (not provided till now)	Not required
KPI-A06	Satisfaction rate of faculty members and administrators for administrative and academic environment	70%	44%	N.A	N.A	Not Satisfied, action plan should consider this point.	60%
S03 Management of Program Quality Assurance							
KPI-A07	Students overall evaluation on the quality of their learning experiences at the program. (Average rating of the overall quality of their program on a five-point scale in an annual survey final year students.)	79.6%	85%	N.A	N.A	Satisfied and need to compare with benchmarks internally and externally	Not required
KPI-A08	Proportion of courses and student in which student evaluations were conducted to evaluate courses and lecturer during the year.	100%	100%	N.A	N.A	Satisfied, all courses are evaluated by each students using online questioner	Not required
S04 Learning and Teaching							
KPI-A09	Ratio of students to teaching staff. (Based on full time equivalents) teaching based	25:1	7:1	N.A	N.A	The ratio of students to teaching staff is less than the targeted one. However, it is required to compare with benchmarks internally and externally.	Not required
KPI-A10	Ratio of students to teaching staff. (Based on program)	15:1	9:1	N.A	N.A	The ratio of students to teaching staff is less than the targeted one. However, it is required to compare with benchmarks internally and externally.	Not required
KPI-A11	Satisfaction of employment for professional and personal skills of the graduates of the program. (average)	75%	50%	N.A	N.A	The employer survey is prepared, but we do not have up-to-date feedback from the employers. The administrative staff would help pus in this regard.	Not required

KPI-A12	Students overall rating on the quality of their courses. (Average rating of students on a five-point scale on overall evaluation of courses.)	80%	93%	N.A	N.A	The students overall rating on the quality of their courses is higher than the targeted one. However, it is required to compare with benchmarks internally and externally.	Not required
KPI-A13	Proportion of teaching staff with verified doctoral qualifications.	70%	78%	N.A	N.A	The proportion of teaching staff with verified doctoral qualifications is higher than the targeted one. However, it is required to compare with benchmarks internally and externally.	Not required
KPI-A14	Percentage of students entering programs whom successfully complete first year.	80%	100%	N.A	N.A	The achieved proportion is higher than the targeted one. However, it is required to compare with benchmarks internally and externally.	Not required
KPI-A15	Proportion of students entering undergraduate programs who complete those programs in minimum time.	70%	86%	N.A	N.A	Satisfied.	Not required
KPI-A16	Proportion of graduates from undergraduate programs who within six months of graduation are: (a) employed (b) enrolled in further study (c) not seeking employment or further study	≥ 30% ≥ 10% ≥ 10%	57% 0% 0%	N.A	N.A	We do not have all the information at hand. The Alumni Unit may help us in this regard.	Not required
S05 Student Administration and Support Services							
KPI-A17	Ratio of students to administrative staff	75:1	363:1	N.A	N.A	The number of registered students in the faculty is 363 during the second semester of 1336 H and the number of administrative staff, which has a direct contact to student, is 1. However, there is some short coming in the quality of services offered to the students.	Not required
KPI-A18	Student evaluation of academic and career counselling. (Average	80%	44%	N.A	N.A	61% of students in electrical department are satisfied for academic counselling and 27% for	Not required

	rating on the adequacy of academic and career counselling on a five-point scale in an annual survey of final year students.					career counselling. This is the proof that the career-counselling unit do not exist in the engineering college. The 44% results show that the percentage is so less that the targeted. The point of the strength is that the academic advisor is always available during the office hour allocated for academic advising. Many students were not satisfied on the level of progress follow up by their academic advisors. In addition, more students answered negatively when they asked about either their academic advisors were encouraging them to develop their thought and tendencies in their field of specialization. Analysis also shows that fewer efforts made by the academic advisors to clarify students on the relation between the courses and the detail curriculum of the department. The survey related to career counselling shows that students cannot benefit from the professional advising services in the department.	
KPI-A19	The percentage of students participating in non-curricular activities	40%	3%	N.A	N.A	The point of the weakness is that more students are not interested in participating in non - curricula activities.	Not required
S06 Learning Resources							
KPI-A20	Student evaluation of library services. (Average rating on adequacy of library services on a five-point scale in an annual survey of final year students.)	75%	67%.	N.A	N.A	It is a little bit lower than the recommended target of 75%. Good improvement plan is required in learning resources management to reach the target.	Not required
KPI-A21	Number of book titles held in the library as a proportion of the number of students.	1:10	1:9	N.A	N.A	This means that there are 9 book copies for each student in average. It is a little bit lower than the recommended target of 1:10. The library must purchase more books every year to reach the	Not required

						benchmark target.	
S07 Facilities and Equipment							
KPI-A22	Number of accessible computer terminals per student.	1:25	1.12	N.A	N.A	The ratio is a bit lower than the benchmark. The department should arrange more computers to meet the increasing student's number.	Not required
KPI-A23	Average overall rating of adequacy of facilities and equipment in a survey of teaching staff.	80%	68%	N.A	N.A	This value is lower than the recommended target value of 80%. The intended improvement plan in facilities and equipment is going to be sufficient to attain the target.	Not required
KPI-A24	The percentage of students satisfied with their classrooms and laboratories rate	85%	67%.	N.A	N.A	It is a little bit lower than the recommended target of 80%. Good improvement plan is required in facilities and labs management to reach the target.	Not required
S08 Financial Planning and Management							
KPI-A25	The percentage of teaching staff satisfaction with financial management system and the adequacy of the available budget for the program	80%	66.5%	N.A	N.A	Need improvements	70%
S09 Employment Processes							
KPI-A26	Proportion of teaching staff leaving the institution in the past year for reasons other than age retirement.	≤ 10%	13.3%	N.A	N.A	NOT Satisfied	10%
KPI-A27	Proportion of teaching staff participating in professional development activities during the past year.	1:1	1:0.38	N.A	N.A	All new staff members need to attend workshops.	1:0.6
S10 Research							
KPI-	Number of refereed publications	1:2	1:2.4	N.A	N.A	Need improvements	Not

A28	(journal and conferences) in the previous year per full time equivalent member of teaching staff.						required
-----	---	--	--	--	--	--	----------

S11 Relationships with the Community

KPI-A29	Number of community education programs, consultancy, and training provided by the program.	3	3	N.A	N.A	Satisfied	Not required
---------	--	---	---	-----	-----	-----------	--------------

Analysis of KPIs and Benchmarks: (list strengths and recommendations)

S01 Mission Goals and Objectives

Strength:

- The mission and goals are established to cover the need of all stakeholders and the mission was analysed and related to the mission of faculty and university the relationship is one to one supporting the main key component of the university mission.
- The mission is published through the program website, procures, posters, and files. Also all the missions were explained to all the stakeholders.
- The level of satisfaction of stakeholders about the mission statement is acceptable in compare with the KPI target.

Recommendations:

- Further publicity of the mission statement is needed through workshops and seminars.
- More involvement of student and alumni in reviewing the mission statement.

S02 Program Administration

Strength:

- Documents that define the policies and authorities are available.

Weaknesses:

- Satisfaction rate of faculty members and administrators for administrative and academic environment is less than targeted.

Recommendations:

- Some documents need approval from the department and faculty council
- Open model schools for the children of faculty members in University City.
- Open University residence in University City.

S03 Management of Program Quality Assurance

Strength:

- All of the student evaluate all the courses through online courses evaluation.

- There is a peer review questioner.

Recommendations:

- Implement the peer review in all courses in the program.

S04 Learning and Teaching

Strength:

- Ratio of students to teaching staff is within the target level
- Students overall rating on the quality of their courses is higher than the target level
- The ratio of teaching staff with verified doctoral qualifications to the total teaching staff is higher than targeted.
- The ratio of graduates from undergraduate programs who within six months have employed is higher than targeted.

Recommendations:

- Improve the satisfaction rate of the employers about the professional and personal skills of the civil engineering program graduates.
- Increase the percentage of the students who entering the civil engineering program and complete in the minimum time for graduation.
- Students can be trained during their field-training course in the different public and private sectors such as Electricity Corporation of Saudi and Ministry of Water and Electricity.
- Community Contribution of College of Engineering in different fields of Engineering and Sciences and these fields has been covered by different workshops and seminars by the Scientific and Engineering Centre in the College through lectures held by different staff members.

S05 Student Administration and Support Services

Strength:

- The academic advisor is always available during the office hour allocated for academic advising.
- Student's satisfaction on the level of helps and supports provided by their academic advisors during the registration period.

Recommendations:

- The role of administrative staff should be more effective in helping students. The tasks of the administrative staff should be reviewed and reconsider from the administration. The tasks should be plan in such a way that it should touch the students need. In general, the quality of services offered to the students must be improved.

More efforts should be done in order to improve the quality of academic and career counselling offered in the department. More focus must be directed toward progress follow up of the students and toward narrowing the gap between students and their academic advisors. Non-curricula should be diversify and should not be restricted to the scientific and recreational activities. Students should be encouraged to intensify their involvement in diverse Non-curricula activities, i.e., sports, cultural and creative activities.

S08 Financial Planning and Management

Strength:

- Basic requirements for the financial management system and the adequacy of the available budget for the program available well.

Weaknesses:

As a result of the questionnaire show that the satisfaction for the financial management system and the adequacy of the available budget for the program and the level of satisfaction is less than 70%

Program Coordinator does not submit annual detailed proposals for the program budget.

No periodic reports on the program budget

Recommendations:

- Mechanisms are needed to allocate a proportion of the budget for departmental operation per academic year.
- The coordinator of department or head of department must submit annual budget proposals for the program
- Detailed annual reports on the program budget should be prepared by the program administration

S09 Employment Processes

Strengths:

- The number of courses on the increase

Weakness:

- Percentage of the faculty members part taking in the vocational training development only 38%
- The transition to University City has affected the cancellation of a number of professional development courses such as quality and academic accreditation courses.

Recommendations:

- Organizing training courses in engineering research centre at the college
- And at other deans in university

S10 Research

Strength:

- Presence of a research plan for Electrical Engineering Department which was established based on the study of research-necessity for various scientific disciplines.
- The research plan was made taking into account of the available development possibilities.
- The presence of a university research funding unit which supports the research projects in the university in competitively and clear manner and trying to develop the various sources of funding for scientific research.
- The Funding Research Unit (FRU) has a database for researches.
- The department uses a variety of styles to encourage joint scientific research and to participate in research projects.
- The department encourages the development of basic skills for staff members and their assistants through a certified and applied programs made by college and university to the development of their capacity.

- The presence of researchers in the department and the College from many countries of the world.

Recommendations:

- Funding allocations of researches and expenses to participate in scientific conferences.
- The research plan requires further improvement and detail. The research choice depends on mostly on the following factors: Researcher's personal vision and what is available from funding capabilities to cover the expenses of research.
- Provide enough financial and moral incentive to support researchers.
- Establish a specific system to enhance revenue from the industrial sector through scientific research.
- Increase the access of scientific research in the educational process as well as in the practical application for beneficiaries from scientific research in the field of electrical engineering.
- Establish a mechanism for the attainment of local and international sources of funding for scientific research.
- Increase public and institutional awareness about the importance of scientific research in the development.

S11 Relationships with the Community

Strength:

- Graduate Unit has been established in the College and an office has been chosen for it beside a secretary.
- Database is available for all graduated students.
- Students can be trained during their field-training course in the different public and private sectors such as Electricity Corporation of Saudi and Ministry of Water and Electricity.
- Community Contribution of College of Engineering in different fields of Engineering and Sciences and these fields has been covered by different workshops and seminars by the Scientific and Engineering Centre in the College through lectures held by different staff members.

Recommendations:

- Activation the role of the Graduate Unit in the faculty to effectively contact with graduates periodically through their phone numbers, e-mails and meeting.
- Establish a database for the employers from different public and private sectors, which our graduate could work so it is able to contact with them easily to get the feedback about our graduates.

Seminars and workshops should be declared for the local community of Najran to attend and cooperate during these seminars.

NOTE: The following definitions are provided to guide the completion of the above table for Program KPI and Assessment.

- **KPI** refers to the key performance indicators the programs used in the SSRP and are approved by the institution (if applicable at this time). This includes both the NCAAA suggested KPIs chosen and all additional KPIs determined by the program (including 50% of the NCAAA suggested KPIs and all others).

- **Target Benchmark** refers to the anticipated or desired outcome (goal or aim) for each KPI.
- **Actual Benchmark** refers to the actual outcome determined when the KPI is measured or calculated.
- **Internal Benchmarks** refer to comparable benchmarks (actual benchmarks) from inside the program (like data results from previous years or data results from other departments within the same college).
- **External Benchmarks** refer to comparable benchmarks (actual benchmarks) from similar programs that are outside the program (like from similar programs that are national or international).
- **KPI Analysis** refers to a comparison and contrast of the benchmarks to determine strengths and recommendations for improvement.
- **New Target Benchmark** refers to the establishment of a new anticipated or desired outcome for the KPI that is based on the KPI analysis.

Program Action Plan Table

Directions: Based on your “*Analysis of KPIs and Benchmarks*” provided in the above Program KPI and Assessment Table, list the recommendations identified below.

No.	Recommendations	Action Points	Assessment Criteria	Responsible Person	Start Date	Completion Date
S01 Mission Goals and Objectives						
1.	Further publicity of the mission statement is needed through workshops and seminars.	Improve the publicity of the mission statement through workshops and seminars.	Minute of meeting	Program council	Second semester 1436	Second semester 1437
2.	More involvement of student and alumni in reviewing the mission statement.	Conduct regular meeting with student and alumni advisory council	Minute of meeting	Student activity committee Office of Alumni	Second semester 1436	Second semester 1437
S02 Program Administration						
1.	Some documents need approval from the department and faculty council	approval of the required documents from the department and faculty council	Minutes of meeting	Program council Faculty council	Second semester 1436	Second semester 1437
2.	Satisfaction rate of faculty members and administrators for administrative and academic environment	<ul style="list-style-type: none"> • Chances to select the course to teach • Upload the administrative duties assigned to faculty member for full-time academic and research work, consulting professional and community service through the provision of administrative staff in the department. • Find material and moral 	Percentage of satisfaction	Program council Faculty council University council	Second semester 1436	Second semester 1437

		incentives for faculty members				
S03 Management of Program Quality Assurance						
1.	Apply the peer review for all faculty members.	Apply the peer review for all faculty members.	<ul style="list-style-type: none"> Percentage of execution 	Assessment and evaluation committee	Second semester 1436	Second semester 1437
S04 Learning and Teaching						
1.	Improve the proportion of students who entering the program and graduates within the minimum time.	Arrange with PYP to improve the achievement of student in knowledge and skills in English language, fundamental science and mathematics.	<ul style="list-style-type: none"> Progression percentage of Implementation Proportion of students who entering the program and graduates within the minimum time. 	Department Chairman	Second semester 1436	Second semester 1437
		Improve the achievement of student in knowledge and skills in English language, fundamental science and mathematics through the program first year general courses; through the improvement of the assessment processes for these courses and periodic meetings and monitoring of these courses since they are taught by none program staff.	<ul style="list-style-type: none"> Progression percentage of Implementation Proportion of students who entering the program and graduates within the minimum time. 	Curriculum Committee	Second semester 1436	Second semester 1437

		Major curriculum review should be done, including: <ul style="list-style-type: none"> ▪ Courses sequence ▪ Prerequisite modifying ▪ Course content modification and introducing new course. ▪ Separate labs into individual course. 	<ul style="list-style-type: none"> • Progression percentage of Implementation • Proportion of students who entering the program and graduates within the minimum time. 	Curriculum Committee	Second semester 1436	Second semester 1437
		Activation the academic counselling.	<ul style="list-style-type: none"> • Progression percentage of Implementation • Proportion of students who entering the program and graduates within the minimum time. 	Academic counselling committee	Second semester 1436	Second semester 1437
2.	Improve the satisfaction rate of the employers about the professional and personal skills of the civil engineering program graduates.	Arrange with PYP to make a plan for improvement of English language skills for students.	<ul style="list-style-type: none"> • Progression percentage of implementation. • Satisfaction of employment for professional and personal skills of the graduates of the program. 	Department Chairman	Second semester 1436	Second semester 1437
		Adding small projects or term paper in appropriate course in which the students are asked to give oral and written presentation.	<ul style="list-style-type: none"> • Progression percentage of implementation. • Satisfaction of employment for professional and personal skills of the graduates of the program. 	Curriculum Committee	Second semester 1436	Second semester 1437
		Increase the ability for teamwork by focusing on working group assessment through labs and graduation projects.	<ul style="list-style-type: none"> • Progression percentage of implementation. • Satisfaction of employment for professional and personal skills of the graduates of the program. 	Curriculum Committee	Second semester 1436	Second semester 1437

		Contact with several companies working in different civil engineering fields to give the students the opportunity to be familiar with different discipline of civil engineering projects.	<ul style="list-style-type: none"> Progression percentage of implementation. Satisfaction of employment for professional and personal skills of the graduates of the program. 	Graduation projects and field training committee	Second semester 1436	Second semester 1437
3.	Alumni Survey : Alumni survey should be implemented every 4 years. A questionnaire should be sent to a set of randomly selected alumni. The questionnaire should measure the satisfaction about the SO.	Alumni survey implementation	Percentage of satisfaction	Office of Alumni	Second semester 1436	First semester 1437
4.	Employer Survey : Employers' should be implemented every 4 years. Questionnaires should be sent to a set of randomly selected employers. The questionnaire should measure the satisfaction about the graduates, so the employers may indicate our graduate's abilities concerning each SO.	Employer survey implementation	Percentage of satisfaction	Office of Alumni	Second semester 1436	First semester 1437
5.	To rise the indirect assessments reliability; the students need to be advised to be more reasonable when dealing with the surveys.	Meetings with students	Indirect assessment results	Academic Advising committee	Second semester 1436	Second semester 1436

S05 Student Administration and Support Services

1.	Improve the quality of services offered to the students.	The role of administrative staff should be more effective in helping students. The tasks of the administrative staff should be reviewed and reconsider from the administration. The tasks should be plan in such a way that it should touch the students need.	Percentage of student satisfaction about role of administrative staff. Progression percentage of job description implementation.	Head of the engineering college, Recruitment, Promotion and ethics committee	First semester 1437	First semester 1438
2.	More efforts should be done in order to improve the quality of academic offered in the department. Creation of career counselling unit in the faculty. More focus must be directed toward progress follow up of the students and toward narrowing the gap between students and their academic advisors. Effective academic advising should be provided to the students throughout the academic semester and the academic advisors should always be available for helping students during the counselling hours.	Improve the quality of academic and counselling and creation of career counselling unit in the college.	Percentage of satisfaction about academic and career counselling	Head of the engineering college, Academic Advising committee Student activity committee Office of Alumni	First semester 1437	First semester 1438
3.	Non-curricula should by diversify and should not be restricted to the scientific and recreational activities. Students should be	Diversify the non-curricula activity Encourage the student to intensify their involvement in diverse Non-curricula activities	Percentage of students participated in non-curricula activity Percentage of student satisfaction about non-curricula activity	Student activity committee	First semester 1437	First semester 1438

	encouraged to intensify their involvement in diverse Non-curricula activities, i.e., sports, cultural and creative activities.					
S06 Learning Resources						
1.	Good improvement plan is required in learning resources management to satisfy students.	<p>Students in electrical engineering department are seen to be mostly satisfied about: 1) the quality of Najran University websites and 2) the use of free resources on the internet. There is enough satisfaction about most of examined points like the adequacy of digital library resources and the regular use of learning resources in the university. The least levels of satisfaction are about adequacy of computers for making search on data bases and adequacy of help offered by library staff.</p> <p>Therefore it is proposed to:</p> <ol style="list-style-type: none"> 1) Continuous support and maintenance of Najran University websites. 2) Try to increase the number of computers used in making search 3) Train and ask librarians to do more help to students. 	questionnaire	Learning Resources committee & Program council	First semester 1437	First semester 1438

2.	The library must purchase more books every year to reach the benchmark target.	The library must purchase more books every year to reach the benchmark target.	Calculation of ratio	Program council	First semester 1437	First semester 1438
S07 Facilities and Equipment						
1.	The department should arrange more computers to meet the increasing student's number.	The department should arrange more computers to meet the increasing student's number.	Calculation of ratio	Program council	First semester 1437	First semester 1438
2.	Improvement plan in facilities and equipment is needed to satisfy the staff.	Staff members in electrical engineering department are seen to be mostly satisfied about: 1) cleanness of buildings and grounds and 2) adequacy of meeting rooms. There is enough satisfaction about most of examined points like application of health and safety conditions in buildings. The least levels of satisfaction are about suitability of facilities to the needs of people with disabilities and adequacy of dining facilities. Therefore it is proposed to: 1) Keep the good maintenance of facilities. 2) Consider the needs of people with disabilities in facilities. 3) Try to offer more and better dining facilities.	questionnaire	Facilities committee & Program council	First semester 1437	First semester 1438

3.	Good improvement plan is required in facilities and labs management to increase the student's satisfaction.	Students in electrical engineering department are seen to be mostly satisfied about: 1) the adequacy of prayer places and 2) the easy access to rooms. There is enough satisfaction about most of examined points like the adequacy of cleanness of rooms and availability of labs after official hours. The least levels of satisfaction are about adequacy of technical support in labs and awareness of safety procedures. Therefore it is proposed to: 1) Continuous support and maintenance of prayer places and rooms tidiness. 2) Try to increase the technical assistance in labs. 3) Give more information and training on safety procedures to students.	questionnaire	Facilities committee & Program council	First semester 1437	First semester 1438
S08 Financial Planning and Management						
1.	The coordinator of department or head of department must submit annual budget proposals for the program.	Prepare annual budget proposals for the program.	Progression percentage of implementation	Department Chairman	Second semester 1436	Second semester 1437
2.	Detailed annual reports on the program budget should be prepared by the program administration.	Prepare annual reports on the program budget	Progression percentage of implementation	Department Chairman	Second semester 1436	Second semester 1437

3.	Mechanisms are needed to allocate a proportion of the budget for departmental operation per academic year.	Allocate the proportion of the budget for departmental operation per academic year.	Progression percentage of implementation	Department Chairman	Second semester 1436	Second semester 1437
S09 Employment Processes						
1.	Proportion of teaching staff leaving the institution in the past year for reasons other than age retirement.	The achieved value is not within the target	Progression percentage of implementation	Department Chairman	Second semester 1436	Second semester 1437
2.	Proportion of teaching staff participating in professional development activities during the past year.	All new staff members need to attend workshops.	Proportion of teaching staff participating in professional development activities during the next year.	Department Chairman	Second semester 1436	Second semester 1437
S10 Research						
1.	Provide enough financial and moral incentive to attend the scientific conference for the researchers.	Increase the financial and moral incentive to support researchers	Percentage increase in research grants	Scientific and community services committee	Second semester 1436	Second semester 1437
2.	Increase the access of scientific research in the educational process as well as in the practical application for beneficiaries from scientific research in the field of electrical engineering.	Increase the number access of scientific research	Number of additional refried journal	Scientific and community services committee	Second semester 1436	Second semester 1437

3.	Increase the faculty members to present their work in the seminar	Introduce department seminar frequently	Number of seminars in one academic year	Scientific and community services committee	First semester 1437	Second semester 1437
S11 Relationships with the Community						
1.	Activation the role of the Graduates Unit in the faculty to effectively contact with graduates periodically through their phone numbers, e-mails and meeting.	Contact with graduate periodically through phone calling, email, and meetings	Number of meetings Satisfaction level of graduates and feedback about the program	Graduates Unit	First semester 1437	First semester 1438
2.	Establish a database for the employers from deferent public and private sectors, which our graduate could work so it is able to contact with them easily to get the feedback about our graduates.	Contact with public and private sectors which our graduate could work	Progression percentage of database implementation	Graduates Unit	First semester 1437	First semester 1438
3.	Seminars and workshops should be declared for the local community of Najran to attend and cooperate during these seminars.	Advertise for seminars and workshops for the local community of Najran	Percentage of attendance from local community of Najran and there feedback assessment.	Community Service Committee	First semester 1437	First semester 1438
Action Plan Analysis (List the strengths and recommendations for improvement of the Program Action Plan)						

Attachments:

- 1. Copies of regulations and other documents referred to in template preceded by a table of contents.**
- 2. Course specifications for all courses including field experience specification if applicable.**

Authorized Signatures

Dean/ Program Chair	Name	Title	Signature	Date
Program Dean or Chair of Board of Trustees Main Campus	Dr. Abdullah Alwadie	Associate Professor		
Vice Rector				